Electricity Regulation

Contributing editor
John Dewar

2019

GETTING THE DEAL THROUGH

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Milbank, Tweed, Hadley & McCloy LLP

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Preface

Electricity Regulation 2019

Seventeenth edition

Getting the Deal Through is delighted to publish the seventeenth edition of *Electricity Regulation*, which is available in print, as an e-book and online at www.gettingthedealthrough.com.

Getting the Deal Through provides international expert analysis in key areas of law, practice and regulation for corporate counsel, cross-border legal practitioners, and company directors and officers.

Throughout this edition, and following the unique **Getting the Deal Through** format, the same key questions are answered by leading practitioners in each of the jurisdictions featured. Our coverage this year includes new chapters on Ecuador, Brazil, South Africa, Poland, Italy and the Netherlands.

Getting the Deal Through titles are published annually in print. Please ensure you are referring to the latest edition or to the online version at www.gettingthedealthrough.com.

Every effort has been made to cover all matters of concern to readers. However, specific legal advice should always be sought from experienced local advisers.

Getting the Deal Through gratefully acknowledges the efforts of all the contributors to this volume, who were chosen for their recognised expertise. We would like to thank the contributing editor, John Dewar of Milbank, Tweed, Hadley & McCloy LLP for his assistance with this volume. We also extend special thanks to Kirsti Massie of White & Case, who contributed the original format from which the current questionnaire has been derived, and who helped to shape the publication to date.

GETTING THE DEAL THROUGH

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Global overview

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Overview
Rapid developments in energy technology and lower upfront investment costs mean that energy is becoming more measurable, decentralised, interconnected and intelligent than ever before. What was recently considered the future, is now considered the past. Things we thought about 10 years ago may no longer apply and technologies we thought were 10 years away are happening right now. This also means that energy regulators are having to keep pace with this change, reflected very aptly by the theme of the most recent summit of the World Forum on Energy Regulation (WFER), hosted in Mexico in March 2018, 'Regulating in a Time of Innovation'. The forum brought into focus three key themes:

- empowered consumers;
- dynamic markets; and
- sustainable infrastructure.

In addition to these, a fourth pillar should also be added: the Decarbonisation and Clean Energy agenda, which is, in part, responsible for much of the change driving the first three pillars. The aim to reduce emissions, promote clean energy and the imposition of climate targets is shared by most developed and developing countries and therefore is prevalent in the changing regulatory landscape. By drawing on these themes, this keynote chapter reflects upon some of the recent changing technologies and business models across the globe and how our energy regulators are keeping pace with the unfolding energy revolution.

The decarbonisation of energy
By 2017, 150 countries had adopted renewable electricity generation targets; 126 of these had implemented dedicated policies, regulations and subsidies (the International Renewable Energy Agency (IRENA), the International Energy Agency (IEA) and the Renewable Energy Policy Network for the 21st Century (REN21) (2018)). Such policies and regulation include:

- quotas and tradeable certificates;
- competitively priced auctions; and
- feed-in policies.

Quotas and mandates
Renewable energy electricity targets permeate to electricity suppliers, generators and consumers through electricity quota obligations, also known as renewable obligations (ROs, in the United Kingdom), renewable portfolio standards (RPSs, in the United States) or renewable purchase obligations (RPOs, in India). By the end of 2016, 100 jurisdictions had adopted some variety of electricity quota obligations, including 29 US states (IRENA, IEA and REN21 (2018)).

Taking South Korea as an example, which has put in place a 10 per cent renewable energy target by 2020, the government implemented its RPS to accelerate its renewable energy deployment by requiring the 13 largest power companies at the time (with installed power capacity larger than 500MW) steadily to increase their renewable energy mix in total power generation (International Energy Agency, 2018). In order for power companies to meet their RPS targets they can invest in renewable energy installations themselves or purchase Renewable Energy Certificates on the market.

Renewable energy trade certificates
Renewable energy trade certificates (RECs) are awarded to generators for each MWh of renewable energy produced and market operators participate by receiving or buying a number of certificates to meet the quotas set each year. The implementation of a framework of tradeable certificates has become an internationally prevalent system for meeting such quotas.

Turning to the world's first (and largest) major carbon market, the European Union's Emissions Trading System (EU ETS) was recently revised in early 2018 to enable it to achieve the EU's 2030 emission reduction targets in line with the 2030 climate and energy policy framework and as part of its contribution to the 2015 Paris Agreement. The revision focuses on:

- consolidating the EU ETS as an investment driver by accelerating annual reductions in allowances to 2.2 per cent as of 2021 and reinforcing the Market Stability Reserve (the mechanism established by the EU in 2015 to reduce the surplus of emission allowances in the carbon market and to improve the EU ETS's resilience to future shocks);
- continuing the free allocation of allowances as a safeguard for the international competitiveness of industrial sectors at risk of carbon leakage, while ensuring that the rules for determining free allocation are focused and reflect technological progress; and
- assisting the energy sector to meet the innovation and investment challenges of the low-carbon transition via several low-carbon funding mechanisms.

Catching up with this tried-but-tested decarbonisation initiative is China, who last year announced via its National Development and Reform Commission (NDRC) the intention to launch a 'green certificate' trading and subsidy scheme that requires polluters, such as coal-fired power generators, to buy certificates from renewable energy suppliers (wind and solar) in a bid to decrease the extent of government subsidies provided to the renewables sector (worth 75 billion yuan in 2017). The first rollout had been criticised as unsuccessful owing to its voluntary nature; however, it is understood that this scheme is to be made mandatory in 2018 – although at the time of writing, few details have been provided.

Competitively priced auctions
An increasing number of countries are also relying on auctions to develop their energy capacity (often awarded on an annual basis), which are appealing owing to their flexibility in design and transparency in the market. Last year, the UK government awarded contracts worth £176 million to 11 low-carbon electricity schemes (in particular, offshore wind) under-scoring the heavy competition with gas-fired generation. For example, two offshore wind schemes were awarded contracts for record-lows of £57.50 per MWh. However, the limitations of auctions include the risk of underbidding to win the contracts and the risk of driving smaller entry level players out of the market. Therefore, auctions are commonly implemented alongside other initiatives, such as RECs as described above, or simply backed by government guarantees (as is the case in Argentina and Zambia).

Feed-in tariffs and feed-in premiums

Administratively set feed-in-pricing policies (FITs and FIPs) have been crucial in encouraging renewable projects worldwide, providing stable income to generators, in turn increasing the bankability of energy projects, such that in 2017, according to IRENA, 80 countries have now adopted FITs and FIPs (up from 34 in 2005). Feed-in pricing policies have proved to be successful across the globe, no more so than in Japan, which, marking a change in its energy policy following the disastrous Fukushima earthquake, introduced its FIT scheme in 2012. Since then, Japan's solar Photovoltaics (PV) capacity has increased markedly, up to over 49GW at the time of writing.

Japan's regulatory reform

Japan's energy market and regulatory reform has not stopped there. The Organisation for Cross-regional Coordination of Transmission Operators (OOCTO) has been established to promote the development of electricity transmission and distribution networks and better maintain the supply and demand balance of electricity in both standard and emergency situations. This, in effect, marks the start of the legal unbundling of Japan's transmission sector, which currently is to be separated into three sectors:

- generation;
- transmission and distribution; and
- retail.

By 2020, the licence unbundling will force the 10 largest utility companies legally to separate their transmission and distribution divisions by prohibiting a single entity from operating both a transmission and distribution business, and a retail and generation business.

In parallel, Japan has undertaken a steady liberalisation of its retail electricity market, establishing the Electricity and Gas Market Surveillance Commission (EGC) to monitor and make proposals to the government regarding network tariffs and retail electric power suppliers. Full liberalisation occurred in 2016 and has since created a competitive consumer market, which in turn has led to modernisation and disruption of traditional business models – discussed further below.

Empowered consumers

Innovative technologies are driving change by providing consumers with more service options and therefore disrupting the current offering provided by major and more traditional players in the market. Not limited to Japan alone, this is happening across all industries, and can be evidenced best in the UK electricity market by two recent initiatives from the UK regulator, The Office of Gas and Electricity Markets (Ofgem):

- The 'Regulatory Sandbox', implemented by Ofgem's Innovation Link, in which applications for the first trial opened in February 2017 and the second in October 2017, with the intention to trial innovative business products, services and business models that cannot currently operate under the existing energy regulations. This provides Ofgem with the opportunity to engage with new business models and the regulatory barriers they are experiencing with a view to identifying potential solutions. Ofgem's Innovation Link approved several projects in the first Sandbox, including:
  - two separate projects, both trialling peer-to-peer local energy trading platforms (allowing residents in urban areas to source their energy from local renewables and trade that energy with their neighbours), the first by a consortium led by EDF Energy Research and Development UK and including Electron, PassivSystems, Repowering London and University College London; and the second, by a new company, Empowered; and
  - a new product designed to enable lower bills and warmer homes for customers with storage heaters who are currently limited to certain economy tariff options, with the ability to provide grid balancing capabilities – created and run by Ovo Energy;
- The 'Switching Program', established in order to facilitate an easier consumer transition between energy service providers and stimulate increased consumer engagement in the market (indeed around the same time, Japan established its OOCTO (as mentioned earlier) to, among other things, offer a switching support service).

These Ofgem initiatives are framed towards the distribution and retail markets in order directly to empower consumers. However, similar innovative technologies and business models have been implemented at the generation and transmission level – creating a more dynamic market, as discussed in the next section.

Dynamic markets

Known as the 'three Ds', the world's electricity systems are starting to 'decentralise, decarbonise, and democratise', each driven by the need to reduce electricity costs, replace aging infrastructure, improve resilience and reliability, reduce carbon emissions and provide reliable electricity to areas lacking electrical infrastructure (Hirsh, et al, 2018). Distributed Energy Systems (DES) is a term that encompasses a diverse array of generation, storage and energy monitoring and control solutions, offering building owners and energy consumers significant opportunities to reduce cost, improve reliability and secure additional revenue through on-site generation and dynamic load management (Arup and Siemens, 2016).

Two recent prevailing DES technologies reshaping the energy market in this way as are:

- energy storage; and
- microgrids.

As the latter is significant to the provision of sustainable infrastructure, this is addressed in more detail below.

Energy storage

To ensure all electricity grids maintain a stable and safe electricity supply, consumption has to be perfectly balanced with the generation of electricity. The development of energy storage can help address fluctuations in demand and generation by allowing excess electricity to be 'saved' for periods of higher electricity demand. In turn, energy storage technologies can contribute to better use of renewable energy in the electricity system, as renewable energy produced can be stored when conditions are optimal (but demand may be low). Similarly, the right of consumers to produce and consume their own electricity may lead to an increase in demand for storage services and small-scale storage solutions

However, the European Commission has noted several factors slowing the development of energy storage technologies, such as administrative and regulatory barriers, limited access to grids, and excessive fees and charges. In February 2017, the European Commission published a Staff Working Document titled 'Energy Storage – the role of electricity' which, among other things, discusses the current issues and possible policy approaches. For example, treatment of electricity storage is not consistent between EU member states and so in several countries storage facilities pay grid fees both as consumer and producer, despite being unable to provide a positive net flow of electricity, which is used to justify double network usage charges (Gissey, Dodds and Radcliffe, 2018). The UK regulatory system currently suffers from this approach, such that electricity storage falls into the classification of generation under UK legislation and therefore requires a generation licence, and risks liability of being double-charged. Ofgem has acknowledged the unsatisfactory and obstructing nature of this designation and has recently prepared a report proposing clarifications to current regulation, in particular amending the existing electricity generation licence as follows:

- including new definitions of electricity storage in the generation licence:

  Electricity Storage in the electricity system is the conversion of electrical energy into a form of energy which can be stored, the storing of that energy, and the subsequent reconversion of that energy back into electrical energy.

  and

  Electricity Storage Facility in the electricity system means a facility where Electricity Storage occurs.

- introducing new licence conditions for electricity storage providers, such that licensees should ensure that they do not have self-consumption as the primary function when operating its storage facility;

- clarifying expectations and standards of compliance for storage and expecting storage providers to sign up to relevant industry codes; and
- noting that storage providers will not be subject to payment of final consumption levies.

It is understood that Ofgem has proposed that these amendments would be implemented in the latter half of 2018; however, at the time of writing there has been no announcement of such a change. Nonetheless, as recently as July 2018 the largest battery storage project in the United Kingdom has been unveiled (49.9MW).

There has been further excitement regarding DES technologies in the United Kingdom this year, as in March 2018 Abu Dhabi energy company Masdar and Norwegian multinational Equinor (formerly Statoil) unveiled the world's first energy storage battery annexed to a floating windfarm in Scotland. Deployed at an onshore substation, the battery system known as Batwind has a storage capacity of 1.2MW and is aimed to mitigate peaks and troughs in electricity production. This combination of battery storage and microgrid technology is a prime example of innovative technologies creating a dynamic market; however, these technologies are equally significant in providing sustainable infrastructure.

Disruptive sustainable infrastructure technologies

Microgrids

Taking the United States as an example, the majority of its current electrical grid is outdated and in constant need of repair, such that a combination of maintenance and power outages costs the US economy (and treasury) billions of dollars in losses (Arshavsky, 2017). This is illustrated by the fact that the United States averages 360 minutes of outages each year, compared to 15 minutes in Germany and 11 in Japan (G Bakke, 2016). Coupling this with recent disastrous natural disasters in the United States, such as the three successive hurricanes in the Gulf of Mexico and southern United States in 2017, the usefulness and sustainability of microgrids is becoming increasingly apparent (Metelitsa, 2017). Many point to the following definition from the United States Department of Energy as a commonly understood and easily digestible description of microgrids:

> *[A] group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid. A micro-grid can connect and disconnect from the grid to enable it to operate in both a grid-connected or island mode.*

Navigant Research, which has tracked the development of microgrids across the globe, suggests the United States and Asia have similar capacity for operating, developing and proposed microgrids – each with 42 per cent of the market, with Europe on 11 per cent, Latin America on 4 per cent, and the Middle East and Africa currently sharing only 1 per cent (Hirch et al, 2018). Africa has been relatively slow to adopt the technology, however, Nigeria's Rural Electrification Agency announced plans to develop 10,000 microgrids by 2020 to meet its universal electrification ambitions, to be secured by a US$350 million loan from the World Bank (ClimateScope, 2017). Leading market players in microgrid technologies, such as Siemens are paving the way in implementing innovative microgrid solutions. The WFER summit identified the following projects as recent leading examples in this sector:

- provision of stable energy supply for an off-grid island, Ventotene, in Italy;
- installation of a low-carbon based microgrid in Blue Lake, Rancheria, California, with the capacity to island and supply uninterrupted electric power for seven days during an outage; enough to power a Red Cross shelter during an emergency;
- operation of a self-sufficient island grid in Wildpoldsried, Germany, disconnected from the main grid, while using a hybrid structure of wind turbines and PV systems and battery storage systems; and
- developing a state-of-the-art dynamic combustion chamber with an energy back-up and integrated data network for the Minera Buenavista del Cobre, Mexico.

However, in a similar way to the regulatory treatment of battery storage, Hirch et al (2018) argue that a clear legal identity for microgrids is needed to achieve the regulatory certainty required to make microgrid projects 'bankable'– otherwise the potential costs are too high and benefits too uncertain to justify investing time and money. Pointing to the United States as its example, Hirch et al (2018) warn that state utility regulatory agencies may treat microgrid services as utilities, such that they can regulate the rates charged for utilities and decide whether to approve facility construction. On the other hand, should microgrids qualify as a distribution utility, it may inadvertently take on an obligation to service retail customers at request. Both of these designations pose significant implications for microgrid developers, owners and investors.

Elsewhere in the world, some countries are adopting more flexible approaches to their regulatory framework. For example, Tanzania has completely deregulated small-scale energy projects below 100kW, and mini-grids with a capacity of less than 1MW do not need to apply for a generation licence, thereby promoting innovative technologies and lowering administrative costs (REN21, 2017).

Security of supply

Returning to the United States and its grid sustainability, the North American Electric Corporation (NERC) and its parent regulator, the Federal Energy Regulatory Commission (FERC), have identified several areas subject to regulatory improvement (Deloitte Center for Regulatory Strategy, 2017) including:

- initiating FERC audits of compliance by entities subject to NERC critical infrastructure protection (such as cybersecurity) regulations;
- adopting supply chain standards and implementation plans to ensure that, prior to integrating with the utility environment, energy companies adequately secure their supply chain to risks associated with activities involving third parties; and
- working with the Institute of Electrical and Electronics Engineers, Power and Energy Society to undertake a reliability assessment of renewables.

In particular, the report produced by the Deloitte Center for Regulatory Strategy (2017) points to a prevailing focus on cybersecurity regulations with respect to data protection, cloud services and third-party supply chain compliance. Indeed cybersecurity standards pose a particular problem for the United States owing to its state and federal framework (the former retaining much more authority and jurisdiction than the latter). In the context of developing the Smart Grid in the United States, the current state and federal balance risks disruption as there is increased support for expansion of federal-set cybersecurity standards to protect against potential vulnerability caused by variable locally set standards (Anderson, 2018).

With all the hype in Europe regarding the implementation of the General Data Protection Regulation (GDPR) (and the Network and Information Systems (NIS)) this year, it is clear data protection and cybersecurity standards are live issues across the pond. However, the GDPR and NIS are viewed by many as simply baselines for data protection and cybersecurity. Illustrating that this is only the start of regulatory developments in the sector, the Energy Expert Cyber Security Platform (EECSP) was given a mandate by the EU Commission to scrutinise existing regulation and address any issues in need of strengthening. The EECSP report (2017) identified 39 gaps in existing legislation and identified several areas for regulatory improvement:

- develop a formalised and effective threat and risk management system in all subsectors of the energy industry;
- establish an effective cyber response framework that facilities a fast and coherent response in case of an emergency linked to cybersecurity;
- continuously improve cyber resilience in the energy sector by establishing a European cybersecurity maturity framework specific to the energy sector; and
- build up adequate capacity and competences in cybersecurity in the energy sector to address a lack of specialised resources and skills (technical and human) in the cybersecurity space.

Conclusion

Clearly, the significant changes arising from the decarbonisation of energy, the new empowerment of consumers, the ever-increasing dynamism of energy markets and the deployment of disruptive sustainable

infrastructure technologies are all challenging the regulatory status quo and regulators will need to continue to respond to address the practical impacts of the fast-evolving global energy markets.

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Angola

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Government energy policy is set out under the Policy and Strategy for the National Energetic Security, approved by Presidential Decree No. 256/11 of 29 September. This instrument defines the focus of government policies as:

- restructuring state-owned companies;
- developing a strategic and regulatory framework for renewable energies;
- reinforcing powers of the electricity regulatory authority, IRSEA;
- revising the legal framework for the electricity sector;
- defining an attractive model for private investment and development of its legal framework; and
- progressively eliminating electricity price subsidies.

The main body of legislation governing the electricity sector is Law No. 14-A/96 of 31 May, as amended (the Electricity Act), which establishes the general framework of the legal regime concerning the undertaking of generation, transmission, distribution and use of electrical energy. These activities are governed, in accordance with the provisions of the aforementioned statute, by the following principles:

- permanent supply of energy in adequate terms relative to consumers' needs and national development;
- progressive reduction of costs through rationalisation and efficiency in the resources used down the value chain, from generation to consumption;
- environmental protection in the conception and management of projects and in the undertaking of activities that make up the electricity sector's value chain;
- safety of persons and assets and respect for property rights in the engineering and implementation of projects in the electricity sector;
- compliance with safety rules regarding persons and assets and respect for property rights in the engineering and implementation of projects as well as in the use of equipment; and
- permanent search for more efficient output levels with the aim of reducing waste of natural resources and production and accumulation of waste products.

This statute also enshrines the principles of equal treatment and opportunity in the exercise of the activities of generation, transmission and distribution of electricity, and the qualification of the transmission and distribution of electricity as a public service.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Angolan electricity market is a regulated market whereby the exercise of the various activities of the value chain tied to the Public Electricity System (PES) (generation, distribution, transmission, supply) is subject to concessions and licences, as applicable, granted by the state.

In general, the Angolan electricity system is divided into two separate segments:

- the PES, which encompasses the Electricity National Transmission Network (NTN) and all generation and distribution infrastructures tied to the NTN; and
- the Non-Tied Electricity System (NTES), which encompasses non-tied producers, self-producers and non-tied customers (collectively, non-tied agents).

The producers tied to the PES are public service concessionaires or licence holders who have the obligation to sell electricity to the NTN concessionaire. Under its capacity as a 'single buyer', the NTN concessionaire is required to acquire all power generated by tied producers. To do so, tied producers and the NTN concessionaire must enter into power purchase agreements (PPAs), which set out the terms and conditions of their commercial relations.

Subsequently, the NTN concessionaire (in which the Angolan state must have a majority equity participation or a veto right) must sell the electricity acquired under the PPAs to the high-voltage (HV) distribution network operators, at a single price, including those who operate in isolated systems.

In turn, HV distributors sell electricity to medium-voltage (MV) distributors who then sell electricity to low-voltage (LV) distributors, who in turn sell the electric power to the customers, therefore acting as suppliers.

Without prejudice to the necessities of the PES, the non-tied agents are committed to the role of strengthening the competitive regime on the supply and consumer markets of the Angolan electric system. Hence, non-tied producers and customers are entitled to establish bilateral agreements, freely negotiated between the parties, governing the terms and conditions of the supply of electricity. Nonetheless, the terms and conditions of such agreements must comply with the Regulation for the Licensing and Security of Electric Facilities and the Networks Access Regulation, as well as the rules and procedures put into force by the IRSEA. With the reform of the General Electricity Law, non-tied producers who wish to sell their electricity to the PES are no longer required to enter into generation concession agreements or request the award of a power generation licence.

The commercial relationships established under the regime of the PES are therefore regulated, with contractual terms and sale prices administratively set, as opposed to relations with non-tied agents, whose contractual terms and prices can be freely established by the parties. Migration of tied customers to the NTES is allowed.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The authorisation to develop generation (without prejudice to the exemption applicable to non-tied producers) activities is granted through concession agreements, entered into with the Angolan government, or through licences granted by the local authority, depending on the circumstances.

On the other hand, construction of electric facilities is subject to the licensing procedures prescribed in Decree No. 41/04 of 2 July, the Regulation for the Licensing and Security of Electric Facilities.

Under this Regulation, any entity interested in developing new electric facilities is required to obtain an establishment licence (which grants the authorisation for the construction of the facility) and, subsequently, an exploration licence, which grants the necessary authorisation to start operating the facility.

The request for these licences is made to the licensing entity (the entity within the energy sector Ministry that is competent to conduct the licensing process), with full details of the project and all other elements necessary to understand the project as a whole.

The licensing entity may impose any modifications it deems essential to ensure the safety of the population and assets as well as compliance with the applicable security regulations. In certain situations, the project may be subject to various consultation procedures, namely with affected populations or official departments in charge of activities that are affected by the project in question.

After all the foregoing formalities are successfully concluded, an establishment licence is granted after the payment of the fee, allowing the commencement of construction. Usually, the project developer is obliged to finish the construction works within two years of the establishment licence being granted, although this may be extended depending on the circumstances.

Following the completion of the construction works, the project developer should request an inspection to ensure compliance of the facility with all applicable rules. If it complies, the exploration licence is granted (no later than 15 days after the inspection) and the facility may enter into operation.

In certain cases – mostly construction of small facilities that do not interfere with public domain terrains or assets – there may be an exemption from obtaining the establishment licence, or both the establishment and exploration licences.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Network access of generators is made under the terms of the Network Access Regulation, approved by Presidential Decree 19/11 of 17 January.

Access to networks must be done in a non-discriminatory fashion by the Rede Nacional de Transporte de Electricidade, EP (RNT) concessionaire (see question 9) and tied distributors in high voltage and low voltage, as long as they have, as applicable, transmission or distribution capacity in the respective network and such access does not affect the standards of quality of service and security of supply.

Technical and commercial terms and conditions to use PES networks and interconnections vary in accordance with the type of user and network and must be agreed upon by the relevant agents.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Presidential Decree No. 88/13 of 14 June established the Strategic Plan for New Environmental Technologies, which is divided into two perspectives, a transversal and a sectorial perspective. The governmental body in charge of implementing this project is the General Directorate for Environmental Technologies.

The transversal perspective aims essentially to promote, disseminate, foster and raise public awareness towards the use of environmental technologies in Angola, mainly by:

- developing information campaigns using the existent social media;
- implementing information campaigns in schools and local communities;
- creating a platform to share information between entities related to the environmental technologies industries; and
- promoting the country's adherence to an international sustainability index.

The sectorial perspective focuses on promoting and implementing tailored measures and actions by economic sector, including specific programmes for the following sectors:

- real estate and construction;
- agriculture and forestry;
- industry;
- energy and water;
- oil; and
- transportation.

Recently the government has also announced the 'Atlas for the New and Renewable Energies' whereby it has committed, until 2025, to install 800MW of renewable energy generation facilities, and further, to a target of 7.5 per cent of electricity generated to come from renewable energies.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Angola is a party to the United Nations Framework Convention on Climate Change, although currently assuming no binding targets for emissions reduction.

The main instrument of government policy addressing climate change and the non-binding commitments assumed is Presidential Decree No. 88/13 of 14 June (see question 5).

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There is no specific governmental policy or legislation concerning energy storage.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Angola does not have any nuclear power generation facilities in its territory and there is no specific governmental policy concerning the promotion of nuclear power.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Transmission activities and more generally the operation of the NTN is granted through a concession system. Currently, the transmission system operator (TSO) is RNT, a state-owned enterprise.

Planning and construction of transmission networks is subject to a rolling six-year network investment plan prepared every two years by the TSO. The plan is subject to the approval of IRSEA.

The investment plan shall contemplate:

- demand forecast and scenario for the development of generation facilities considered in the expansion plans for electricity generation; and
- requests for connection of non-tied generators, self-generators, private supply generators, clients in very HV and tied distributors in HV and MV.

For each project, the transmission network investment plan must present:

- list of works to be executed;
- budgeted amount; and
- partitioning of costs, for projects involving other entities.

To construct the national transmission network the TSO, as concessionaire, has powers under the Electricity Act to create rights of way and expropriate immovable assets and associated rights thereof.

Finally, licensing of transmission facilities follows the rules set out under the Regulation for the Licensing and Security of Electric Facilities outlined in question 3.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The Network Access Regulation grants the right of access to the networks of the PES (RNT and tied distribution networks) to the following entities:

- holders of a tied concession or licence for the generation of electricity;
- holders of a non-tied concession or licence for the generation of electricity;
- tied clients;
- non-tied clients; and
- 'self-suppliers' or private suppliers.

Requirements needed to obtain access to the network are established under a network access agreement (the draft of which is approved by IRSEA) which sets out technical and commercial conditions governing such access as well as the information to be provided by the network user.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Increasing the expansion of the Angolan transmission networks and ensuring (intra-national) interconnection between the various networks has been a priority of government energy policy. The length of the network and number of substations are expected to almost double between 2017 and 2025 in accordance with the Angolan Strategy for Energy (Angola Energia 2025).

The high volume of investment needed and the technical difficulties to be surmounted will, however, pose challenges to achieving this target.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The tariff system of the electricity sector in Angola has, since 2011, with the approval of the Tariff Regulation, general rules and criteria for the setting of tariffs and electricity prices to be practised and complied with by the entities that undertake activities of generation, transmission, distribution and use of electricity (regardless of whether or not they are connected to the PES) as well as for the setting out of costs to be transferred to the tariffs and the fixing of the allowed revenues to be attributed to the entities that undertake activities of transmission and distribution.

Setting of tariffs in the electricity sector is oriented by principles of:

- sustainability of the sector;
- general electrification of the country;
- support for economic efficiency;
- existence of a maximum tariff;
- existence of minimum cost tariffs that are compatible with the quality of service;
- economic and financial equilibria of companies that operate efficiently;
- transparency in the attribution of subsidies to consumers;
- support for energy efficiency;
- existence of a single tariff for the entire country; and
- transparency in the setting of tariffs.

The tariff structure is established by the competent body of the government, under the proposal of IRSEA and is applied by the RNT concessionaire and by the distribution companies to the users connected to their grids. The actual value of the tariffs is calculated from the formulae established in the Tariff Regulation.

Pursuant to the provisions of this regulation, the costs that may be transferred to the tariffs are based on the costs of the TSO, accrued of a reasonable rate of return, calculated in accordance with widely accepted valuation methodologies.

In relation to the calculation of the revenues of the transmission network concessionaire, these include:

- efficient investment costs;
- efficient operation and maintenance costs;
- other costs necessary to develop the activity in an efficient fashion; and
- a fair profitability over their efficient investments.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The TSO is the entity responsible for the reliability of the transmission grid.

It has the powers and responsibilities outlined in the Dispatch Regulation, approved by Presidential Decree No. 3/11 of 5 January, including:

- coordinate the functioning of the NTN;
- monitor output of generation facilities subject to centralised dispatch in accordance with a daily production schedule and merit order;
- coordinate unavailability of the NTN and generators subject to dispatch;
- receive information on the physical quantification of the existing bilateral agreements;
- manage system services necessary for the equilibrium of generation and consumption and the safe operation of the electric system; and
- identify needs of service systems.

For these purposes, the TSO prepares a 'system operation handbook', which is approved by IRSEA and further must be made available to all entities to which the handbook applies (and which are bound by its provisions).

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Distribution activities and more generally the operation of high-voltage and medium-voltage distribution networks are granted through a concession. Empresa Nacional de Distribuição de Electricidade, EP, a state-owned enterprise, is currently the distribution system operator.

Layout of distribution networks is a result of three-year rolling plans prepared annually by the distribution system operator (DSO) which indicate: a summary of the network expansion plans, with schedules and budget for the main works, notably substations and HV lines; and the main characteristics of the HV and MV distribution networks, notably:

- location of substations with indication of apparent installed capacity;
- bottlenecks and capacity restrictions in HV;
- maximum and minimum capacity for symmetrical three-phase short circuit, on the HV and MV bus and substations;
- type of connection of system neutral to the earth; and
- quality of service indicators (pursuant to the Quality of Service Regulator set out in the Quality of Service Regulation).

The plan is subject to approval from IRSEA.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

As in the transmission network, requirements needed to obtain access to the distribution network are established under a network access agreement (which draft is approved by IRSEA), which establishes technical and commercial conditions governing such access as well as the information to be provided by the network user.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Government policy regarding the distribution network is focused mainly on ensuring that isolated rural areas (and thus not connected to RNT) have access to electricity.

In this sense, the 'Angola Energia 2025' strategy envisages to have around 200 rural electrification projects, comprising both closed distribution concessions and isolated systems where a concession shall be granted for the entire value of the chain (distribution and generation of electricity).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In accordance with the Tariff Regulation, as in the transmission network, the costs that may be transferred to the tariffs are based on the costs of the entities that explore the distribution networks ('allowed revenues'), accrued of a reasonable rate of return, calculated in accordance with widely accepted valuation methodologies.

With regard to the allowed revenues on distribution costs, the calculation of said costs is made taking into account two components: the remuneration of the activity of distribution through high, medium and low voltage (named distribution standard aggregated value or VADP); and the remuneration of operation and investment costs of the connections to consumers' facilities (also known as the connection fee).

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale of electricity under the PES is done by the DSO (or other smaller distribution concessionaires that are tied to the PES) pursuant to the competences legally attributed to it.

Otherwise, supply of power to non-tied customers is subject to a licence granted by the government.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The price of electricity to the end consumer (both domestic and industrial) under the PES is regulated pursuant to the Tariff Regulation.

Power sales tariffs correspond, in general, to the aggregate of the allowed revenues of the TSO, the allowed revenues of the distribution operators and the costs of acquisition of power by the TSO, acting in its capacity as 'offtaker' of electricity under the PES, to the generators. Power sales tariffs are corrected by:

- a compensation fund, managed by the offtaker (TSO), which has the purpose of ensuring uniformity of sales tariffs across the country (and respective distribution networks);
- promotional tariffs for certain categories of clients;
- extraordinary adjustments proposed by the TSO following changes in costs arising out of taxation; and
- costs with the functioning of IRSEA, which accrue to the tariffs.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

There are no organised markets for the wholesale of electricity. The TSO, acting as offtaker, purchases electricity from generators under PPAs entered into with the latter.

For the electricity acquired under the above-mentioned PPAs to become eligible as a cost reflected in the tariff system, such agreements must comply with the terms of the Tariff Regulation and further be the result of public procurement procedures or be agreements that pre-exist the entry into force of the regulation.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Suppliers of power in Angola (ie, the DSO and other distribution concessionaires) are subject to public service obligations, and thus may not impede access to the network or discriminate between end users.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The authorities that determine regulatory policy with respect to the electricity sector are government (central and municipal) and IRSEA.

23 Scope of authority

What is the scope of each regulator's authority?

Pursuant to the provisions of the Electricity Act, the government is the entity responsible for defining energy policy. Such policy must promote the electrification of the country, competition in generation, distribution and supply markets and incentives to use electrical energy efficiently, and shall also work towards implementing infrastructures and setting adequate tariffs.

IRSEA is the authority responsible for regulating the electricity sector, notably the activities of generation, transmission, distribution and sale of electricity in the PES.

IRSEA is, inter alia, in charge of regulating the business relationship between agents included in the PES and between the PES and non-tied agents, and the electricity industry, as well as the performance of duties related to mediation of conflicts of interest between the various intervenient parties in the industry.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

IRSEA benefits from a considerable degree of financial autonomy, as its costs are supported by the TSO and the generators tied to the PES. IRSEA also draws revenues from other sources, such as fines imposed pursuant to the misdemeanours it must prosecute.

Nevertheless, this entity is superintended by the holder of the executive power (ie, the President of the Republic), and its budget and annual accounts must be subject to prior approval by the government.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions adopted by government or IRSEA may be challenged on the grounds that the same do not conform with legal or regulatory provisions or with general principles of public conduct, or are criminal or misdemeanours, depending on the decision adopted.

Decisions of the government and IRSEA may generally be challenged either internally (via claims to the same administrative body

or via a 'hierarchic appeal') or before the administrative section of the civil courts.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Pursuant to the provisions of Law No. 5/18 of 10 May (the Competition Act), the Competition Regulatory Authority is the authority that has the powers to oppose or sanction mergers and other changes of control in commercial undertakings, including those acting in the electricity sector.

It is worth mentioning, also, that there are restrictions in transferring control in utilities: the Electricity Act prohibits the transfer of concession rights in the electricity value chain without the prior consent of the granting entity (ie, the government).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Merger control review shall be triggered by:

- a merger between two or more hitherto independent undertakings; and
- the acquisition of control, by one or more undertakings or persons, over other undertakings or parts of other undertakings.

Transactions resulting in any of the aforementioned events and that meet certain market share and turnover thresholds (yet to be regulated by an act of the President of the Republic) are subject to mandatory notification and cannot be implemented before a non-opposition decision is issued by the Competition Regulatory Authority.

A decision by the Competition Regulatory Authority for merger control review must generally be taken within (counting from the date of filing of the corresponding request) 120 days and may take longer if an 'in-depth investigation' is required.

In the investigation, the Competition Regulatory Authority shall assess whether the transaction will cause a 'material hindrance to effective competition' resulting from a dominant position. If it does, the Authority shall issue a decision prohibiting the completion of the deal (without prejudice of the intervening parties negotiating remedies in order for the transaction to be cleared).

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The Competition Regulatory Authority is the entity that is, in general, primarily responsible for preventing and prosecuting anticompetitive and manipulative practices.

IRSEA, in turn, is in charge of:

- fostering and ensuring compliance with competition provisions in the electricity sector; and
- preventing any anticompetitive practices in the electricity sector .

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Conduct by electricity companies is generally deemed to be anti-competitive if it breaches the provisions of article 7 et seq. of the Competition Act. In general terms, such provisions make the following unlawful:

- agreements (vertical or horizontal) between undertakings, and concerted practices or decisions by associations of undertakings, which have the effect of impeding, distorting or restricting competition (entirely or partially) in a material manner; and
- the abuse of market power (dominant position), in particular exclusionary abuse aimed at harming the dominant operator's competitors and preventing them from competing effectively in the market.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The following powers (among others) are exercised by the Competition Regulatory Authority and may be relevant to the effect of precluding or remedying anticompetitive practices or, more generally, in deterring anticompetitive practices:

- unannounced on-site inspections to target companies' premises (ie, dawn raids);
- mandatory requests for information and documentation;
- sealing premises where there may be accounting or other documentation relevant for the procedures being undertaken (during the period strictly necessary for collating proof); and
- request of any other services of the Administration, including law enforcement agencies, the cooperation that is necessary for the Competition Regulatory Authority to undertake its functions.

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International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements regarding foreign companies acquiring interests in the electricity sector. However, acquisitions of Angolan companies by foreign entities (notably using foreign capital) should take into account the relevant provisions governing foreign investment and capital controls legislation.

In particular, the Angolan Act on Private Investment (Law No. 14/15, of 11 August) determines that foreign investment in electricity assets requires that Angolan nationals (individuals or companies) hold, at least, 35 per cent of the capital and voting rights of the entity that will realise such investment.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Angolan energy policy (ie, Angola Energia 2025) sets out that interconnection of Angola to the SADC regional network is relevant owing to the country's reliance on hydroelectric power (necessarily volatile), allowing it to either export or import energy generated depending on the energy needs of Angola arising from time to time.

Alas, despite the above and the law establishing clearly that interconnectors are part of RNT (and thus managed by the TSO), no specific regulation exists concerning the construction and operation of interconnectors.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

See question 33.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Concerning exclusively electricity regulation provisions, no express restrictions exist on transactions entered into between electricity utilities and their affiliates.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

See question 34.

Argentina

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Argentina is a federal country where the electricity market is subject both to federal and to local jurisdictions. The federal legal framework is based on Law No. 15,336 and basically applies to the federal interconnected system, leaving local generation and distribution facilities to provincial jurisdiction.

Federal energy policies are coordinated with the provinces through the Electricity Federal Council established in 1961 by Executive Decree 2073. Its role is to administer specific funds and to act as an adviser for the national executive branch and for the provincial governments with respect to the electricity industry. The Council consists of representatives of the national executive branch and of the 24 provinces of Argentina.

In 1991, the federal government carried out an overall privatisation and deregulation programme of several industries held by the federal government.

In 1992, the federal Congress enacted Electricity Law No. 24,065, which established the rules and procedures for the restructuring and privatisation of the electricity sector. This federal legislative framework, still effective today, divides generation, transportation and distribution of electricity into separate business units, each with particular regulations.

In 2001, Argentina experienced an economic crisis that seriously affected the electricity sector and that was followed by 12 years of government subsidies and regulatory interference, causing Argentine electricity generators, transporters and distributors to defer investments, and creating a vast structural deficit in the electricity market.

In 2015, Macri's administration took office and aimed its policy at eliminating subsidies and regulatory interference in the electricity industry, switching to a more cost-realistic and market-oriented policy.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The organisational structure of the electricity market is based on the following,

Generators
There are approximately 120 generation companies in Argentina, operating one or more generation facilities. Argentina's installed power capacity is covered as follows: 61 per cent from thermal generation; 33 per cent from hydraulic generation; 5 per cent from nuclear generation; and 1 per cent from unconventional energy.

Transporters
Each transporter holds an electricity transportation concession or licence, for transportation from power generation facilities to distributors, through high-voltage power transportation systems. Transporters cannot participate in the market through purchases or sales of power. Transportation is carried at 500kV, 220kV and 132kV through the national interconnected system, which covers approximately 90 per cent of the country's electricity demand.

Distributors
Each distributor holds an electricity distribution concession in a specified geographical area for the supply of electricity to consumers on an exclusive basis. Distribution concessions specify, among other terms and conditions, the type and quality of services, the rates and the concessionaires' obligation to provide a reliable service.

The National Electricity Regulator (ENRE) monitors compliance by the federal distribution companies (EDENOR and EDESUR), and provincial regulatory authorities monitor compliance of local distributors with their respective concessions and with local regulatory frameworks (EDELAP, Province of Buenos Aires; EPE, Province of Santa Fe; EPEC, Province of Córdoba, etc).

Large energy users
The electricity market classifies large energy users into three categories: major large users; minor large users; and special large users. Each category has different requirements with respect to purchases of their energy demand.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Regulatory permits and approvals to be obtained for the construction and operation of generation facilities depend on the type of power plant to be built. Thermal and renewable energy power plants do not require the granting of specific regulatory authorisations. Large-scale hydroelectric power plants and nuclear power plants require the granting of special concessions by the government, specifically in connection with the construction of the plants and the use of water. Additionally, federal and provincial environmental and safety regulation authorisations must be obtained for the construction of power plants.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Connection of generation to the transportation grid requires the prior authorisation of the transportation concessionaire and the existence of capacity in power lines. If the generator's requirement is not satisfied by the existing capacity of the transportation grid, transportation capacity shall be expanded with the prior approval of ENRE, the Administrative Company for the Wholesale Electricity Market (CAMMESA) and the relevant transmission company.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In 2015, the federal Congress enacted Renewable Energy Law No. 27,191, later regulated by Executive Decrees 531/16 and 882/16. The Law, which amended Law No. 26,190 on the same subject, established mandatory targets for renewable energies: as of 2018, renewable

sources must be no less than 8 per cent of overall electricity consumption, with a 20 per cent target for 2025.

As a consequence of Law No. 27,191, in 2016 the federal government launched 'RenovAr', a programme that contemplates a series of fiscal incentives and financial support mechanisms for renewable energy sources. Bidding processes called by the federal government during 2016 and 2017 proved successful and with a large number of awardees, many of them new foreign investors.

Law No. 26,190 invites provinces to adhere to the legislation and develop their own province-level incentives. Some provinces have enacted their own regulations regarding renewable energies (Buenos Aires, Law No. 12,603; Chubut, Law No. 4,389; Mendoza, Law No. 7,822; Misiones, Law No. 4,439; Neuquén, Law No. 2,596; and Santa Cruz, Law No. 2,796).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Argentina has ratified the United Nations Framework Convention on Climatic Change (Law No. 24,295) and the Kyoto Protocol (Law No. 25,438). Argentina is not included among the countries that committed to reduce or limit carbon dioxide emissions. As a developing country, Argentina may participate and promote clean development mechanisms (CDM) through the federal Ministry of Environment. There are no proactive governmental measures promoting CDM.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Electricity Regulatory Framework does not contain specific provisions promoting research and development of storage solutions. Private consumers tend to implement domestic energy storage as a result of solar and wind generation.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Law No. 24,804 regulates the nuclear industry. The federal government is responsible for establishing nuclear policy, regulating nuclear activity and carrying out relevant research and development.

Argentina has three nuclear power plants: Atucha I (launched in 1974: 335MW); Embalse (launched in 1984 and recently refurbished: 648MW); and Atucha II (launched in 2014: 745MW). Almost 5 per cent of Argentina's electricity needs are covered by nuclear sources.

The federal government encourages the development of new nuclear power plants, most recently through the announcement of the construction of a fourth nuclear power plant, Atucha III, close to Atuchas I and II, with a 745MW electrical power capacity.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

New transportation networks can be constructed and operated by what the regulations call independent transporters, upon request for a transportation service by a promoter who must be the beneficiary of at least a certain percentage (defined for each project) of the new transportation service. To that end, independent transporters must obtain a technical licence from the relevant transportation concessionaire. A promoter must be an agent or a group of agents of the wholesale electricity market.

The construction of such new transportation networks can be carried out through two different procedures: parties agreement or call for bids. The parties agreement procedure requires that the promoter of the project proposes a certain independent transporter to be responsible for the construction, operation and maintenance of the transportation network.

If the promoter does not have a prior agreement with a prospective independent transporter, a bidding process shall be conducted by the promoter with the purpose of electing an independent transporter. This process is controlled and supervised by ENRE.

Both procedures require:

- issuance of a Certificate of Public Need by ENRE;
- agreement of the transportation concessionaire of the relevant area;
- approval of the technical feasibility of the connection by CAMMESA and the relevant transportation concessionaire; and
- approval by the relevant provincial authority of the environmental impact assessment.

The former national administration granted 500kV of transportation concessions that were financed with national state funds, but such developments had a special regime outside of the electricity regulatory framework. The capital expense of such investment was rolled over the total national electricity demand.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The electricity regulatory framework does not establish particular requirements for eligibility to obtain a transportation licence. In the case of the call for bids awarding procedure, particular requirements can be established in the relevant bidding terms and conditions. In the case of the parties agreement procedure, independent transporters shall be evaluated as appropriate for eligibility by ENRE under its own regulatory and financial, not discretionary, standards.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The federal government has recently launched a Call for Bids to award expansions of the transmission networks through public-private partnership agreements. Private companies will repay their investments through a specific charge to be included in the tariff paid by the users of the transmission networks. The repayment period will be of 10 years.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

If the technical licence has been awarded as a result of a call for bids procedure, during the first 15 years of the licence term the independent transporter shall collect a monthly fee (canon) with the purpose of recovering the invested capital and the operation and maintenance costs. Such fee results from the best bid given during the bidding process. Once the 15-year initial period has been completed, the independent transporter collects a monthly rate calculated on the basis of the operation and maintenance costs and a profit. Such rate is determined by ENRE and revised every five years. Revision of tariffs considers the impact of costs and taxes of the service and the rate of return to the transporter. Approval of new rates requires a public hearing. The fee and rate is rolled over to the agents of the wholesale electricity market beneficiaries of the transportation.

If the technical licence has been awarded as a result of a parties agreement procedure, the recovery of the invested capital will depend on the terms agreed by such parties and exposed to their commercial risk with no guarantee of repayment. ENRE will determine a monthly rate applicable only as from the beginning of the licence term and calculated on the basis of the operation and maintenance costs and a profit. Such rate is revised by ENRE on a periodical basis. Only the rate is rolled over to the agents of the wholesale electricity market beneficiaries of the transportation.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Each transportation concessionaire is responsible for the reliability of its transportation grid, under the surveillance of ENRE acting as enforcement authority. Concessionaires' obligations and liabilities are established in each concession contract and framed under the Electricity Law. Concessionaires are also responsible for the supervision and control of the transportation lines of the independent transporters directly connected to their transportation network.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

A concession has to be granted to a distribution company in order to operate a distribution network. ENRE monitors compliance by the federal distribution companies (EDENOR and EDESUR) with tariffs and services, while provincial regulatory authorities monitor compliance by local distributors subject to provincial regulatory frameworks.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Distribution companies are generally subject to provincial regulations and there are no restrictions on access to the distribution grid other than the technical and financial capabilities required by provincial regulations.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The new distribution companies are usually the result of new urban, suburban or housing developments and mostly depend on private initiatives. There are no federal measures encouraging the expansion of the distribution network. Distributors are obliged to extend their relevant grid within their geographical concession area if such extension is required by consumer demand.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Rates and conditions of the distribution service are regulated by the relevant enforcement authorities (federal or local). Rates vary for different consumers (residential, commercial, industrial), and level of voltage required. The Electricity Law and applicable regulations establish that rates must be fair and reasonable, and should allow companies to obtain revenue to cover their costs of operation, taxes and depreciation. Additionally, rates must be revised every five years, after a process that shall include a proposed adjusted tariff based on costs and taxes and a regulated rate of return, and a public hearing for final approval.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The electricity regulatory framework approved in 1992 was based on the principle that sale and purchase of electricity in the wholesale electricity market could be freely negotiated between the agents of the industry.

In 2001, Argentina experienced an economic crisis and governmental intervention, causing the Argentine electricity generators and distributors to defer investments, and creating a vast structural deficit in the electricity supply. As a result of this, the federal government passed emergency regulations intervening in the market (eg, Resolution SE 1281/06), interfering with the free sale of electricity from generators to their customers, particularly through actions by CAMMESA, with the purpose of avoiding shortages to commercial and domestic demand.

Although the current administration is eliminating regulatory interference, nevertheless certain regulations may require the supply of electricity to certain priority customers on the basis of regulated or subsidised prices.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In 2005 the federal government determined a minimum required power level for each agent of the wholesale electricity market. As from that moment, sale and purchase prices of electricity in the wholesale electricity market for supplies above 300kW and exceeding certain minimum power levels established by regulation (as at 2005) could be freely negotiated between the generator and the customer.

The sale of energy to distributors below 300kW is made at a 'stabilised price' defined by ENRE or the relevant provincial authorities, as applicable, including certain highly subsidised prices as a 'social tariff'.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Wholesale power rates for sales to distributors below 300kW are defined by ENRE for the federal distributors and by the relevant provincial authorities at local level.

Sale and purchase prices for supplies above 300kW and exceeding certain minimum power levels established by regulation (as at 2005) are freely negotiated without any intervention of the regulatory authorities.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Electricity Law establishes that the distribution and transportation services shall be considered public services. Otherwise, electricity generation is considered an independent and free industrial activity, although subject to public interest. However, as mentioned above, certain emergency regulations still in place may result in mandatory supply at regulated prices to certain priority consumers.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Regulatory policy with respect to the electricity sector is established at a federal level. The main authorities are:

- the Secretariat of Electricity, which acts within the sphere of the Ministry of Energy and Mining;
- ENRE, a decentralised agency within the scope of the Ministry of Energy and Mining;
- CAMMESA, a private company owned by the federal government and by the electricity market agents (generators, distributors and transporters); and
- the Electricity Federal Council (CFEE), adviser to the federal and provincial governments on electricity matters.

23 Scope of authority

What is the scope of each regulator's authority?

The scope of each of the authorities mentioned in question 23 is the following.

Secretariat of Electricity

- Executes the national policy related to the electricity sector;
- approves the import and export of electricity;
- intervenes in the process to elaborate nuclear energy policy;

Update and trends

In 2017, 'Cambiemos', President Mauricio Macri's political party, won the mid-term legislative national elections thus obtaining a confirmation of the political and economic trend adopted by his administration,

Macri's administration publicly announced a plan to gradually switch to a non-regulated energy market as regards prices by 2022.

It is expected that, in spite of the difficulties that Mr. Macri's administration is facing with the financial markets, Argentina's large energy resources, technical and professional capabilities will be able to attract the attention of local and international investors through Argentina's well-developed legal tools.

- intervenes in procedures for the execution of international agreements related to the electricity sector; and
- assists the Ministry of Energy and Mining in all matters related to the electricity sector.

ENRE
- Supervises the execution of and compliance with the Electricity Law, its regulations and the concession agreements;
- issues regulations, technical procedures and resolutions related to the electricity sector;
- prevents anticompetitive, monopolistic and discriminatory conduct between agents of the electricity sector;
- establishes the basis for tariff calculations;
- establishes the basis for the granting of distribution and transportation concessions;
- intervenes in the extension, assignment or expiration of concessions;
- organises the public hearing processes established for tariff recalculation; and
- applies sanctions established in the Electricity Law and in the concession agreements.

CAMMESA
- Its main original function was to provide the dispatch of the electricity market with transparency and economy;
- its singular feature is that it is a non-profit corporation;
- owing to the economic and financial crisis in 2002 and the passing of the Economic Emergency Law No. 25,561, the federal government entrusted CAMMESA with commercial intervention in the natural gas and electricity markets through the domestic purchase of natural gas and the import of liquefied natural gas and the resale thereof to electricity generators, and the domestic purchase and import of electricity and its resale to distributors and large users at subsidised or discretionary prices; and
- the federal government has publicly stated its intention to gradually give CAMMESA back its original role.

Electricity Federal Council
- Acts as an adviser to the federal and provincial governments on matters related to the electricity sector;
- recommends amendments to the regulations applicable to the electricity sector; and
- coordinates the development plans of the electricity sector at federal and provincial level.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Secretariat of Electricity acts within the sphere of the National Ministry of Energy and Mining, and therefore of the national executive branch. The person holding the position of Secretary of Electricity is appointed by the president.

ENRE, as a decentralised agency, is independent as to functional and economic aspects from the national executive branch. That notwithstanding, it is run by a board of directors consisting of five members appointed by the executive branch.

CAMMESA is a private company created by Executive Decree 1192/92. CAMMESA's stock capital is held by the agents of the Wholesale Electricity Market, in equal shares: generators, transporters, distributors and large users hold 20 per cent each, and the remaining 20 per cent is held by the federal government.

The Electricity Federal Council was created in 1960 by Law No. 15,336 and regulated by Executive Decree 2073/61; its role is to administer specific funds only intended for the electricity sector and to act as an adviser to the national executive branch and to the provincial governments with respect to the electricity industry. The Council consists of representatives of the national executive branch and of the 24 provinces.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The administrative decisions of the regulator may be subject to administrative appeals. Generally, the appeal does not suspend the effects of the administrative decision, as this is presumed legitimate by virtue of law. The resolution of the appeal must always be subject to judicial review. The appeal may be filed before the same authority that issued the decision (motion for reconsideration), or before a higher administrative level (hierarchical motion). In the case of ENRE, an appeal can be filed before the Ministry of Energy and Mining, or an action for nullity before the Federal Court of Appeals, depending on the matter of the decision to be challenged.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Antitrust Law No. 27,442 establishes the prohibition against acts limiting, restricting or distorting competition or constituting an abuse of dominant position, and also provides rules for antitrust control of mergers, acquisitions and other consolidation processes. The enforcement authority is the Federal Antitrust Authority.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The Antitrust Law provides that to verify that an economic concentration does not infringe the prohibition under such Law, it must be notified to the Antitrust Authority when the aggregate 'business volume' of the companies involved in the given transaction exceeds approximately US$55 million. By 'business volume', the Law means domestic sales and exports from Argentina.

The Antitrust Authority must, within 45 business days of the filing of a complete notification form, decide to authorise the transaction, subject it to conditions or prohibit it. Once this term has expired without the Antitrust Authority having issued a resolution, the transaction will be deemed tacitly approved. The whole process generally takes, depending on the complexity of the transaction, between one and two years.

Foreign companies making their first acquisition in Argentina are exempted from making an antitrust filing.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

In addition to the Antitrust Authority, the Electricity Law entitles ENRE to prevent anticompetitive, monopolistic and discriminatory conduct between agents of the electricity sector, including producers and consumers.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The Antitrust Law prohibits economic concentrations, the purpose or effect of which is, or may be, to reduce, restrict or distort competition, thus damaging the general economic interest.

In addition, articles 30, 31, 32 and 33 of the Electricity Law establish rules that prohibit vertical integration of the agents of the industry.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

Both the Antitrust Authority and ENRE are entitled to impose sanctions on companies that perform anticompetitive or manipulative practices and to prevent transactions contrary to the provisions of the Antitrust Law and the Electricity Law.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements or limitations on the acquisition of electricity related interests by foreign companies or individuals. The Electricity Law establishes that transportation and distribution activities shall be entrusted to private companies. The state and state-owned companies can only carry out such activities in case no awardee results from a bidding process.

Activities in Argentina that can be deemed a permanent establishment require the creation of a local entity, be it a subsidiary or a branch.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Resolution 21/97 of the former Secretary of Energy establishes the procedure for the granting of electricity transportation concessions for international interconnection. The main permits and approvals to be obtained are:

- execution and approval by ENRE of the construction, operation and maintenance (COM) agreement (COM Agreement) of the interconnector's facilities;
- execution of the concession agreement; and
- granting of the electricity transportation concession for international interconnection by the Secretariat of Electricity through delegation of the executive branch.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

In addition to the regulatory approvals and permits established in question 32, customs authorisations shall be obtained and dispatching agencies of both bordering countries shall coordinate operating and technical issues related to the cross-border supply.

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Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Articles 30, 31, 32 and 33 of the Electricity Law establish the following limitations to the participation in other electricity related companies:

- transportation companies (including subsidiaries) are not allowed to sell or purchase electricity;
- generation and distribution companies (including parent companies and subsidiaries) and large customers are not allowed to own or have a participating interest in the capital stock of a transportation company or in a parent company of a transportation company; and
- two or more transportation companies, or distribution companies, may only belong to a single economic group with the prior authorisation of ENRE. The same authorisation is needed if a transportation or distribution company acquires a participating interest in the capital stock of another transportation or distribution company, respectively.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ENRE is responsible for enforcing the limitations established in articles 30, 31, 32 and 33 of the Electricity Law. The infringement of such provisions shall be sanctioned with fines, disqualification, suspensions or seizures.

Australia

Andrew Monotti, Simon Cooke and William Osborn

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Scope of the responses

These responses relate to the National Electricity Market (NEM) in Australia.

Although brief reference is made to the electricity markets in Western Australia and the Northern Territory in question 2, the NEM is the predominant electricity market in Australia. The NEM operates as an interconnected electricity network across the states of Queensland, New South Wales, Victoria, South Australia and Tasmania and the Australian Capital Territory

The NEM is one of the longest alternating current systems in the world, covering approximately 4,500 kilometres.

Policy and framework

The policy underlying the NEM is contained in the National Electricity Objective (NEO) as set out in section 7 of the National Electricity Law (NEL).

The NEO is as follows:

> *The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to: (a) price, quality, safety, reliability and security of supply of electricity; and (b) the reliability, safety and security of the national electricity system.*

The legislative framework for the NEM is contained in the following legislative scheme:

- National Electricity (South Australia) Act 1996 (SA);
- the NEL;
- the National Electricity Rules (Rules); and
- the legislation of the other participating jurisdictions that adopt each of the above, subject to certain derogations.

The Rules

The Rules have the force of law in each participating jurisdiction in the NEM.

The prescribed requirements and tests for the making of the Rules are set out in Part 7 of the NEL.

A person is entitled to submit a Rule change request to the Australian Energy Market Commission (AEMC).

Under the NEL, the AEMC may make a Rule only if it is satisfied that the Rule will, or is likely to, contribute to the achievement of the NEO.

Retail energy regulation in the NEM

The National Energy Customer Framework (NECF) regulates the retail supply and distribution of electricity to customers.

The NECF has been adopted for the retail supply of electricity in South Australia, New South Wales, Tasmania, the Australian Capital Territory and Queensland. In Victoria, the Essential Services Commission has harmonised the Victorian energy regulations to be substantially consistent with the NECF.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Organisational structure

The Australian Energy Operator (AER) is established under the Competition and Consumer Act 2010 (Cth) (CCA).

The functions and powers of the AER are regulatory in nature, including:

- monitoring compliance with the NEL and the Rules and instituting and conducting proceedings;
- making and monitoring compliance with network revenue or pricing determinations; and
- regulating retail electricity markets under the NECF.

The functions and powers of the AEMC include, primarily, the Rule making functions and powers as prescribed under the NEL.

The AEMC must establish a panel known as the 'Reliability Panel', which has responsibility for matters including the monitoring, reviewing and reporting on the safety, security and reliability of the national electricity system.

The statutory functions of the Australian Energy Market Operator (AEMO) involve, primarily:

- the operation and administration of the wholesale exchange in the NEM; and
- maintaining and improving power system security, planning for the development of the transmission grid and providing 'shared transmission services' by means of the transmission system of each participating jurisdiction.

Operation of the NEM

The NEM is an 'energy-only' wholesale electricity market. Generators recover operating and capital investment costs over time by means of the sale of electricity through spot and contract 'markets'. Generators do not receive any payments for capacity or availability.

AEMO runs a central dispatch process every five minutes that determines the electricity each generator must dispatch to meet demand. The highest priced offer required to meet demand represents the dispatch price. A separate spot price is set for each region of the NEM.

The volume and price of electricity in each five-minute dispatch period varies. Generators participate in the central dispatch process by submitting dispatch offers in up to 10 price bands.

Generators and customers in each region sell and buy electricity at the wholesale (spot) price for that region, determined as an average dispatch price over 30 minutes. All 'dispatched' generators receive the same price for electricity in that 30 minute period.

The principal customers are energy retailers, who bundle electricity with network services for sale to residential, commercial and industrial energy users.

Networks

The transmission and distribution networks in the NEM are structured as a series of natural monopolies (both government and privately owned) which are subject to economic regulation of price or revenue and at the transmission functional level, regulated rights of access.

Chapter 6 of the Rules (for distribution) and Chapter 6A of the Rules (for transmission) set out the regulatory framework for the AER to apply in the economic regulation of transmission and distribution network service providers.

Western Australia

Western Australia has two separate electricity networks, known as the South West Interconnected System (SWIS) and the North West Interconnected System (NWIS).

The SWIS is a 'capacity' market. Generators and demand side management service providers are paid for the capacity they can provide to the market when required. AEMO determines the capacity required each year and issues 'capacity credits' (being notional units of generational capacity) to market participants registered as generators under the SWIS Market Rules. Retailers and large load customers are required to purchase a quantity of capacity credits in accordance with their capacity allocation.

A capacity credit can be traded between market participants and is valid for a particular reserve capacity year (as defined in the Market Rules).

Northern Territory

The Northern Territory has an independent electricity network and supply industry that is primarily administered by the Utilities Commission of the Northern Territory. However, as part of a recent process, the AER has been given responsibility for network price regulation and oversight of network access. On 1 July 2016, the Northern Territory adopted the Rules (certain provisions of the Rules have not yet commenced and will commence from 1 July 2019).

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The authorisations required to construct and operate generation facilities include a combination of the following:

- environmental, planning and works approvals under state (and potentially federal) environment protection and state planning legislation;
- the grant of environment protection licences and approvals for the operation of the generation facility under state (and potentially federal) environment protection legislation;
- the grant of a generation licence by the relevant state regulator under state electricity legislation; and
- for the purposes of the NEM, as required pursuant to section 11 of the NEL, registration under the Rules (unless a prescribed exemption is applicable).

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The policies are summarised and discussed in questions 1 and 9.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Federal and state government policy and legislation has encouraged power generation based on renewable energies. For example:

- the federal government signed the Paris Agreement – this agreement was made within the framework of the United Nations Framework Convention on Climate Change. Australia has set an emissions reduction target of 26–28 per cent on 2005 levels by 2030;
- The Renewable Energy (Electricity) Act 2000 (Cth) – this Act introduced a national Renewable Energy Target (RET) scheme requiring electricity retailers to source a proportion of their electricity from renewable energy facilities. Compliance is achieved by the retailer obtaining renewable energy certificates. The object is for 20 per cent of Australia's electricity to be generated by renewable energy facilities by 2020;
- the federal government also implemented the Carbon Farming Initiative Amendment Act 2014 (Cth) to provide the framework for its Direct Action Policy (DAP). The central feature of the DAP is the establishment of the A$2.55 billion Emissions Reduction Fund (ERF) to be applied for investment in carbon abatement; and
- the Clean Energy Regulator will issue 'Australian carbon credit units' (ACCUs) for carbon emission reduction projects which are created and audited under approved methods. The Clean Energy Regulator may enter into contracts for the purchase of ACCUs following a 'carbon abatement purchasing process' to be conducted in accordance with the Carbon Credits (Carbon Farming Initiative) Rule 2015.

State legislation and 'renewable energy action plans' have been also introduced. For example:

- Victoria introduced the Victorian Energy Efficiency Target Act 2007. The Victorian Energy Efficiency Target Scheme has now been amended to set targets for each year from 2016 to 2020. The Victorian government recently introduced a renewable energy target of 25 per cent by 2020 and 40 per cent by 2025; and
- in September 2013 the New South Wales government released its 'Renewable Energy Action Plan'. The object of this plan is aligned with the object of the RET scheme.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth) (the Safeguard Mechanism) was introduced by amendments to the National Greenhouse and Energy Reporting Act 2007 (Cth) (the NGER Act) made by Schedule 2 of the Carbon Farming Initiative Amendment Act 2014 and commenced on 1 July 2016.

The Safeguard Mechanism applies to 'designated large facilities', being facilities that emit more than 100,000 tonnes of carbon dioxide equivalent (CO_2-e) per annum of direct (or 'scope 1') emissions, as defined in the NGER Act . The Safeguard Mechanism requires designated large facilities to establish an emissions 'baseline' (calculated in accordance with prescribed criteria in the NGER Act, based on the highest level of emissions by the facility over the historical period between the years 2009–2010 and 2013–2014).

Once a designated large facility baseline has been established, the Safeguard Mechanism imposes a requirement on the person with operational control of the designated large facility (as determined in accordance with NGER Act) to ensure emissions from the designated large facility are under that baseline.

However, the electricity sector has been given special treatment under the Safeguard Mechanism, so that a 'sectoral baseline' has been set for electricity generation facilities that are connected to any of Australia's major electricity networks. The sectoral baseline for the electricity sector is 198 million tonnes (or tCO_2-e).

As part of the annual National Greenhouse and Energy Reporting data, the Clean Energy Regulator will publish the total scope 1 emissions for all grid-connected generators . The most recent data published by the Clean Energy Regulator is the aggregate scope 1 emissions for the electricity sector for 2015–2016, which totalled approximately 180,874,878 tCO_2-e (Clean Energy Regulator: Electricity sector emissions and generation data 2015–16 (27 October 2017)).

Under the Safeguard Mechanism, the 'sectoral baseline' approach will apply unless the total of eligible direct emissions exceeds the baseline in any financial year. If the sectoral baseline is exceeded, baselines for individual facilities will apply in place of the sectoral baseline.

If a facility's emissions exceed (or are expected to exceed) its baseline in any financial year, the person with operational control of the facility has a number of options available to manage the excess emissions, including:

- applying for a calculated baseline or an emissions intensity baseline variation;

- surrendering ACCUs to offset emissions and bring net emissions below the baseline;
- applying for a multi-year monitoring period to allow additional time to reduce emissions; or
- applying for an exemption where emissions are the result of exceptional circumstances such as a natural disaster or criminal activity.

Under the NGER Act, the Safeguard Mechanism provides a range of enforcement options for the Clean Energy Regulator where a person with operational control of a designated large facility (a 'responsible emitter') fails to take one of the above actions. These options include entering into an enforceable undertaking, issuing an infringement notice, or court proceedings to seek an injunction or civil penalties.

National Energy Guarantee

On 13 October 2017, the Energy Security Board (ESB) provided advice to the Federal Minster for Energy regarding retailer reliability, emissions guarantee and affordability, following AEMO's report into dispatchable generation. The advice recommended the establishment of dual reliability and emissions guarantees, which would impose requirements on electricity retailers to meet their retail electricity load using a portfolio of resources that include a minimum amount of 'flexible dispatchable capacity', and at an emissions level that is consistent with Australia's international emissions reduction commitments.

Under the ESB's proposed model, each of the emissions and reliability guarantees would be imposed as conditions of registration by a retailer as a wholesale market customer in the NEM, under the Rules.

The reliability guarantee would require retailers to hold forward contracts with dispatchable resources that cover a predetermined percentage of their forecast peak load. The amount and type contracted would be based on the system-wide reliability standard as determined by the Reliability Panel at the AEMC.

The emissions guarantee would be established by the federal government setting an emissions target (consistent with Australia's international emissions reduction commitments) that would then be adapted to impose a requirement on retailers to meet their customer loads from a mix of electricity generation sources that equated to a predetermined average emissions level. Retailers would be required to disclose how they have met their guarantee through either their contracts with existing generators or with generators to develop new capacity.

In February 2018, the ESB released a consultation paper seeking feedback from market participants on a series of high-level options for the eventual design of the emissions and reliability guarantees (referred to collectively as the National Energy Guarantee (NEG)).

The paper confirmed that the ultimate design of the NEG will require energy retailers to contract with, or directly invest in, generation, storage or demand response so that:

- there is a minimum amount of dispatchable energy available to meet consumer and system needs (ie, reliability requirement); and
- the average emissions level of the electricity they sell to customers supports Australia's international emission reduction commitments, as set by the Commonwealth Government (ie, the emissions requirement).

The paper also confirmed the ESB's preference for implementation of the NEG through existing governance arrangements in the NEM.

Following periods of consultation, in August 2018 the Council of Australian Governments (COAG) released an exposure draft of the proposed changes to the NEL that would implement the NEG. The draft laws were prepared by the ESB based on the Final Detailed Design of the NEG.

However, at the time of publication, neither COAG nor the federal government have decided to proceed with the NEG.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The AEMC released a report in December 2015 that examined whether the existing regulatory frameworks are sufficiently flexible to integrate energy storage technologies. There were several issues with the regulatory framework that were identified as potentially acting as a barrier to the integration of storage in the NEM. However, it was also identified that batteries and storage technologies can be accommodated within the existing regulatory framework, although it has been acknowledged by the AEMC that improvements could be made to facilitate installation. For example, in many cases, a storage device can be treated as a generator having the same capacity and characteristics. Also, in relation to network regulation, storage can be classified as a contestable service.

On 28 November 2017, the AEMC made a final rule to change the settlement period for the electricity spot price from 30 minutes to five minutes.

The Rule, which will take effect from 2021, will mean all settlement periods are reduced to five minutes, producing a more granular and more accurate price signal for investment in fast-response technologies such as batteries (as well as new-generation gas peaking plants).

In order to ensure the rule change is effective, the operational dispatch and financial settlement periods will both be aligned to five minutes, which will reduce the time interval for financial settlement in the national electricity market from 30 minutes to five minutes.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

In its 2015 Energy White Paper, the Australian government has identified that there are legislative restrictions on the use of nuclear energy in Australia. In particular, it was stated that approval cannot be provided for the construction or operation of nuclear plants in Australia under either the Environment Protection and Biodiversity Conservation Act 1999 or the Australian Radiation Protection and Nuclear Safety Act 1998.

In the Energy White Paper, the Australian government has not committed to either supporting or not supporting the use of nuclear energy in Australia. It stated that it would consider the outcomes of the South Australian Royal Commission into its future involvement in the nuclear fuel cycle including the mining, enrichment, energy and storage phases for the peaceful use of nuclear energy. The Royal Commission delivered its report on 6 May 2016, recommending that the South Australian government pursue the removal, at the Federal level, of the current prohibition on nuclear power generation to allow this form of generation to contribute to a low-carbon electricity system if required.

In 2017, the Finkel Report (see below) observed that the establishment of nuclear power would require 'broad community consultation and the development of a social and legal licence'. Owing to the 'strong awareness of the potential hazards associated with nuclear power plant operation, including the potential for the release of radioactive materials', the Finkel Report concluded that any development of nuclear power technologies would require significant time to overcome the social, legal, economic and technical barriers in Australia.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In accordance with clause 2.5.1 of the Rules, a person must not engage in the activity of owning, controlling or operating a transmission network unless that person is registered by AEMO as a transmission network service provider (TNSP).

In addition, a number of the state jurisdictions require TNSPs to be licenced (or hold an authorisation) pursuant to the state's legislative regime for electricity regulation.

The relevant state authorisations typically include:

- an environmental approval;
- planning and construction approval; and
- appropriate land rights, by way of easement, lease or licence granted by landowners over which the transmission network will pass.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Clause 5.3 of the Rules specifies the process by which a registered participant or proposed registered participant may make a request to establish or modify a connection to a transmission network.

An offer to connect must be fair and reasonable and must be consistent with the safe and reliable operation of the power system in accordance with the Rules. The TNSP and the connection applicant must negotiate in good faith to reach a connection agreement. In the event of a dispute, Part K of Chapter 6A of the Rules provides for commercial arbitration of that dispute.

Access

There is no ability for a generator in the NEM to secure 'firm' access rights to the transmission network. Accordingly, generators that are connected to the transmission network face congestion risk. The AEMC previously developed a proposed Optional Firm Access (OFA) model, pursuant to which generators would be entitled to pay TNSPs for the right to secure 'firm' access, and be charged by TNSPs in accordance with the costs of providing that access to firm capacity.

The AEMC's final report to the Standing Council of Energy and Resources concluded that the implementation of OFA would not contribute to the achievement of the NEO, although circumstances may arise in the future where there is a need for significant additional investment where the location and type of investment is uncertain, in which benefits may be derived from an OFA.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

There are no specific governmental (eg, tax) incentives offered for expansion or augmentation of transmission networks.

In accordance with the Rules, the AER will approve forecast capital expenditure only where it is satisfied that the forecast reasonably reflects, among other things, the efficient costs of meeting demand and maintaining the quality and reliability of services.

Other incentives for TNSPs in the NEM include an efficiency benefit sharing scheme (EBSS) for operational expenditure, under which the AER determines the manner in which benefits of efficiency gains are shared between network businesses and network users. In accordance with the Rules, the AER has the power to apply an EBSS to capital expenditure for both transmission and distribution network businesses.

In July 2018, Chapter 5 of the Rules took effect. The amendments to the Rules in this Chapter introduce changes to transmission connection arrangements that are broadly intended to increase transparency and contestability for connection services.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The AER must make transmission determinations for TNSPs in accordance with Chapter 6A of the Rules for prescribed transmission services and negotiated transmission services.

A TNSP is required to prepare a 'negotiating framework' that sets out the procedure to be followed for the purposes of negotiations to agree upon the terms and conditions of access.

In addition, the TNSP must submit to the AER a 'revenue proposal' and a proposed 'pricing methodology' relating to the transmission services provided by means of the transmission system owned, controlled or operated by that TNSP. This process involves forecasting the revenue requirements needed to cover efficient costs and provide a commercial return on capital investment.

The AER makes a final decision in respect of the transmission determination. Upon the AER making that final decision, the transmission determination will apply for a prescribed 'regulatory control period' (being a period of not less than five years).

Section 7A of the NEL specifies the Revenue and Pricing Principles, which provide that a regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services and complying with a regulatory obligation or requirement or making a regulatory payment.

The costs that a TNSP can recover are determined using the 'building block' approach. This approach is used to ensure that the expenditure of each transmission network service provider is amortised appropriately over time.

The maximum allowable revenue calculated using the building block methodology is converted into network prices using demand forecasts. In the case of TNSPs, the network pricing is set according to a 'revenue cap' methodology and the AER sets the 'maximum allowed revenue' for each year of the regulatory control period.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

AEMO is primarily responsible for assuring reliability of the transmission grid in the NEM. The relevant powers and responsibilities are summarised in the response to question 2.

Reliability of the transmission network is determined in accordance with the standards specified in the NEL and the Rules. In particular, clause 4.3 of the Rules specifies the scope of AEMO's responsibilities for ensuring power system security, including in relation to the transmission network.

In July 2018, AEMO produced an Integrated System Plan (ISP), which is a cost-based engineering optimisation plan that forecasts the overall transmission system requirements for the NEM over the next 20 years.

The ISP was produced in response to a recommendation from the Finkel Report (see below), and is intended to assist in planning for the NEM in light of the fundamental changes in the sources and dynamics of the Australian electricity sector.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

As with the response to question 9, subject to certain exemptions (including for embedded networks), a person wishing to engage in the activity of owning, controlling or operating a distribution system must be registered by AEMO as a distribution network service provider (DNSP) in accordance with clause 2.5.1 of the Rules.

In addition to the requirements for registration under the Rules:

- for a person to own and operate a distribution network, several of the state or territory jurisdictions require DNSPs to be licenced (or hold an authorisation) pursuant to the legislative regime of that state or territory for electricity regulation; and
- the construction of a distribution network may require environmental or planning approvals in accordance with the applicable state or territory jurisdictional requirements, similar to those required for transmission network services (see question 9).

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In accordance with Chapter 5 of the Rules, and as described in the response to question 10, a person seeking connection to a distribution network is required to make an application to the applicable DNSP in accordance with the process specified in clause 5.3 of the Rules.

Under the Rules, a person may apply to a DNSP for provision of 'direct control' services or 'negotiated distribution' services.

Access to distribution services is negotiated by the DNSP and the connection applicant in accordance with the Rules. In particular, in accordance with clause 5.5 of the Rules, a DNSP must negotiate in good faith with the relevant connection applicant to reach agreement in respect of the distribution network access arrangement sought by the applicant, subject to those arrangements being consistent with good electricity industry practice.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no specific governmental (eg, tax) incentives available for expansion or augmentation of distribution networks.

In accordance with the Rules, the AER will approve forecast capital expenditure only where it is satisfied that the forecast reasonably reflects, among other things, the efficient costs of meeting demand and maintaining the quality and reliability of services.

An EBSS for operational expenditure also applies to DNSPs (see the response to question 11).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In the NEM, DNSPs are subject to both revenue and price regulation. Pursuant to Chapter 6 of the Rules, the AER makes a distribution determination that applies to a DNSP for a regulatory control period of not less than five years.

A distribution determination imposes controls over the prices of direct control services, the revenue to be derived from direct control services, or both.

Under Chapter 6 of the Rules, the same pricing principles as described in respect of transmission network services in question 13 are applied by the AER in making distribution determinations. However, the methodology used varies as between the participating states and territories. In particular:

- a revenue cap applies to DNSPs in Queensland and Tasmania;
- a weighted average price cap applies to DNSPs in New South Wales, Victoria and South Australia; and
- a maximum average revenue cap applies to the DNSPs in the Australian Capital Territory.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Retailers must obtain an authorisation (or licence in jurisdictions that have not adopted the NECF) unless an exemption applies. An authorisation will apply in all NECF participating jurisdictions as the AER does not have the power to limit the jurisdiction where the retailer can operate.

The AER is responsible for granting and monitoring compliance with authorisations and the NECF. In participating jurisdictions that have not implemented the NECF, the relevant state regulator is responsible. A prospective retailer must apply to the AER or the applicable state regulator for an authorisation or licence (as the case may be).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There are two classes of mass market customer contracts: standing retail contracts and market retail contracts.

Standing retail contracts

Standing retail contracts are basic contracts for residential and certain small business customers who do not negotiate a market retail contract. In some states (such as Tasmania) the designated retailers are obliged to offer standing retail contracts at regulated prices set by an independent energy regulator. In Victoria, although all retailers must offer standing retail contracts, standing offer rates are determined by the retailer and not the regulator.

The provisions of standing retail contracts are more regulated than market retail contracts and the rights of retailers to vary the terms or rates are also limited by legislation.

Market retail contracts

Market retail contracts are negotiated between the customer and the retailer. The prices are set by the retailer not the regulator. Market retail contracts must include the minimum terms and conditions prescribed by applicable law.

All jurisdictions participating in the NEM have full retail contestability.

Prices for the retail supply of electricity have been deregulated in South Australia, Victoria and New South Wales. Market monitoring, in place of retail price regulation, commenced in southeast Queensland on 1 July 2016.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

See the response to question 2 under the subheading 'Operation of the NEM'.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The designated retailer (being the local area retailer, where there is no connection or the financially responsible retailer, where there is an existing connection) must offer to supply electricity to small customers at the standing offer prices and under the retailer's standing retail contract. Under the NECF there is also a retailer of last resort scheme, which provides for the continuity of supply to customers of a failed retailer by the retailer of last resort appointed by the AER.

Under the NECF, retailers are required to develop and implement a customer hardship policy for customers experiencing payment difficulties caused by hardship to assist these customers to pay their energy bills. These policies must be approved by the AER.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Regulatory policy is determined by the Ministerial Council on Energy (taking into account reviews conducted by the AEMC) together with the economic regulatory functions and powers conferred upon the AER.

23 Scope of authority

What is the scope of each regulator's authority?

A summary of each regulator's authority is set out in the response to question 2.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

Each regulator is established by statute as summarised in the response to question 2, independent of each 'regulated business' and is a government body.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

There is no right of appeal from a decision by the Australian Competition and Consumer Commission (ACCC) under its informal merger review process. The potential acquirer would either seek a declaration from the Federal Court or pursue an application for authorisation (discussed further in question 27).

The Competition and Consumer Amendment (Abolition of Limited Merits Review) Act 2017 (Cth), which received royal assent on 30 October 2017, abolished the limited merits review regime, which had

allowed decisions regarding regulated assets to be challenged in the Australian Competition Tribunal on limited grounds (factually erroneous, incorrect or unreasonable). Now, AER decisions are no longer subject to merits review and may be challenged only on judicial review grounds in the Federal Court. In essence, judicial review is available only in limited circumstances where rules of natural justice or procedural fairness have not been observed or an error of law has been made.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Section 50 of the CCA and the other provisions of the CCA insofar as they relate to section 50, represent the statutory regime for the assessment by the ACCC of a potential acquisition in an electricity market in Australia.

In addition to the ACCC, the Foreign Investment Review Board (FIRB) may also recommend to the Treasurer not to permit an acquisition of shares or assets by a foreign person in certain circumstances under the Foreign Acquisitions and Takeovers Act 1975 (FATA) (see question 31 for further detail).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The section 50 test

The test under subsection 50(1) of the CCA is whether a proposed acquisition would have the effect, or be likely to have the effect, of substantially lessening competition in any market in or concerning Australia.

This question is determined by the use of the 'future with-and-without' test. This test requires a consideration of the likely state of future competition in the relevant market 'with' and 'without' the proposed acquisition. The 'without' scenario, or 'counterfactual', is the likely state of affairs in the market in the absence of the proposed acquisition.

Informal merger review process

The informal merger review process is administrative (ie, non- statutory) in nature. However, it is supported by provisions of the CCA, including section 80(1A) (the power conferred upon the ACCC to apply for injunctive relief), section 87B (enforceable undertakings) and section 155 (information gathering powers).

Statutory merger authorisation

Following amendments to the CCA in November 2017, the statutory pathway for approval of a proposed acquisition of assets or shares is to obtain a grant of a merger authorisation from the ACCC, a decision that is subject to review by the Australian Competition Tribunal. A review by the Tribunal of a determination by the ACCC in relation to an application for a merger authorisation is not a re-hearing of the matter.

If merger authorisation is granted, section 50 of the CCA will not prohibit completion of the acquisition in accordance with the authorisation.

The test for merger authorisation under the CCA requires that either: the acquisition would not have the effect, or be likely to have the effect, of substantially lessening competition in any relevant market; or the public benefit that would result, or be likely to result, from the acquisition outweighs the public detriment that would result, or be likely to result, from the acquisition. The most prominent public detriment will be competitive detriment. The analysis requires identification of a counterfactual and a comparison of the 'future with' and the 'future without' the proposed acquisition.

Market power

In the context of the wholesale electricity markets, a distinction is to be drawn between sustained market power and transient market power. According to the AEMC, the concept of 'substantial market power' in the wholesale market should be defined as the ability of a generator or group of generators to increase annual average wholesale prices to a level that exceeds estimates of long run marginal cost, and to sustain prices at that level owing to the presence of significant barriers to entry.

Market definition

Market definition is an essential first step.

Criteria

Subsection 50(3) of the CCA sets out an inclusive list of matters that must be taken into account in assessing a proposed acquisition.

Inherent within the test in section 50 of the CCA is the question of whether a proposed acquisition would confer upon the acquirer a substantial degree of market power in any market. In this respect, barriers to entry, expansion and exit are of primary concern.

In an authorisation decision in 2014, the Australian Competition Tribunal confirmed the following:

- the market for the generation and supply of electricity in the NEM is a 'national market' including hedging and other derivative contracts; and
- the retail market for electricity is state- or region-based, with a distinction between commercial and industrial customers and mass-market customers.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

For the purposes of the CCA, the ACCC has the power to prevent or prosecute anti-competitive or manipulative practices. For the purposes of the Rules, the AER has the power to prevent or prosecute anti-competitive or manipulative practices.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Part IV of the CCA

A market participant is subject to the provisions of the CCA, including the following:

- a contract, arrangement or understanding that has the purpose, or has or is likely to have the effect, of substantially lessening competition in a market;
- since November 2017, engaging with one or more persons in a concerted practice that has the purpose, or has or is likely to have the effect, of substantially lessening competition in a market;
- since November 2017, a market participant with a substantial degree of power in an electricity market engaging in any conduct that has or is likely to have the effect, of substantially lessening competition in a market; and
- cartel conduct (which can be both civil and criminal in nature), that is directed towards price fixing, restricting output, allocating customers, supplies or territories and bid-rigging.

The Rules – making false or misleading offers

There is a prohibition on making a dispatch offer, dispatch bid or rebid that is false, misleading or likely to mislead. The making of the offer, bid or rebid is deemed to represent to other generators or market participants that it will not be changed unless the generator or market participant becomes aware of a change in the material conditions and circumstances on which that offer, bid or rebid is based. A rebid must be made as soon as practicable after the Generator or Market Participant becomes aware of a change in material conditions and circumstances.

There are also requirements on generators to specify the minimum rates at which they may increase or decrease output.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The CCA

The ACCC has significant powers conferred upon it under the CCA, including the following:

Update and trends

Finkel report
Following a complete loss of power in areas of South Australia on 28 September 2016 (a 'Black System event'), the COAG Energy Council commissioned an independent review of the current state of the security and reliability of the NEM by Australia's Chief Scientist, Dr Alan Finkel, who provided his final report in June 2017 (the Finkel Report).

The Finkel Report identified the poor integration of intermittent renewable electricity generators into the NEM and the unplanned withdrawal of older coal- and gas-fired generators as having compromised security and reliability. The Finkel Report contains a series of recommendations to improve the reliability and security, as well as the governance, of the NEM, including:

- the imposition of reliability obligations for new generators to ensure minimum dispatchable capacity for each region is maintained (eg, by requiring, where necessary, that new intermittent renewable electricity generators also bring forward new dispatchable capacity to the region);
- large generators will be required to give a binding three years' notice period before closure to signal investment opportunities for new generation (this is subject of a draft rule that is currently under review);
- energy security obligations for new generators and TNSPs to ensure that the system is better able to withstand disruptions (eg, interconnector failures). New generators will be required to have fast frequency response capability. TNSPs will be required to maintain a sufficient level of inertia for each region (a rule to this effect has been introduced); and
- the creation of the Energy Security Board (ESB) that will be responsible for implementing the recommendations in the report and providing whole-of-system oversight for energy security and reliability. The ESB was established in August 2017.

The COAG Energy Council accepted 49 out of the 50 recommendations of the Finkel Report. The only recommendation that was not accepted was the recommendation to introduce a clean-energy target.

AEMO dispatchable generation report
In September 2017, AEMO provided a report to the federal government advising that there is under-investment in the of flexible dispatchable generation sources needed to ensure supply reliability in the NEM, affirming many of the conclusions about NEM reliability and supply mix found by the Finkel Report.

AEMO's recommendations to address this finding include establishing an immediate 'strategic reserve' of approximately 1,000MW of dispatchable energy to ensure supply reliability in Victoria and South Australia, and changes to NEM market design to promote more generation investment before 2021–2022.

ACCC retail electricity pricing inquiry
On 27 March 2017, the Federal Treasurer directed the ACCC to hold an inquiry into the retail supply of electricity and the competitiveness of retail electricity markets in the NEM.

Following the release of a preliminary report on 22 September 2017, on 11 July 2018 the ACCC released its final report. The ACCC report concluded that the rising retail electricity prices had been influenced by a series of factors and pressures across all stages of the electricity supply chain. The report made a total of 56 recommendations for comprehensive reform measures to all aspects of the NEM, with a focus on increasing the affordability of electricity for retail customers.

Among the 56 recommendations, the ACCC recommended amendments to the NEL including:

- to prevent any acquisition that would result in a market participant owning, or controlling dispatch of, more than 20 per cent of generation capacity in any NEM region or across the NEM as a whole;
- to provide the AER with powers to address manipulation of the wholesale market (along with necessary investigation powers and appropriate remedies to detect and enforce compliance with these laws); and
- to require the reporting of all over-the-counter trades to a repository administered by the AER, so de-identified trades can be publicly disclosed (without unintentionally revealing the parties involved).

- the ACCC has the power to apply to the Federal Court for a declaration, and divestiture where an acquisition contravenes section 50 of the CCA;
- the ACCC can accept an enforceable undertaking pursuant to section 87B of the CCA; and
- the ACCC has the power to apply to the Federal Court for a pecuniary penalty for each act or omission in contravention of a provision of Part IV (other than the criminal cartel provisions) of the CCA.

The Commonwealth Director of Public Prosecutions has the power to apply to the Federal Court for a fine for cartel conduct that is an indictable offence (criminal cartel conduct) determined by criteria substantially identical to those applicable to a pecuniary penalty.

In addition, in the case of an individual, a contravention of a cartel offence provision can be punishable by a term of imprisonment of not exceeding 10 years or a fine not exceeding A$420,000.

The NEL
The AER has various enforcement powers under the NEL, including that it may:

- accept an enforceable undertaking pursuant to section 59A of the NEL; and
- make an application to the Federal Court or the Supreme Court of a participating jurisdiction for a declaration or an injunction.

If such a declaration is ordered, that order may include an order that the person pay a civil penalty for a breach of a civil penalty provision determined in accordance with the NEL and the Rules.

The AER may serve an 'infringement notice' on a person that it has reason to believe has breached a civil penalty provision (other than a 'rebidding civil penalty provision').

The NEL contains 'offence provisions' a breach or contravention of which by a person exposes that person to a finding of guilt by a court.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

FATA applies to the acquisition of interests in Australian businesses and assets by foreign persons. Notification under the FATA is subject to certain financial and other thresholds.

All notifiable transactions are subject to a review by the FIRB. FIRB makes a recommendation to the Federal Treasurer as to whether the acquisition is contrary to Australia's national interest. The Treasurer makes the decision. Generally, there is a 30-day period for a decision under the FATA, although this can be extended in certain circumstances, including where the applicant requests the time frame be extended.

It is the practice and policy of the FIRB to defer any decision until after decisions of other federal bodies have been made (in particular, the ACCC and the Australian Tax Office).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The rules that govern the construction and operation of transmissions assets are also applicable to interconnectors (see the response to question 9).

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Not applicable in Australia.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

In accordance with clause 6.20.2 of the Rules, the AER is required to develop ring-fencing guidelines for TNSPs (with which they must comply under clause 6.20.1 of the Rules).

The guidelines require all TNSPs to ensure legal and operational separation of their transmission business from other related businesses (for the purpose of the guidelines, a 'related business' includes electricity generation, distribution or retail supply). Clauses 7.3-7.5 of the guidelines require a TNSP to separate the accounting and functional aspects of regulated transmission services from the remainder of its business.

Rule 6.17 of the Rules requires DNSPs to comply with any Distribution Ring-Fencing Guidelines made by the AER (although the Rules permit such guidelines to 'vary in application as between different participating jurisdictions').

The most recent version of the guidelines was issued on 17 October 2017. The guidelines impose a number of obligations on DNSPs:

- there must be legal separation between the DNSP and any affiliate that provides services other than transmission or distribution; and
- the DNSP must not discriminate against a competitor.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

See question 33.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Belgium is a federal state with several levels of government. The federal responsibilities include security of supply, the nuclear fuel cycle, production and federal supply licences, consumer protection and transmission tariffs. The three regions (Flanders, Wallonia and Brussels) are principally responsible for energy efficiency, renewables, regional supply licences and distribution tariffs.

A large part of Belgian energy law, both at the federal and regional level, is based on the EU's internal market regulation (the 'Third Energy Package'). These rules, often directly applicable or transposed into Belgian law, include rules on infrastructure investment and state aid, the regulation of network operators (eg, regulated tariffs, unbundling requirements and third-party access), network operation and safety, trading (eg, market coupling) and market monitoring and supervision by independent regulators.

Belgium has been heavily dependent on imported energy since the end of domestic coal production. Security of supply is therefore a key objective of Belgian energy policy. A strategic reserve mechanism was put into place in 2014 and was very recently amended to address state aid concerns previously expressed by the European Commission, and to implement a number of improvements to bring the mechanism more in line with the realities of the market. Recently, the federal government agreed on the introduction of a broader capacity remuneration mechanism to guarantee the security of supply, secure the energy transition and offset Belgium's nuclear phase-out by 2025. When approved by the European Commission, this mechanism is meant to replace the strategic reserve.

Other objectives of the Belgian federal and regional energy policies include energy efficiency, transparent and competitive energy pricing and environmental protection.

Driven by EU efforts to deal with energy and climate challenges, the Belgian authorities support the development of capacities of power generation based on renewable sources of energy.

At the same time, Belgium continues to rely heavily on nuclear power production (representing around 50 per cent of total production). In 2015, the federal government reached an agreement with the incumbent producer and owner of the nuclear park, Electrabel, and its mother company, Engie, to keep nuclear power in the Belgian energy mix at least until 2025, subject to heavy investment into the seven existing nuclear generation units.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

As a matter of principle and in accordance with EU law, the generation andimport, trade and supply to end consumers of power is liberalised and open to all market participants. Networks, on the other hand, are strictly regulated and subject to a national (transmission) or local (distribution) monopoly.

While most energy operators in Belgium, including the transmission system operator (TSO) and market operator(s), are private companies, the municipalities either directly or indirectly control the transmission and distribution system operators (DSOs) throughout the country.

Following consecutive generations of EU internal energy market regulation, transmission and distribution activities previously performed by vertically integrated power companies have been disentangled from their respective production or import, trading and supply activities. In 2001, incumbents Electrabel and SPE (and their cooperation subsidiary CPTE) incorporated and contributed their transmission assets and activities to the newly established company Elia. In 2002, Elia was appointed the sole transmission system operator for electricity in Belgium. In 2012, Elia was certified as a fully ownership unbundled TSO under the EU's Third Energy Package ownership unbundling rules.

Although ownership unbundling is not required for DSOs, Electrabel has divested all its historic participations in the Belgian DSOs. The DSOs enjoy a legal monopoly within their geographically confined areas, usually covering the territory of several municipalities.

Power can be traded by market participants on the Belgian power exchange operated by Epex SPOT Belgium. The Belgian exchange (formerly Belpex) was created in 2005 and merged with Epex SPOT in 2015. Epex SPOT in turn is owned by the EEX Group (through Powernext) and HGRT, a conglomerate of network operators including Elia. The Belgian power market has subsequently been coupled with markets in other European countries. The currently applicable Multi-Regional Coupling (MRC) covers 19 countries and 85 per cent of European power consumption.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

A federal production licence must be issued by the federal Energy Minister, subject to a prior advice from the federal Commission for the Regulation of Electricity and Gas (CREG), for each construction of a new generation facility, as well as the reconstruction or modification of an existing facility not subject to an individual licence, resulting in an increase of the net capacity by more than 25MWe.

By way of exception, nuclear generation units are excluded from this requirement, as they can no longer be the subject of any permit or licence in Belgium (ie, subject to a change in law, no new nuclear generation units can be constructed in Belgium).

The construction and operation of generation facilities on land is subject to regional land planning and environmental law and regulations, and may therefore require a building and an environmental permit, depending on the nature of the installations. For offshore constructions (including cables for connection to the onshore transmission system), additional permits and authorisations may be required under federal law.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

In accordance with EU law, grid users (including generators) have a right to non-discriminatory grid access, subject to their: compliance

with the applicable (technical) requirements; payment of the applicable, pre-approved tariffs; and entering into industry standard regulated contracts with the relevant network operator(s) (see question 10).

Besides the tariffs and contractual framework, grid connection and access are covered by several grid codes at national and EU level.

Priority grid access may apply in certain cases for certain types of (renewable) generation. Under future EU legislation (the 'Clean Energy Package'), the possibilities of priority grid access are likely to be reduced for new installations.

The network operators are required to keep commercially sensitive information obtained from grid users confidential.

Specific permits may be required and compensation can be obtained for costs incurred for the connection of offshore (wind) generation units to the transmission grid. Specific rules also apply to private and direct lines, as well as closed industrial networks and closed distribution systems to which generators may connect, in order to ensure the viability of the public grid as well as the users' right to grid access.

Grid connection and access can be refused by the network operators in accordance with the applicable network codes if technically unfeasible or economically unviable, or to ensure the secure operation and integrity of the grid.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Except for power production in the North Sea, renewable energy sources are a regional competence. Government policy and legislation encouraging the use of alternative energy sources are therefore decided on a federal (offshore) and a regional level and may differ between the three Belgian regions.

As a general rule, all three regions as well as the federal state (regarding offshore) have policies and a legal framework in place to support renewable energy generation. All of these include a system of green certificates (either federal or regional) that are issued for each kWh of power produced, which can subsequently be sold either on the market (demand for certificates is driven by quota obligations for suppliers or grid users) or to the TSO or DSO at a certain minimum price.

Offshore renewable generation is supported through the federal system of green certificates. Brussels promotes the use of renewable energy sources by assimilating the federal system of green certificates combined with a quota obligation, as well as through net-metering for small producers and investment aid for certain companies and projects. Flanders has its own system of green certificates and combined heat and power (CHP) certificates combined with quota obligations in place, together with net-metering for small-scale generation and ecological premiums for environmentally friendly investments. Wallonia promotes renewable generation though various means, including the federal system of green certificates and quota obligations, investment aid and specific support schemes for certain technologies.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Belgium is committed to the Paris climate agreement. In 2015, during the Paris negotiations, the different regions and the federal state reached a Belgian internal climate agreement, allocating the efforts to be made by each region and the federal state towards reaching Belgium's overall climate targets.

Despite these commitments and in line with public opinion, policy has recently seen a shift towards reducing subsidies for renewable power generation (eg, cutting subsidies for biomass, photovoltaic generation and offshore wind). This shift may render the achievement of the Belgian climate targets more challenging.

In view of the climate targets, nuclear power, despite its gradual phase-out, will continue to play an important role in the Belgian energy mix at least until 2025. Some factions already argue today that climate policy will make the extension of the life duration of the nuclear units beyond 2025 inevitable.

At the same time, climate targets are likely to push the different Belgian governments towards policies promoting energy efficiency measures, distributed generation and small-scale renewable production that require fewer subsidies (such as heat boilers, which have seen prices drop drastically over recent years).

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The current regulatory framework in Belgium is generally silent about electric-power storage, which (unlike gas storage) is not considered a task belonging to the legal monopoly of the network operators.

Large-scale (hydro) storage facilities exist in Belgium, although the law does not provide for any specific regulatory incentives.

Plans for a large-scale tidal storage facility in the North Sea ('atoll'), to be constructed by the TSO and funded through the transmission tariffs, have been put on hold.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Under the current state of the legislation, no new nuclear power generation units can be constructed in Belgium.

Subject to any policy changes, all seven existing nuclear units in Belgium are subject to a gradual phase-out by 2025.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Belgium has a single TSO to operate the entire public transmission system, which is appointed for a 20-year period by the federal Energy Minister following consultation with the Council of Ministers and a prior advice from CREG, on the proposal of one or more network owners which, jointly or separately, own a part of the transmission system covering at least 75 per cent of the national territory and at least two-thirds of the territory of each region.

Elia System Operator was appointed as the single TSO for a 20-year period on 13 September 2002. The network assets are owned by its wholly owned (minus one share) subsidiary, Elia Asset. In accordance with EU unbundling rules, Elia System Operator was certified as a fully ownership unbundled TSO on 6 December 2012.

Subject to certain conditions, third parties may obtain an individual licence from the federal Energy Minister to construct a direct line or may be authorised by the federal Energy Minister to operate a closed industrial network.

Much the same as for generation facilities, the construction and operation of transmission (and distribution) systems on and off shore may require certain permits and authorisations under regional and federal law, depending on the nature and the location of the installations. Public utility easements may be granted to the TSO for infrastructures crossing private land and, in certain instances, the TSO may be entitled to expropriate the property of private owners in the public interest.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

In principle, all grid users connected to the transmission system on 1 July 2004 or who are otherwise eligible (ie, under the laws of another EU member state) have a right of access to the grid on non-discriminatory conditions as set out in the answer to question 4.

The TSO can refuse access only if it does not have sufficient capacity available (in accordance with the applicable rules on capacity allocation) or if the access would prevent its proper execution of a public service obligation in the general economic interest, and without breaching the rules on the exchange of energy flows in a way that would harm the European interest.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The TSO is required to draw up and update (every four years) a 10-year network development plan, taking into account the EU-wide 10-year network development plan determined by the European Network of TSOs for Electricity (ENTSO-E). The 10-year network development plan is subject to the advice of CREG and the approval of the federal Energy Minister, and the minister responsible for the North Sea to the extent relevant to the connection of offshore generation units.

Investments into the network by the TSO are compensated through the regulated tariffs in accordance with the applicable tariff methodology and proposal, as approved by CREG (see below).

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Grid connection, access and balancing services are subject to regulated tariffs, which are pre-approved by CREG for a four-year regulatory period, based on a proposal by the TSO. The proposal must be based on a tariff methodology established in advance by CREG, which in turn takes into account the specific tariff guidelines set out in the law. The current tariff period runs from 2016 until 2019 and the tariffs and methodology applicable in this period follow a fair remuneration mechanism, combined with incentive components for certain expenses and revenues of the TSO. Once approved, the tariffs in principle remain unchanged during the entire tariff period, subject to revision which can be requested by the TSO or initiated by CREG if they are no longer proportionate owing to changed circumstances.

In addition to the regulated tariffs, transmission services are governed by industry standard regulated contracts, which are also pre-approved by CREG. For electricity transmission, the main regulated contracts are the connection contracts, the access contracts and the access responsible party (ie, balancing) contracts.

The tariffs and regulated contracts are non-negotiable between the TSO and individual grid users. Any amendments (subject to prior CREG approval) are applied to all grid users simultaneously.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The TSO is responsible for the secure and reliable operation of the grid in accordance with the law and all the applicable (national and European) grid codes. Its various tasks and roles are detailed in the law. The federal regulator, CREG, as well as the federal energy administration and the federal Energy Minister, have certain specific monitoring and supervision competences.

In the event of a sudden crisis on the energy market or when the physical safety of persons, the safety or the reliability of equipment or installations or the integrity of the transmission system are in jeopardy, the King (ie, the federal government) can take emergency measures (which can temporarily deviate from the provisions of the law) by Royal Decree, following consultation within the Council of Ministers and with the TSO, and following advice from CREG.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

DSOs are appointed by the regional regulators or, in the Brussels-Capital region, by the Brussels government, to operate the distribution system of a certain geographically confined area, within which they enjoy a legal monopoly. The DSOs are appointed for a maximum period of 12 years (in Flanders) or 20 years (in Wallonia and Brussels). In the Flemish and Walloon regions, several DSOs are active. In the Flemish region, all DSOs work together through the operating company, Fluvius, a company that was created through a merger of the previously existing operating companies Infrax and Eandis. The two largest DSOs in the Walloon region are Ores and Resa, with a number of smaller DSOs that are locally active. Sibelga is the sole DSO in the Brussels-Capital region.

Subject to certain conditions, third parties can obtain an individual authorisation from – or have to notify – the relevant regional regulator, to construct a new direct line or to operate a closed distribution system or a private network.

As mentioned in question 3, the construction and operation of both transmission and distribution systems may require certain permits and authorisations. Like the TSO, DSOs may benefit from public utility easements for infrastructures crossing private land and, in certain instances, may be entitled to expropriate the property of private owners in the public interest.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In accordance with EU law, all DSOs must provide non-discriminatory access to their distribution system, subject to grid users entering into regulated contracts, compliance with the (technical) requirements and payment of distribution tariffs.

The DSOs may refuse access to their distribution system on specific conditions set out in the laws of each region. For instance, access can be refused in the event that there is insufficient grid capacity or if the technical requirements are not met.

In the event of a dispute on the conditions for access, grid users can lodge a complaint before the competent regional regulator or before the courts.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

In Belgium, the legal framework does not provide for specific rates or tax benefits to encourage the development of distribution systems.

DSOs must operate, maintain and develop the distribution system for which they are responsible. In that framework, they must establish a multi-annual network development plan, to be approved by the relevant regional regulator, to ensure the continuation of the electricity supply, security and development.

Economically speaking, distribution system expansion is mainly encouraged through the regulated network tariffs, which are approved by the relevant regional regulator (see question 17).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In accordance with EU law, the rates for access to distribution systems are monitored and approved by the relevant regional regulator.

In each region, the regulator sets up a tariff methodology taking into account the specific tariff guidelines set out in the relevant regional legislation. Based on that methodology, each DSO establishes a tariff proposal which is approved by the relevant regulator. In practice, network tariffs are payable to the DSOs by the grid users and subsequently charged on to the end users.

In general, the tariffs are established for a multi-annual term and remain unchanged during the entire tariff period, but they can be subject to revision in limited circumstances. In Belgium, the tariff models in the various regions are shifting from a 'cost +' model towards a more incentive-based model, bearing in mind that each region has its own specificities and requirements.

Like transmission services, distribution services are governed by regulated contracts to be pre-approved by the relevant regional regulator. The main regulated distribution contracts are the connection contract and the access contract. As for transmission, distribution tariffs and regulated contracts are non-negotiable between the DSOs and individual grid users and any amendments (subject to prior approval by the competent regulator) are applied to all grid users simultaneously.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

A regional supply licence is required for the sale of power to end users in each region. These supply licences are granted in Flanders, Wallonia and Brussels by the Flemish Regulator for Electricity and Gas (VREG), the Walloon Commission for Energy (CWaPE) and the Brussels Energy Minister respectively. Any person wanting to perform supply activities in Belgium must therefore obtain licences in all three regions. In all three regions, the supply licences are valid for an indefinite period. The laws of each region stipulate the exact licence requirements, the procedure, the reporting obligations and the grounds for suspension or revocation of the licence.

In Flanders, suppliers holding a licence granted by another regulator or in another EU member state are exempt from the obligation to obtain a separate licence in Flanders. In addition, no supply licence is needed for the supply of green power or electricity generated by a qualitative CHP facility through a direct line (an authorisation may still be required for the construction of a new direct line).

If an end user has a direct connection to the federal transmission system, a federal supply licence is also required to supply power to it.

Besides these general licences, Walloon and Brussels legislation provides for specific licences: a licence for the supply of 100 per cent renewable energy (Brussels-Capital region), a licence limited to a capped capacity, a licence limited to certain types of clients or to a certain area and a licence limited to ensuring a grid user's own supply (Wallonia).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The price of electricity is, in principle, based on market mechanisms. However, both federal and regional law may intervene in the sale of electricity.

The federal Economy Minister may impose maximum prices for the supply of electricity to end users and protected clients.

Federal law further provides that an electricity supplier must objectively justify its prices in comparison to its costs. In that framework, CREG has a general mission to monitor electricity prices but cannot (yet) take binding enforcement actions against suppliers. Furthermore, the law sets out a package of measures regarding the variable prices charged for the supply of electricity to households and SMEs.

The sale of electricity to household consumers is also governed by regional legislation. These regional laws determine, among other things, mandatory provisions in supply contracts and invoices, such as those dealing with minimum notice periods for termination, consumer protection, change of supplier and dispute resolution.

The Brussels legislation also enables the Commission for Energy Regulation in the Brussels-Capital region (Brugel) to set up a progressive pricing system for electricity.

More generally, power suppliers must also comply with the rules set out in the Code of Economic Law (the 'CEL'), especially regarding unfair commercial practices, distance selling or publicity, and the new version of the Consumer Agreement ('the consumer in a liberalised electricity and gas market') and the related Code of Conduct. This industry wide agreement aims to protect consumers against abusive practices developed and misleading information given by suppliers.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Subject to rules curtailing abusive market behaviour, power prices on the wholesale electricity markets are based on market mechanisms. As explained in question 19, the federal Economy Minister may impose maximum prices for the supply of electricity to end users.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Regional legislation sets out public service obligations for DSOs and electricity suppliers.

These public service obligations vary from one region to another. As a rule, electricity suppliers must ensure the regularity and quality of the electricity supply. Besides this general public service obligation, the federal and regional legislators impose public service obligations on suppliers aimed at the protection of vulnerable consumers (eg, providing for specific procedures in the event of payment problems encountered by household consumers), rational use of energy, protection of the environment and, in particular, promotion of renewable energy (eg, green certificates).

Other intermediaries, such as producers, must also abide by certain public service obligations, some of which are linked to the security of electricity supply (ie, the provision of certain services to be contracted by the network operators).

The supplier of last resort is the relevant DSO (although in Flanders there is no legal provision in this respect, yet).

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

As set out in question 1, the responsibilities for electricity policy are split between the competent ministers and the relevant administrations for the federal state on the one hand, and the three regions on the other. At the federal level, the Energy Minister and the Directorate-General for Energy, part of the federal Public Service for Economy, SMEs, Self-employed and Energy, are the key authorities that develop and implement electricity policy.

Several agencies independent from the federal and regional governments also regulate parts of the electricity sector. There is one federal regulator, which is CREG. There are also three regional regulators: VREG, CWaPE and Brugel. The Federal Agency for Nuclear Control and the National Agency for Radioactive Waste and Enriched Fissile Materials supervise nuclear activities in Belgium, including the seven nuclear reactors and the treatment of nuclear waste.

23 Scope of authority

What is the scope of each regulator's authority?

CREG monitors the proper functioning of the electricity market and compliance with the federal electricity legislation. The main competences of CREG are the approval of transmission tariffs, regulation of transmission system operators, monitoring of the national electricity market and a broad advisory role.

The regional regulators have broad competences in the regional electricity sectors, ranging from monitoring the regional electricity markets to imposing sanctions, ensuring compliance with the regional regulations and settling disputes. They are principally responsible for the granting of supply licences, approval of distribution tariffs, regulation of DSOs, monitoring of the regional electricity markets and the renewable support schemes. The regional regulators also advise the regional governments, ensure compliance with the regional regulations and settle disputes.

The regulators are also vested with investigative powers and may impose sanctions on the electricity market players.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The federal and regional regulators are independent administrative authorities established by federal or regional legislation. In accordance with EU law, they act independently of the state, governments and regulated businesses (such as the network operators).

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

As a rule, most of the regulators' decisions are considered administrative acts. Accordingly, their annulment can be requested before the Council of State (the highest administrative court). The Council of State reviews the lawfulness of the disputed decisions.

As an exception to this general rule, the decisions of CREG and the tariff decisions of VREG and Brugel can be appealed in a de novo review before the Market Court of Brussels. CWaPE's decisions can be appealed before the Court of Appeal of Liège.

Any party that is affected by a decision of a regulator may also submit a request for review to these authorities. This is the only non-judicial challenge available.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

European Commission

The European Commission has the authority to review all concentrations in the electricity sector with a 'community dimension' within the meaning of Council Regulation (EC) No. 139/2004 on the control of concentrations between undertakings (OJ 2004, L24/1) (the 'Merger Regulation'). According to the Merger Regulation, a concentration has a 'community dimension' when the annual turnover of the combined undertakings exceeds specified thresholds in terms of global and European sales, as well as in terms of sales dispersion across Europe. If these thresholds are fulfilled, the European Commission has exclusive jurisdiction to assess the proposed transaction, and the domestic regulatory bodies, such as the Belgian Competition Authority (BCA), will be precluded from reviewing the transaction. Nevertheless, member states may, under article 9 of the Merger Regulation, request a referral of such transaction where it affects competition in a distinct market within that member state's territory.

Belgian Competition Authority

According to the provisions of Book IV ('Protection of competition') of the CEL, the relevant merger control authority in Belgium is the BCA, which is an independent administrative body composed of the President, the Competition College, the College of Competition Prosecutors and a Management Committee. Notifications of transactions are submitted to the Competition Prosecutor General and appeals against decisions approving or prohibiting a notified transaction may be lodged before the Brussels Court of Appeal.

The BCA is responsible for providing merger clearance to concentrations that do not have a 'community dimension' (in which case they must be notified to the European Commission) and where the undertakings concerned have a joint turnover in Belgium of more than €100 million, while at least two of the undertakings concerned each realise a turnover in Belgium of at least €40 million.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

European Commission

Concentrations that fall under the Merger Regulation must be notified to the European Commission prior to their implementation. The European Commission must complete its initial review (Phase I) within 25 working days following the date of receipt of the notification (or receipt of complete notification if later). This period may be extended to 35 working days if the parties to the transaction offer commitments within 20 working days of the notification, or if a member state requests a referral of the transaction. At the end of Phase I, the European Commission is required to decide: that it has no jurisdiction over the transaction, provided that such transaction does not fall within the ambit of the Merger Regulation; that the transaction does not raise serious doubts as to its compatibility with the common market; or to launch an in-depth investigation (Phase II).

If the European Commission opens a Phase II investigation, it has a further 90 working days in which it has to determine if the transaction is compatible with the common market. This period may be extended to 105 working days if the parties offer commitments within 55 working days from the opening of the Phase II investigation. Following a Phase II investigation, the European Commission is required to decide if it clears (with or without conditions) or prohibits the transaction.

Update and trends

Key trends and hot topics for discussion in relation to electricity regulation and the Belgian power sector include the following:

- a consolidation of the supply market owing to increased competition among power suppliers;
- the reduction of subsidies for the three remaining offshore wind farms that have yet to be constructed. Approval by the European Commission of the merger of THV Mermaid and Seastar NV into Seamade NV, which will develop offshore wind farms with a total capacity of 487MW;
- the approval by the European Commission of the strategic reserve for five consecutive winters, starting with the winter period 2017–2018, and the deployment of a strategic reserve of 500MW for the winter period 2018–2019. Belgium has further modified the legal framework in accordance with the commitments it has made to the European Commission in order to comply with European law on state aid;
- Belgium's federal government has agreed to subsidise new power capacity to guarantee the security of supply, secure the energy transition and offset the country's nuclear phase-out by 2025. This new, broader capacity remuneration mechanism is meant to replace the current strategic reserve mechanism, provided it receives state aid clearance from the European Commission; and
- the ongoing construction of the Nemo Link interconnector between Belgium and the United Kingdom, and the potential for a second UK–Belgium interconnector.

Belgian Competition Authority

The substantive test applied by the BCA, when reviewing mergers, acquisitions and other transfers of control, is whether the proposed concentration will result in a significant obstacle to effective competition on the Belgian electricity market (or other relevant product markets), in particular by creating or strengthening a dominant position. In applying this test, the BCA will consider the market shares of the parties to the transaction, as well as other structural factors relevant to competition (such as the existence of potential new entrants on the market, barriers to entry, the availability of alternative products, etc).

After the merger notification has been submitted, the BCA has 40 working days to approve the concentration (Phase I). The 40-working day period can be shortened to 15 working days in case of a simplified procedure or extended up to 55 working days in case remedies are proposed. If there is any concern that the concentration may have a negative effect on competition, the BCA may open an extended Phase II investigation, in respect of which it must make a final decision within 60 working days (or 80 working days in case remedies are proposed).

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

European Commission

The European Commission can enforce articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU). To apply and enforce these provisions, the European Commission has the power to require production of all necessary information and to undertake all necessary inspections of companies.

In 2014, the European Commission adopted Directive 2014/104/EU on antitrust damages actions (OJ 2014, L 349/1) (the Damages Directive), which aims to remove practical obstacles to compensation

for all victims of infringements of EU competition rules. The Damages Directive applies to all damages actions, whether individual or collective, that are available in the member states.

Belgian Competition Authority
Under Book IV of the CEL, the BCA has the power to investigate (upon complaint of another market player or at its own initiative) and prosecute anticompetitive behaviours. To this end, the BCA is entitled to request information and to conduct on-site investigations at the company's premises ('dawn raids').

On the basis of the Damages Directive, the Belgian parliament adopted in June 2017 the Act on Antitrust Damages, which establishes a specific civil liability regime aimed to facilitate the recovery of damages suffered by victims of anticompetitive practices. The Belgian legislation also introduces a number of claimant-friendly changes to the generally applicable liability regime in Belgium (such as the presumption that cartels cause harm, specific rules on the passing-on of cartel overcharges and the disclosure of evidence).

Energy regulators
One of the missions of the federal and regional regulators is monitoring and supervising the energy market and guaranteeing transparency and competitiveness of those markets. In the performance of their tasks, they have the power to investigate anticompetitive behaviour (eg, the occurrence of elevated prices and price peaks). In that framework, a formal reciprocal exchange of information and regular coordination between the CREG and the BCA has recently been put in place to allow for an efficient coordination between the regulation of the energy sector and the enforcement of competition rules.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

There are no sector-specific criteria for the energy sector under Belgian or EU competition rules and therefore the general provisions apply. Mirroring the provisions of articles 101 and 102 TFEU, articles 1 and 2 of Book IV of the CEL prohibit agreements and concerted practices among undertakings, as well as the abuse of a dominant position, which lead to the prevention, restriction or distortion of competition on the Belgian market.

Certain agreements caught under article VI.1 of the CEL or article 101 TFEU may be exempted if they yield benefits such as improving production or distribution or promoting technical or economic progress and result in a share of the benefit being allocated to consumers, provided that such agreements do not give rise to the possibility of eliminating competition in respect of a substantial part of a product or a service on the relevant market or markets.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The BCA or the European Commission may take certain actions if an undertaking has intentionally or negligently breached competition rules.

If an undertaking has breached article 101 TFEU or article IV.1 of the CEL, it may be fined up to 10 per cent of its worldwide group turnover and be ordered to cease the operation of the anticompetitive behaviours. Any agreements caught under these provisions are void and unenforceable. If an undertaking has breached article 102 TFEU or article IV.2 of the CEL, it may be fined up to 10 per cent of its worldwide group turnover and be ordered to cease or modify its conduct. In addition, the European Commission or the BCA may impose structural or behavioural remedies that are proportionate to the anticompetitive behaviour of the undertaking or undertakings concerned.

The federal and regional regulators may, within their respective jurisdictions, impose sanctions and the CREG can also request the BCA to open an investigation in case of breach of certain provision of the CEL.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Subject to their compliance with the unbundling rules, no specific requirements or limitations apply on acquisitions of interests in the electricity sector by foreign companies.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Interconnectors are considered part of the transmission system in Belgium. Consequently, their construction and operation in Belgian territory are subject to the TSO's legal monopoly and therefore subject to the same authorisation and permitting requirements as other parts of the transmission system (see question 9).

Offshore interconnections must be structured in such a way that the TSO holds at least 50 per cent of the share capital and voting rights of the vehicle developing, maintaining and owning the offshore interconnector.

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33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The Belgian electricity transmission grid is part of a larger, European interconnected system. As mentioned in question 4, grid users in principle enjoy a right to non-discriminatory grid access, including access to the interconnectors. A number of mechanisms control the flows of electricity between countries. Each Access Responsible Party (ARP) is able to exchange energy with ARPs in neighbouring countries on a non-discriminatory and non-transactional basis (ie, not involving a choice between transactions that have been entered into), while maintaining the balance between injection and offtake at the respective injection point or points falling under its responsibility.

A number of allocation mechanisms are used to allocate the desired volumes of electricity to ARPs on an annual, monthly, daily or intraday basis. Annual and monthly capacity is allocated by means of explicit auctions. At such auctions, the ARP can set the price for the import or export in relation to a specific bidding zone border for a certain volume (in MW) of power for each hour of the year or month in question through the acquisition of long-term transmission rights. Price formation on the European power exchanges is also influenced by market and price coupling mechanisms. The European transmission system operators have created shared rules governing the explicit auctions for allocating annual and monthly capacity.

The specific rules and requirements set out above apply to cross-border supplies of electricity to end users in Belgium.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

No specific restrictions exist on transactions between electricity utilities and their affiliates. Listed electricity utilities are, however, subject to the provisions of the Belgian Companies Code, which apply to related-party transactions with a listed company. Such provisions, which do not apply to transactions between the listed company and its subsidiaries, set out a procedure that purports to safeguard the corporate interest of the listed company through a review of the relevant transaction by a committee of independent directors.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Not applicable.

Brazil

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Over the past 30 years, the electricity sector has gone through changes that help explain the current Brazilian government policy and legislative framework, as summarised below:

- prior to the 1990s, electricity activities were carried out by government companies;
- mid-1990s to 2003: owing to the fiscal crisis (government budget pressures) and high inflation in the 1980s and early 1990s, which impaired the ability of government companies to invest in infrastructure as well as to recover their costs through adjustments to tariffs, a new legislative framework was approved and implemented based on privatisation of government companies and facilities and free initiative to foster private sector investments. The Brazilian Electric Power Agency (ANEEL) was created;
- 2003 to 2012: after severe droughts while relying upon hydropower generation in the Brazilian electricity matrix, there was an energy supply crisis in the early 2000s. By the end of 2003, the government had implemented a major reform in the sector based on government planning for its expansion, energy supply reliability through the obligation of distribution companies (on behalf of their own consumers) and other consumers to have their demand 100 per cent contracted (or otherwise evidence self-generation to such effect), and on fair tariffs (the lowest possible tariff to comply with reliability standards); and
- 2012 until 2018: in 2012, the government approved specific rules for anticipation of renewal of generation, transmission and distribution concessions, which were to expire as early as 2015. The rules targeted lower future tariffs, through the indemnity of assets and investments still not amortised nor depreciated and allocation of electricity to distribution companies through a new system of quotas. As a result of involuntary exposure of distribution companies as well as a high increase in thermopower generation owing to consecutive years facing droughts, among other issues, the electricity sector companies and consumers ultimately faced high costs of electricity and delinquency or default rates that were unprecedented. Other changes were made to the legislative framework to deal with each specific issue and many agents of the sector sought protective measures in the courts, resulting in a 'judicialisation' of the sector.

More recently, as a result of excess of contracted power by distribution companies and also delays in construction of new power plants, ANEEL issued new regulations on mechanisms for adjustments to the contracted energy by way of bilateral agreements, as well as on new mechanisms to reduce the distribution companies' excess of contracted energy. Accordingly, assignment of amounts related to new-project power purchase agreements (PPAs) among themselves and competitive bids to terminate agreements were authorised. In addition, recent legislation enabled the termination of back-up energy agreements through a competitive mechanism, as well as the negotiation of agreements for the sale of excess contracted energy between concessionaires for electric power distribution services and independent power producers (IPPs) or free consumers, subject to ANEEL's regulations.

The federal government reviewed contributions made by players in the industry as part of a public consultation on legislative changes to correct problems and settle disputes in the sector, and a bill of law is under discussion in Congress. Although legislative changes were expected by the end of 2017 and early 2018, it is now hard to estimate the legislative schedule owing to presidential, state government and legislative elections in October 2018. In any event, the main principles of the legislative framework are not supposed to be modified.

The legislative framework is based on the Brazilian Federal Constitution of 1988, as amended, pursuant to which the federal government shall have the authority to operate, directly or through authorisation, concession or permission: electricity services and facilities; and the exploitation of watercourses for electrical energy purposes.

The Constitution was initially regulated by: Law No. 8987, dated 13 February 1995, which establishes rules for public service concessions in general; Law No. 9074, dated 7 July 1995, which set forth specific rules for restructuring and renewal of concessions; and Law No. 9427 dated 26 December 1996, which created ANEEL.

The 2003 reform was basically implemented by Provisional Measures issued by the president of Brazil, which were converted into Laws No. 10847 and 10848, both dated 15 March 2004. The government aimed at ensuring the supply of power at fair prices within a more reliable scenario as regards planning of demand and offer of power in the market through regulated auctions. Such reform went further into the unbundling of all levels of the supply chain (power generation, transmission, distribution and trading) by imposing limits on activities of distribution companies, while ensuring competitiveness in the generation and trading segments.

The Energy Research Company (EPE), a government-owned company, was created with the purpose of conducting technical studies and researches to give grounds for the planning of the sector by the Ministry of Mines and Energy (MME).

Two new trading environments were also created for commercialisation of power in the National Integrated System (SIN) - the regulated contracts environment (ACR) and the free contracts environment (ACL), replacing the former wholesale energy market.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The market is basically organised as a highly integrated system through transmission lines connecting generation facilities and consumers in all five regions of Brazil, covering most of its population and industries, forming the SIN. A few areas are not integrated and are deemed isolated systems, subject to specific features and regulations.

The SIN allows a mechanism for reallocation of energy whereby the hydrological risk is shared by hydropower generation companies, as a general rule. Such mechanism permits the sharing of upsides resulting from excess of hydropower generation as compared to the contracted energy as well as the downsides in case of shortfall, through the generation scaling factor (GSF).

Generation

There are basically three legal entities responsible for power generation: the ones holding a concession of public service; the IPP, which

receives a concession or authorisation to generate power for commercialisation; and the self-producer (SP), which receives a concession or authorisation to generate power for its exclusive use. Subject to applicable regulations, however, IPPs may also use the energy produced and SPs may sell the excess energy to qualified third parties.

Sale of power shall depend on the assurance of energy, which may be evidenced by the physical guarantee of the power plant or PPAs with other agents.

The National Electric System Operator (ONS), as the independent operator of the SIN, is responsible for determining when each generator shall generate power and provide to the system.

As to electricity sources, Brazil still relies upon hydropower as its main source of energy – approximately 65 per cent of the installed capacity and the power generation – with thermal power as an important supplementary source of energy, accounting for approximately 27.5 per cent of the installed capacity and 26 per cent of power generation. The participation of wind power plants is around 6.5 per cent of the installed capacity and 6 per cent of power generation, while solar power installed capacity is around 0.1 per cent but had an increase of more than 800 per cent in power generation between 2016 and 2017.

Transmission

Transmission facilities may be designed to integrate the SIN or be restricted to a certain area applicable to a specific distribution agent, or to a certain area applicable to a specific generation agent.

The transmission system integrating the SIN is also operated by ONS and public services related to the transmission system are remunerated through tariff policies approved by ANEEL based on the annual permitted revenue (RAP) of each transmission company.

Sale of power

Two trading environments apply for sale of power in the SIN:

- ACR – power sale and purchase transactions carried out between agents selling power (holders of concession, permission or authorisation to generate, import or commercialise power) and distribution agents, as purchasers, through public auctions conducted by the government, whereby the sellers compete by the lowest bid price (Brazilian real per megawatt (MWh)) and shall also observe terms and conditions established by applicable legislation and auction rules. The winning generation company enters into long-term (10–30 years, depending on the source) regulated power purchase agreements (ACR PPAs); and
- ACL – sale and purchase transactions carried out through bilateral agreements freely negotiated by both parties, subject to commercialisation rules and proceedings. As a mechanism to reduce exposures, the distribution companies were also recently authorised to sell power in the ACL, specifically in case of excess of power contracted to meet the demands of their market as discussed above.

Consumers that do not meet requirements to be eligible as 'special consumers' (which have a load from 500kW to 3,000kW and may purchase power from renewable sources) or 'free consumers' (load equal to or higher than 3,000kW) shall be deemed as 'linked consumers' and may purchase power only from the applicable distribution company.

Existing generation companies may participate in 'existing energy' auctions, by which they execute PPAs whose terms may vary from one to 15 years. Those companies may also choose to sell their plants' output within the free market, where electricity is freely traded among generation and trading companies, as well as free consumers and special consumers.

As a general rule, ACR PPAs may have the following modalities: quantity or availability. The costs related to hydrological supplying risks shall be assumed by the selling agents in ACR PPAs in the quantity modality, while purchasing agents shall assume such costs in ACR PPAs in the availability modality. Financial exposures in the short-term market shall be assumed by distribution agents, to guarantee the final electric energy repass to final consumers. As a result of consecutive droughts, the government has established specific rules for transfer of hydrological risk among users.

PPAs have to be registered with the Electric Power Commercialisation Chamber (CCEE), also created by Law No. 10848/2004, which consists of a non-profit, private entity authorised by the granting authority. PPAs are also subject to registration, approval or ratification by ANEEL, as applicable.

Compliance with contracted obligations is verified on a monthly basis by CCEE and failure to comply therewith shall result in penalties to be paid by the applicable CCEE agent (power producer, consumer, commercialisation agent or otherwise) in accordance with the Commercialisation Convention, which is a body of rules and procedures approved by ANEEL to regulate the commercialisation of power in Brazil.

The Commercialisation Convention provides for general rules on the commercialisation of power, such as, obligations and rights of agents of the electricity sector; financial guarantees; penalties; and rules and procedures for commercialisation, including those with respect to the international exchange of power. The Rules of Commercialisation and the Commercialisation Procedures have a more technical and operational nature, being proposed by CCEE and then approved by ANEEL.

The settlement among power generated, contracted and consumed in the ACR and ACL is carried out by CCEE in the short-term market and shall result in the settlement price (also known as PLD).

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Pursuant to Law No. 9074/1995, construction and operation of generation facilities shall be subject to:

- concession regime, upon previous bidding process: exploitation of hydraulic potentials and implementation of thermopower plants (except for nuclear power plants) above 50,000kW designed for public services; exploitation of hydraulic potentials above 50,000kW designed for independent power production; and use of public assets, exploitation of hydraulic potentials above 50,000kW, which are designed for exclusive use of the SP;
- authorisation regime: thermopower plants (except for nuclear) above 5,000kW designed for exclusive use of the SP and for independent power production; and small hydropower plants (PCHs) above 5,000kW and equal to or below 50,000kW designed for exclusive use of the SP and for independent power production; and
- registration with the granting authority: hydraulic potentials and implementation of thermopower plants equal to or below 5,000kW.

In 'new energy' project auctions, aside from PPAs, generation companies also bid for a regulatory licence to operate the power plant. While hydropower plants with an installed capacity above 50MW are required to participate in those auctions to obtain the corresponding concession (whose granting must be preceded by a public bid and shall be for a period of up to 35 years), power plants subject to authorisation may obtain the respective regulatory licence without the need for an auction.

In addition to regulatory approvals, construction and operation of power plants shall also be subject to other permits and licences, including with respect to the protection of the environment and cultural heritage, among others.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The legislative framework grants open access to transmission and distribution systems for the different agents supplying or consuming power.

Such access shall be subject to charges owing to transmission or distribution costs involved (TUST and TUSD tariffs, respectively), and may require capital expenses by the accessing party, as it would be the case of transmission facilities of exclusive interest of the power producer.

The general terms and conditions for the contracting of access to transmission or distribution systems are regulated by ANEEL, as discussed in question 10.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The government has implemented different policies over time to foster alternative energy sources.

As a response to the energy supply crisis in the early 2000s, Law No. 10438, dated 26 April 2002, contemplated incentives for alternative sources in the electricity matrix. The law included:

- creation of the Alternative Energy Source Incentive Programme (PROINFA) aimed at the construction of 3,300MW of installed capacity, through a feed-in tariff mechanism;
- creation of the Energy Development Account (CDE) to foster competitiveness of power produced by wind plants, thermo solar, photovoltaic, small hydroelectric plants, biomass, other alternative sources and natural gas; and
- a waiver for IPPs that generate power exclusively from wind, solar, biomass, PCHs and qualified cogeneration with respect to the obligation to apply at least 1 per cent of net operational revenues per year in research and development.

In addition, specific energy auctions were used to foster alternative sources, including the Reserve Energy Auction and the Alternative Sources Auction.

Pursuant to Law No. 9427/1996, as amended, ANEEL shall also stipulate a discount of at least 50 per cent (or 80 per cent in case of certain solar plants) to the TUST or TUSD charged from 'incentivised sources' (small hydroelectric plants, solar, wind power, biomass and qualified cogeneration, provided that they do not exceed the applicable capacity).

The concept of special consumers established a lower threshold (load higher than 500kW) as compared to free consumers to allow purchase of power from IPPs and SPs that generate power from small hydroelectric plants with capacity lower than 5,000kW or solar, wind or biomass plants with capacity lower than 50,000kW.

ANEEL also regulated in 2012 the net metering mechanism for distributed generation, which plays an important role in increasing the use of photovoltaic solar generation in Brazil, among other alternative energies. Such regulation was also recently amended to level the distributed generation of hydropower plants with other sources at a maximum of 5MW and further regulatory changes are expected in 2019 upon public consultation currently being conducted by ANEEL.

The 2026 Energy Plan published recently by EPE reflects relevant growth of wind and solar plants installed capacity. In the case of solar photovoltaic plants, more than 2,500MW have been contracted through Reserve Energy Auctions since 2014. Although solar energy installed capacity is still not significant, it is expected to maintain its growth.

Renewable energy sources are also entitled to some special credit lines from the Brazilian and the Northeast public banks, the National Bank for Economic and Social Development (BNDES) and the Brazilian Northeast Bank (BNB).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As discussed, the Brazilian electricity matrix is already mostly renewable as hydropower and wind power are responsible for more than 70 per cent of the installed capacity.

Environmental concerns, on the other hand, limit Brazil's ability to expand its hydropower generation capacity with large reservoirs. As a result, large hydropower plants, like Belo Monte, Jirau and Santo Antônio, are run-of-the-river power plants.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Law No. 9991 dated 24 July 2000 established mandatory investment in research and development projects as well as energy efficiency.

Based on this legislation, ANEEL recently approved 11 proposals for research and development projects submitted to ANEEL Public Call for Strategic Research and Development Projects No. 21/2016, which aims at developing projects for the insertion of electricity storage systems in the electricity sector. Twelve other proposals were approved with recommendations.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Brazil currently has two nuclear reactors in operation (Angra 1 and Angra 2), representing approximately 1.3 per cent of the installed capacity. A third plant is under construction (Angra 3).

Pursuant to the Brazilian Federal Constitution of 1988, the federal government shall have the power to operate nuclear energy services and exercise state monopoly over research, prospecting, mining, enrichment and reprocessing, industrialisation and trade in nuclear ores and their by-products. Therefore, private investors are not allowed to participate in nuclear power in Brazil.

In 1997, nuclear operations of Furnas Centrais Elétricas SA merged with Nuclebrás Engenharia SA (Nuclen) (both government companies of the electricity sector) to form Eletrobrás Termonuclear SA (Eletronuclear), a new subsidiary of Centrais Elétricas Brasileiras SA (Eletrobrás) responsible for construction and operation of nuclear power plants in Brazil.

Although nuclear power seems to continue to hold a place in the energy plans of Brazil, it appears that further expansions would be pursued only in the long term, rather than in the mid-term.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Transmission facilities that are contemplated in the SIN are subject to concession of public service upon previous public bidding.

On the other hand, transmission facilities designed for international interconnections and connected to the basic network are also subject to previous execution of the applicable international treaty.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Law No. 9074/1995 and Law No. 9648/1998 granted open access to the transmission and distribution systems for different agents supplying and consuming electricity.

In this regard, ANEEL regulations establish general conditions for obtaining access to the transmission system, including contracts for connection to and use of the system. The power generator requesting access to the transmission system shall carry out technical and economic studies, and undertake projects and activities, related to its facilities of exclusive use (if any) and proper access to the system. The conditions for access shall be consolidated in the access report issued by ONS.

Such ANEEL regulations also set forth standardised clauses for contracts to be entered into with transmission companies being accessed and ONS (contracts for the use of the transmission system and for connection to the transmission system), as well as provisions with respect to charges for connection to and use of the transmission system.

Transmission facilities of exclusive use of an agent may also be accessed by another interested agent or consumer that complies with the applicable legal and technical requirements and specific regulation issued by ANEEL.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

EPE shall prepare studies required for the transmission system expansion plans on a short-, mid- and long-term basis. Such expansion is a

result of auctions called by the government for construction and operation of transmission facilities.

Pursuant to Law No. 9648/1998, ONS shall also propose the expansion of transmission facilities to the granting authority.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The transmission system integrating the SIN is operated by ONS and each transmission agent must enter into specific agreements with ONS to ensure that the operation of its facilities will occur in accordance with ONS's determinations.

Public services related to the transmission system are governed by ANEEL tariff policies, which basically consist of the stipulation by ANEEL of a RAP to be perceived by each concessionaire or permissionaire by means of the TUST to be paid by each agent that accesses the transmission grid. In order to determine the TUST, ANEEL shall consider the results of the applicable transmission public auctions conducted by the government and the RAP to be paid to the transmission agents as from the commencement date of operation of their respective facilities. RAP is subject to periodical revisions in accordance with each applicable concession agreement.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Both ONS and ANEEL are responsible for the reliability of the transmission grid.

Pursuant to Law No. 9648/1998, ONS is responsible for:

- the planning and programming of operations and centralised dispatch of power generation, envisaging optimisation of interconnected systems;
- the supervision and coordination of operational centres of electric systems;
- the supervision and control of the operation of electricity systems for national and international interconnections;
- the contracting and administration of transmission services and the respective access conditions;
- proposing to the granting authority the expansion of transmission facilities; and
- proposing rules for the operation of transmission facilities of the SIN, which are approved by ANEEL.

ANEEL is responsible for regulation and overview of production, transmission, distribution and commercialisation of power, in accordance with policies and guidelines established by the federal government.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution is subject to concession of public services granted by the granting authority based on previous public bidding.

The federal government has recently approved the renewal of distribution concessions under Law No. 12783 of 11 January 2013, as regulated by Decree No. 8461 of 2 June 2015.

Concessionaires, permissionaires and companies authorised to render public services of distribution which act within the SIN may not carry out other activities in the electricity sector, albeit with a few exceptions.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Law No. 9074/1995 and Law No. 9648/1998 granted open access to distribution systems for the different agents in the supply and consumption of power.

Such access shall be granted upon payment of TUSD, which is stipulated by ANEEL. ANEEL also establishes general conditions for contracting of access to the distribution system.

The power generator requesting access to the distribution system shall carry out technical and economic studies, and undertake projects and activities, related to its facilities of exclusive use (if any) and proper access to the system.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

ANEEL regulations establish the periodical tariff revision based on concessions contracts, to be carried out considering changes in the costs structure and market of distribution agents, as well as tariff levels observed in similar companies, in a national and an international context, and stimulations to the efficiency and lowest bid prices.

ANEEL regulations also approve the Procedures for Distribution of Electric Energy in the National Electricity System, which set forth rules and obligations for distribution agents envisaging the planning of expansion of the distribution network, among other matters.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

ANEEL is the agent responsible for determining rates and terms for provision of distribution services based on applicable concession agreements.

Distribution tariffs are subject to annual adjustments as well as to periodical revisions based on certain components of the tariff: price of electricity; transmission cost; sector charges; cost of the distribution activities; inflation; and productivity and scale gains.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale and purchase of power shall involve agents that are concessionaires or permissionaires and authorised for generation, commercialisation companies, importers, exporters and free or special consumers.

The commercialisation activity may be carried out only upon obtaining the necessary authorisation from ANEEL and adherence to CCEE in accordance with applicable regulations. Import and export activities shall also be subject to authorisation of the MME.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Power sales in the SIN shall occur either in the ACR – between the applicable generation agents and distribution companies, or in the ACL – between generation or commercialisation agents, importers, exporters and free or special consumers.

The price in the ACR is determined by the applicable auction, while the price in the ACL is freely negotiated by both parties, with due regard to certain commercialisation rules and proceedings.

The tariff charged by distribution companies shall be subject to periodical adjustments and revisions based on ANEEL regulations.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The price in the ACR is determined by the applicable auction conducted by the government, whereby sellers compete by the lowest bid price per MWh and observe specific terms and conditions established by applicable legislation and auction rules, as discussed above.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Distribution companies are subject to public service obligations, including: to render adequate services for full requirements of users, as established by law, applicable rules and the respective contract; and to provide regular, continuous, efficient, safe, up-to-date general services rendered courteously under moderate charges.

Free consumers that exercise the option to purchase power from other suppliers, rather than the applicable distribution company, may return to the distribution company and be subject to a regulated tariff, provided that such free consumers shall provide a five-year advance notice to the concessionaire, permissionaire or authorised distribution company, except if such term is reduced by the distribution company.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The following governmental authorities are in charge of regulatory policy:

- MME;
- the Brazilian Energy Policy Committee (CNPE);
- ANEEL;
- the Power Sector Monitoring Committee (CMSE); and
- the Energy Research Company (EPE).

Certain supervision activities may also be delegated to state regulatory authorities.

In addition to governmental authorities, ONS and CCEE also play an important role in implementation of the regulatory policy of the sector.

23 Scope of authority

What is the scope of each regulator's authority?

MME is the ministry that represents the federal government as granting authority, in charge of issuing regulations and granting concessions and authorisations.

CNPE is formed by ministries of state and representatives of civil society. Its main function is to propose to the president of Brazil national policies and specific measures to:

- promote the rational exploitation of energy resources;
- ensure the supply of energy inputs to remote areas or those difficult to access; and
- establish guidelines for specific programmes, such as the usage of energy sources, among others.

ANEEL is the regulatory agency, related to the MME, responsible for regulation and overview of production, transmission, distribution and commercialisation of power, in accordance with policies and guidelines established by the federal government. ANEEL shall, among other things:

- promote, by delegation of powers, based on policies and guidelines approved by the granting authority represented by the MME, bidding procedures for hiring concessionaires and authorised entities of public services for the production, transmission and distribution of power and the granting of concessions to exploit hydraulic potential;
- manage concession agreements and authorisations for public services of electricity, as well as agreements for the concessions of use of public assets; and
- resolve, at an administrative level, disputes between concessionaires, authorised entities, IPPs and SPs, as well as any other disputes between agents and their consumers.

Moreover, ANEEL has the authority to intervene in the concession for electric power services to ensure its adequate performance and compliance with contractual, regulatory and legal rules. The intervention shall be of one year, which may be extended only once, up to two more years, subject to ANEEL's discretion. Concessionaires of electric power services are not subject to judicial and extrajudicial recovery, as provided by the Brazilian Bankruptcy and Reorganisation Law (Law No. 11,101, of 9 February 2005), except after the termination of the applicable concession.

ANEEL has also issued joint resolutions with other regulatory agencies, including the Brazilian Petroleum, Natural Gas and Biofuels Agency (ANP) and the Brazilian Telecommunications Agency (ANATEL) to regulate sharing of infrastructure among companies subject to such authorities.

CMSE is responsible for the permanent monitoring and analysis of the continuity and safety of the electricity supply. One of its main functions is to follow the development of generation, transmission, distribution, commercialisation, import and export activities related to electricity, natural gas and petroleum.

EPE is a government-owned company that prepares studies and undertakes research to underpin planning in the energy sector. EPE also plays an important role as regards auctions in the sector.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The MME is a body of the executive branch subordinated to the president of Brazil.

CNPE is formed by ministries of state, as well as representatives of civil society, and is chaired by the Minister of Mines and Energy.

ANEEL was created as an independent special regulatory agency related to MME. Members of the board of directors of ANEEL are appointed by the President of Brazil and must be approved by the Senate.

CMSE was created as a public body coordinated by the executive branch and is chaired by the Minister of Mines and Energy. It has the following composition: four representatives of the MME; and members of ANEEL, the ANP, CCEE, EPE and ONS.

EPE is a federal state-owned company related to the MME. The board of directors of EPE is composed of: one chairman appointed by the Minister of Mines and Energy; the chief executive officer; one member appointed by the Minister of Planning, Budget and Management; and (iv) three other members appointed pursuant to the terms of its regulations.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

ANEEL may impose certain penalties on companies that violate rules of the electricity sector, through the relevant punitive administrative proceeding, which is governed by ANEEL Resolution No. 63 of 12 May 2004.

An appeal to the board of directors of ANEEL may be filed against the infraction notice imposing the penalty. The board may confirm, change, annul or revoke, either totally or partially, the imposition of the penalty.

The development of the appeal in the ANEEL administrative procedure shall follow specific procedures established by applicable regulation to assure the party the right to defend itself against the penalties.

In any event, the agents may ultimately appeal to the courts as the law shall not prevent the judiciary branch from analysing any damages or threat to rights pursuant to the Constitution.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

ANEEL and the Administrative Council for Economic Defence (CADE) are the responsible bodies.

ANEEL shall establish restrictions, limits and conditions for companies, economic groups and shareholders with respect to the transfer of concessions, permissions and authorisations aiming at allowing actual competition among agents and prohibit economic concentration in electricity services and activities.

CADE is the Brazilian competition authority with jurisdiction to review mergers in general under the provisions of Law No. 12529 of 30 November 2011. The request for approval of mergers is reviewed by the General Superintendency (SG) of CADE. SG may approve the transaction without restrictions or present an objection to the board of CADE, in case SG understands that the transaction must be rejected, be approved with restrictions or if there are no conclusive elements to determine the effects of the applicable transaction in the market. If requested by SG, the board of CADE may fully approve the transaction, reject it or partially approve it, in which case it will determine restrictions to be observed as conditions to validate the transaction.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Law No. 8987/1995 contemplates that the granting authority may terminate the transaction if the transfer of the concession or the transfer of the corporate control of the concessionaire is not submitted to its previous consent. For the purposes of obtainment of such consent, the envisaged new concessionaire or controller of the concessionaire shall: observe requirements related to technical, economic and financial capacity, as well as legal and tax requirements necessary for the service; and agree to perform all clauses of the concession contract and applicable legislation in effect.

The proceedings to be observed by concessionaires, permissionaires and authorised agents for request of prior consent from ANEEL are regulated by ANEEL Resolution No. 484 of 17 April 2012. Such Resolution provides an indicative term of at least 60 days for ANEEL to analyse and resolve on the prior approval for the transfer of control.

Under Law No. 12529/2011, parties to a transaction must submit to CADE any mergers, acquisitions and other transfers of control, in which, cumulatively: at least one of the economic groups involved in the deal registered gross annual turnover or total trading volume in Brazil equal to or above 750 million Brazilian real, in the year before the deal; and at least another economic group involved in the transaction has posted an annual gross turnover or overall volume of business in Brazil equal to or above 75 million real, in the year before the deal.

Notifications to CADE must take place prior to closing, and consummation of a transaction cannot take place before it is approved by CADE, otherwise declaration of annulment of the transaction and the imposition of sanctions may apply.

Transactions may be submitted under a fast-track procedure or under an ordinary procedure. Under a fast-track procedure, CADE has a term of 30 days to review the request (a period of 15 days shall be added to such term for potential appeals or request for review by CADE's board). Under an ordinary procedure, CADE has 240 days, which can be extended for no more than 90 days, to analyse transactions.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Anticompetitive and manipulative practices in the electricity sector are also regulated and monitored by ANEEL. Pursuant to Law No. 9427/1996, ANEEL shall observe compliance with competition protection legislation, monitoring market practices of agents in the electricity sector.

ANEEL has entered into certain agreements and commitment terms with the Secretary of Economic Law of the Ministry of Justice, the Secretary of Economic Monitoring of the Ministry of Finance and CADE. In addition, ANEEL shall assist such governmental bodies and may prepare opinions or technical notes to instruct them in assessing and punishing companies that violate laws of free competition.

CADE is also responsible for monitoring free competition in the market and is able to investigate and decide, ultimately, on competition matters. In case of violation of Law No. 12529/2011, CADE may apply the following penalties, among others: fines; registration of the wrongdoer with the National Registry for Consumer Protection; and the wrongdoer be prohibited from carrying on trade on its own behalf or as representative of a legal entity for a period of five years.

The General Controller of the Federal Government (TCU) and the General Controller of the State Government (TCE) are active in the review of the application of public funds. TCU has engaged in reviewing potential anticompetitive acts, as cartels, in the scope of public biddings of the federal government. TCU may impose a fine on wrongdoers in the amount of 100 per cent based on damages caused to the federal government. TCEs are active in the review of the application of state funds and may apply sanctions to cartelists that acted in state public biddings.

The Ministry of Transparency, Oversight and Comptroller's General Office (CGU) may also investigate and impose sanctions on cartels in the scope of public biddings promoted by the federal government. The main penalties that may be imposed by CGU are fines and debarment.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The definition of the wrongful acts that may be considered harmful to competition is provided by Law No. 12529/2011, and is as follows, regardless of fault:

- to limit, restrain or in any way harm open competition or free enterprise;
- to control a relevant market of a certain product or service;
- to increase profits arbitrarily; and
- to abuse a dominant position.

Such legislation also establishes behaviour that characterises anticompetitive practices, such as:

- agreeing, combining, manipulating or arranging with competitors, in any way;
- promoting, obtaining or influencing the adoption of a uniform or concerted business conduct among competitors;
- limiting or impairing access to the market by new companies;
- posing difficulties to establishment, operation or development of a new competitor or of a supplier, buyer or financier of goods or services;
- imposing on distributors, retailers and representatives of goods or services specific retail prices, discounts, payment conditions, minimum or maximum volumes, profit margins, or any other marketing conditions related to their business with third parties thereof; and
- discriminating against purchasers or suppliers of goods or services by establishing price differentials or discriminatory operating conditions for the sale or performance of services.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

According to Law No. 12529/2011, three types of procedure may be initiated to analyse alleged anticompetitive practices: preliminary administrative inquiry; administrative inquiry into anticompetitive practices; and administrative proceedings. The first two procedures aim at gathering data in relation to the alleged practice, while the latter may result in penalties on defendants (eg, at the end of the first two proceedings, CADE may initiate a formal administrative process, in which penalties may be imposed on the parties).

Fines may vary from 0.1 per cent to 20 per cent of the gross revenues of a given company, group or conglomerate, in the field of the

Update and trends

As discussed in question 1, the federal government reviewed the contributions made by players in the electricity sector as part of a public consultation on legislative changes to correct problems and settle disputes in the sector, and a bill of law, which envisages a new reform in the sector, is currently under discussion in Brazilian Congress. Therefore, relevant legislative changes may be expected in the near future. Such legislative changes may impact issues discussed in this chapter, including with respect to incentives for renewable sources and types of electricity products (quantity of power, availability of power plant and assurance of energy).

The federal government was also considering the privatisation of Eletrobrás, which is a mixed-capital company created by Law No. 3890-A dated 25 April 1961 and is a major participant in the electricity sector, either directly through its subsidiaries or together with the private sector in joint-venture arrangements. However, the Federal Supreme Court recently granted an injunction to prevent the federal government from selling shares of government-controlled companies or their subsidiaries without prior approval from the Brazilian Congress, except if such sale of shares does not involve a transfer of control.

In addition to such injunction granted by the Federal Supreme Court, other courts have suspended divestment transactions conducted by government-controlled companies. Notwithstanding that, four distribution companies (Companhia Energética do Piauí – CEPISA, Companhia de Eletricidade do Acre - Eletroacre, Centrais Eleétricas de Rondônia SA - CERON, and Boa Vista Energia SA) were transferred in public auctions in June and August 2018. Amazonas Distribuidora de Energia SA – Amazonas Energia is expected to be auctioned in the near future.

Such divestments and privatisations, if fully implemented, will certainly represent a game changer for the electricity sector in Brazil.

business activity, in the year prior to the beginning of the investigation. CADE may also impose, on members of management directly or indirectly liable for their company's violation, a fine varying from 1 per cent to 20 per cent of the fine imposed on said company. Further, CADE may impose a fine on other individuals or public or private legal entities as well as associations (non-corporate), that may vary from 50,000 to 2 billion reais based on the cartel investigation.

CADE may also impose other penalties, such as: a half-page publication of the summary of the decision in newspapers; ineligibility for official financing or participation in governmental bidding procedures; and sales or transfer of company assets.

Penalties for antitrust violations shall be calculated based on the following mitigating and aggravating factors:

- the severity of the offence
- the offender's good faith;
- advantages obtained or envisaged by the offender;
- actual or threatened occurrence of the offence;
- the extent of damages or threatened damages to open competition, the Brazilian economy, consumers or third parties;
- the negative economic effects on the market;
- the offender's economic status; and
- recidivism.

TCUs and the TCEs may impose a fine on cartelists in the amount of 100 per cent based on damages caused to the federal or to the state government, under their jurisdiction.

CGU may impose the following penalties:

- a fine, as provided in the bid announcement or in the contract itself;
- temporary suspension from participating in public bidding and prohibition from contracting with the government (and government-controlled entities), for up to two years; and
- statement of lack of good standing to bid or contract with the government (and government-controlled entities) while the reasons for punishment persist or until such time as the contractor is considered eligible to participate in public bidding by the same authority that imposed the sanction.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Except with respect to nuclear activities, there are no specific requirements or limitations in the electricity legislative framework for acquisition of interests by foreign companies in Brazilian companies carrying out activities in such sector, as compared to requirements otherwise applicable to Brazilian purchasers.

In any event, certain activities shall be granted only to companies organised under Brazilian laws, with headquarters and management located in Brazil. Accordingly, foreign investors shall incorporate a special purpose company under Brazilian laws to have the applicable concession, permission or authorisation granted. If Brazilian and foreign companies bid jointly as a consortium, the Brazilian company shall be the leader of the consortium.

Foreign companies may also be required to have a legal representative in Brazil with powers to receive service of process and to represent them in judicial and administrative proceedings.

Also, as a matter of process, foreign documents (which may be necessary for review and approval of transactions by applicable authorities) must be notarised and legalised with the Brazilian consulate or apostilled abroad before being sent to Brazil. To be presented to Brazilian authorities, such documents shall also be translated by a certified translator and, if required, registered in Brazil.

Foreign companies (or Brazilian companies controlled by foreign companies) are otherwise subject to restrictions in the ownership and lease of rural land, which must be taken into consideration when developing any project.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Transmission facilities destined to international interconnections granted as from 1 January 2011 and connected to the basic grid shall be subject to concession of public service of transmission by means of public bidding in the modality of competition or auction and shall also be preceded by an international treaty.

Transmission facilities for international exchange of power granted until 31 December 2010 may be compared, for technical and commercial effects, to concessionaires of public service of transmission, in accordance with specific regulation issued by ANEEL.

According to Decree No. 7246, dated 28 July 2010, the definition of transmission facilities shall be established by a specific ordinance issued by MME, while ANEEL shall carry out, either directly or indirectly, the public bidding for implementation of such transmission facilities.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

ANEEL Resolution No. 442 dated 26 July 2011 establishes the provisions related to transmission facilities for international interconnections that connect to the basic grid of SIN. In the case of facilities that result from public bidding for public service of transmission destined to international interconnections, the RAP is established by public bidding.

With respect to transmission facilities granted until 31 December 2010, the RAP shall be calculated based on a comparison between such facilities and interconnection transmission facilities granted as a result of public bidding with due regard to: establishment by ANEEL of the base of remuneration of facilities to be compared; use of the weighted average capital cost established for periodic review of revenues of transmission concessionaires, applicable on the date of the comparison; and use of operational costs established for periodic revision applicable on the date of comparison.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

ANEEL controls transactions to be performed between concessionaires, permissionaires, authorised entities and related companies, applying restrictions or even prohibitions.

Transactions with related parties shall be established strictly on an arm's length basis, without any disproportionate burden to the parties. ANEEL regulations establish various criteria to be adopted to verify if the referred proportionality is complied with or not. Specific rules apply in connection with the following types of agreement between related parties, among others: acquisition of technology; services agreements; loan agreements; and infrastructure sharing agreements. The transaction may be either subject to prior approval by ANEEL, prohibited or deemed previously approved if in compliance with applicable requirements.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

According to ANEEL regulations, the following conduct with respect to related parties transactions are considered an infraction subject to a fine:

- failure to request ANEEL approval, when required according to regulations, as well as the implementation of such transactions before obtaining ANEEL approval;
- implementation of agreements that do not comply with general and specific criteria described in a specific ANEEL regulation; and
- execution and implementation of an agreement different from the version approved by ANEEL.

The fine may be converted into a warning, provided that the violator has not been fined for a similar infraction during the previous four years; and consequences of the infraction have a low offensive potential.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

In Costa Rica the whole electric market is regulated as a public service. Supply electricity is regulated in all their four phases: generation, transmission, distribution and commercialisation.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Distribution and commercialisation is in the hands of eight companies; two of them are government-owned (ICE and CNFL), two are municipal-owned (JASEC snd ESPH) and the other four companies are cooperative electric companies founded more than 50 years ago with the help of the United States Agency for International Development under the same scheme of electricity cooperative companies in the United States.

ICE (a government company) has a monopoly of the transmission networks of Costa Rica.

In the generation phase, private companies have a cap in the generation market; only 15 per cent of the whole Costa Rican generation system can be in the hands of private companies under Build-Own-Operate (BOO) contracts to sell energy to ICE, and there is a cap of another 15 per cent for private companies wishing to develop Build-Own-Transfer (BOT) projects with ICE. At the end of 2017, BOO contracts had 9 per cent of total generation and BOT contracts had 10 per cent. This means there are legal opportunities for more projects.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The eight distribution companies may develop their own generation projects. Those projects can be developed by one distribution company or between any number of them. Private companies can also be part of the project.

Private investors wishing to develop a project to sell energy to ICE must obtain the following permits:

- any private company that wishes to develop an energy generation project to sell energy to ICE must first obtain a permit from ICE called an 'elegibilidad', which is basically a preliminary review to check that the project is possible from the legal, finance and technical point of view, like a pre-feasibility;
- from an environmental point of view, a generation project needs an environmental viability permit from the Environmental Secretary (SETENA). For this process, there is an audience in the place where the project will be built and it is usually hydroelectric projects that encounter some social opposition.
- if a company has an environmental viability permit from SETENA, and the project is a hydroelectric plant, the project then needs a 'water' concession from the Water Office of the Environmental and Energy Ministry (MINAE), which allows the company to use the hydraulic force of the water (liters of water per second with a specific meter drop) that also determines a specific energy potential.
- the last permit is the public service concession given by the Public Services Regulatory Authority (ARESEP), if the project already had obtained the previous permits and also after a public hearing to present the project.

These are the permits needed to sign a contract to sell energy to ICE, but the selection of a project depends on the willingness of ICE to start the process of incorporating a new generation plant, for example: ICE request one eolic generation project of 20MW and companies that have an eolic 'elegibilidad' could offer a price per kWh lying within a 'tariff band' that the ARESEP has previously approved. The project with the best price wins the contract.

In 2017, ICE published a new Expansion Plan that does not include any new private projects scheduled for the coming years, because the Plan focuses on a new hydroelectric project of 600MW that, according to ICE, could be complete by 2026. However, in August 2018, ICE authorities were considering stopping the new project until 2024 because Costa Rica has enough renewable generation.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

ICE has a monopoly on transmission networks in Costa Rica.

Any generation project bigger than 5MW needs to connect to the transmission network in a substation and this means it will need authorisation from ICE.

A generation project smaller than 5MW could connect to a distribution company network if the distribution company so permits.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Costa Rica has had a renewable energy policy for several decades.

Currently Costa Rica produces more than 99.67 per cent of its electricity from renewable energy sources. For several weeks in the rainy season Costa Rica produces 100 per cent of the electricity from renewable sources.

Costa Rica uses fuel power plants only when it needs to back up the system but not as an ordinary source of electricity.

Most renewable energy comes from hydroelectric plants (77 per cent).

Eolic projects have grown rapidly in the past years, now with 11 per cent of the electricity coming from wind.

Solar projects should grow in the future: ICE has 1MW installed while Coopeguanacaste has 5MW installed.

According to a recent government study, the grid in Costa Rica has the potential to install 791MW of solar generation and 371 of wind generation in the next six years.

Any renewable generation equipment has tax exceptions.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Costa Rica has had a renewable energy policy for several decades.

The goal is to improve the 99.67 per cent renewable electricity production.

Even more important is the process of moving transportation to electric solutions instead of fuel options. At the end of 2017, Congress approved a Law to create incentives for reaching 100 per cent electric vehicles.

If Costa Rica is able to reduce carbon emissions in transportation, within the next decade the country could be carbon-neutral.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The National Energy Plan of Costa Rica (2015–2030), which MINAE approved in 2015, has a specific objective of analysing electricity storage possibilities for use of renewable energy in times of higher consumption. There is huge potential to integrate renewable generation with storage facilities.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Nuclear energy is not renewable energy and it is not considered under the National Energy Plan of Costa Rica (2015–2030).

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

ICE has a monopoly on transmission networks of Costa Rica. Only ICE construct and operate transmission networks. Costa Rica does not have an open transmission market at this moment.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Only ICE may construct and operate transmission networks.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

ICE collects a regulated tariff, per every kWh that needs to be transmitted in the transmission network, and with that income ICE has to develop the network.

Only distribution companies can use the transmission network. This means that private companies cannot have access to the transmission network to generate energy in one place and consume that energy in another.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The cost of the transmission network is reviewed by the ARESEP. The quality standard is set also by the regulatory authority.

The tariff of the transmission service is calculated by the sum of all the costs that ICE has incurred to provide that service.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Because only ICE may provide the service, ICE has to maintain that the network is always available to other distribution companies.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The entire Costa Rica territory is distributed by the current eight distribution companies. These companies have a formal concession (permits) from MINAE.

There is no part of the country that does not have a distribution concession.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

There is no part of the country that does not have a distribution concession, so it is currently not possible to request a distribution permit.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

In 1974, the Costa Rican electricity system covered 50 per cent of the population of the country, but 40 years later, in 2014, the system covered 99.4 per cent of the population of the country. In other words, the distribution network covers almost the entire population, so the expansion of the distribution network is now focused on improving that excellent percentage.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Every one of the eight distribution companies collect a regulated tariff. The cost of the distribution network is reviewed by the ARESEP.

The tariff of the distribution service is calculated by the sum of all the costs that a specific distribution company has. Because of that, the prices of the government companies (ICE and CNFL) are currently 30 to 35 per cent higher than other distribution companies such as JASEC, ESPH, Coopelesca or Coopeguancaste.

The quality standard is also set by the regulatory authority.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Only the eight distribution companies that have concessions over Costa Rica territory may sell electricity to domestic, commercial and industrial customers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Power sales have a tariff regulated by the ARESEP. The tariff for power sale is the same as the tariff for the distribution service.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Wholesale power has a special tariff in Costa Rica for those industrial companies (cement, microchips, aluminium, glass) that require high

Update and trends

In the Costa Rican Parliament, there are groups that advocate for a more open electricity market with more space for private projects. The higher costs of recent hydroelectric projects built by government companies (ICE and CNFL) challenge the regulatory model that probably should evolve.

Electric transportation will need more renewable energy (solar and wind) in order to maintain the 99 per cent renewable electricity production that Costa Rica has reached but first the electric fleet has to rise during the next five years before we see significant growth in new generation projects.

Disruption of the electricity sector is closer, for Costa Rica and for the world. In five or seven years, electricity storage could change the way the market has been working for decades. It is a huge opportunity but a big challenge as well for all the companies in this sector.

At this moment the movement in the internal market is in the hands of distribution generation because every month more commercial and industrial companies are installing solar panels to produce their own energy at a lower cost and this process could grow bigger and faster during 2019.

electricity consumption and that are able to obtain electricity directly from the transmission networks.

These kinds of sales of power are not considered distribution sales, but are considered directly generation sales. The sole provider of this wholesale tariff is ICE.

The tariff for the wholesale of energy is also regulated by the ARESEP but not according to the cost of the energy because it must subsidise the price, for example, when the other generation tariffs go up the wholesale tariff does not rise. The wholesale price is currently between US$0.05 and US$0.06 during the day and US$0.04 during the night.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity utilities are considered public services that are regulated from the economic and quality point of view.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

MINAE and ARESEP are the authorities determining regulatory policy in the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

MINAE is the authority in charge of public policy on energy in Costa Rica. It is also in charge of the concessions (permits) of generation and distribution of energy and, via its Water Office, of the hydroelectric use of the waters. MINAE is also in charge, via SETENA, of environmental construction viabilities of any kind of generation project.

ARESEP is in charge of the quality of the electricity that costumers receive and of the economic regulation (tariffs) of all the electricity prices (generation, transmission, distribution and commercialisation).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ARESEP is considered very independent. The General Regulator is the head of the ARESEP and is chosen by the President of Costa Rica, but needs to be approved by the Parliament as well. ARESEP also has a board of directors that is chosen by the President and needs to be approved by the Congress.

The head of MINAE is the Ministry, and for the energy sector there is also a Vice Minister of Energy, both chosen at the discretion of the President.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

ARESEP and MINAE decisions can be appealed, but their decisions are rarely revoked.

These decisions can be also challenged in a judicial court, under a formal trial to present the arguments to revoke a decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

In Costa Rica the acquisition of electricity utilities happens at generation levels, for example, when a distribution company buys a generation plant that was owned by a different private company.

In these cases, during the acquisition process the companies send an information letter to the Competition Government Office, which is part of the Ministry of the Economy.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Transfers of stocks of private generation companies are not under competition restrictions, because:

- Costa Rica does not have an open electricity market; and
- ICE and its subsidiary (CNFL) have more than 70 per cent of the consumption market, which means that the dominant company is also a government company.

Prices are regulated and do not depend on the market share.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on market share.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on market share.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on the market share.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Private companies that sell electricity to ICE, according to Law 7,200, must always leave a 35 per cent share of the company in the hands of Costa Rican citizens. It means that a foreign company may hold only 65 per cent of the shares in a private generation company.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

ICE has a monopoly on transmission networks in Costa Rica. Only ICE may construct and operate transmission networks. Costa Rica does not have an open transmission market.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

ICE has a monopoly on transmission networks in Costa Rica. Only ICE may construct and operate transmission networks. Costa Rica does not have an open transmission market.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

There are no restrictions on transactions between electricity utilities and their affiliates.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

There are no restrictions on transactions between electricity utilities and their affiliates.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The power industry is of special (national) importance in Croatia. The general guidelines of Croatia's government policy regarding the electricity sector are set out in the Strategy of Energy Development (Official Gazette No. 130/09) (the Strategy). At the time the Strategy was adopted, Croatia's main aim was to adjust and prepare the energy sector in general, which includes the electricity sector, for accession into the EU and participation in the single EU market, but at the same time to preserve Croatia's national interest. The strategy is to achieve a balance between the liberalisation of the electricity market and necessary government intervention, to enhance energy efficiency and to use more alternative energy sources and technologies that protect the environment. Croatia's further aim is to achieve security of supply (especially in import of electricity), competitiveness in the international market and sustainable energy development.

In the meantime, the global crisis affected the energy sector, which resulted in a volatile market and prices and lack of planned investments. Consequently, although the main principles remain, the Strategy is not entirely in line with the current market and some of its goals will be hard to attain. As a result, the government has adopted several national action plans modifying aims set by the Strategy, implementing specific measures for the realisation of EU and national energy targets.

Furthermore, on 1 July 2013 Croatia became a member of the European Union and joined the EU energy market. One of Croatia's obligations as part of its accession process was the incorporation of the EU Third Energy Package. Thus, in 2012 and 2013, new legislation was adopted governing the electricity sector, later amended in line with EU legislation: the Energy Act (Official Gazette Nos. 120/12, 14/14, 95/15, 102/15 and 68/2018), the Energy Activities Regulations Act (Official Gazette Nos. 120/12 and 68/2018) and the Electricity Market Act (Official Gazette Nos. 22/13, 102/15 and 68/2018). These acts incorporate respective EU directives, in particular Directive 2009/72/EC, 2009/28/EC and 2005/89/EC and a number of EU regulations. Since 2006, Croatia has been a party to the Energy Community Treaty (Official Gazette International Treaty No. 6/06). According to the Croatian Constitution, international agreements take priority over domestic laws and form an integral part of Croatian legislation.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Croatian law regulates six electricity activities: generation, transmission, distribution, supply, retail and electricity market organisation. Traditionally, all activities were performed exclusively by the Croatian national electricity utility, HEP Grupa (HEP Group). However, through the process of liberalisation and opening of the electricity sector to market competition, certain electricity activities became market activities, while others remained as HEP's exclusive activity. Thus, generation, retail and supply of electricity (except when performed as a public service) are performed as market activities (the price and quantity of delivered power is freely negotiated). On the other hand, the transmission and distribution of electricity, electricity market organisation and supply (when performed as a public service) are regulated activities and are performed as public service obligations.

HEP Group consists of Hrvatska elektroprivreda dd (HEP dd) as parent company and several subsidiaries, each of which performs regulated and market activities.

HEP dd has undergone an unbundling process to meet the requirements of the Electricity Market Act. It opted for the independent transmission operator model, meaning that the transmission system operator (renamed HOPS d.o.o.) remained part of the vertically integrated undertaking HEP Group; however, it had to secure physical, technical and financial independence from HEP dd.

HEP-Operator distribucijskog sustava d.o.o. (HEP-DSO) is the Croatian distribution system operator. It is also part of the HEP Group but independent from other HEP Group undertakings and activities.

In August 2018, there were 52 registered electricity generation undertakings, 17 suppliers and 33 retail undertakings. Although the number of registered electricity undertakings has been growing continuously since Croatia joined EU, HEP Group still holds dominant position on the Croatian electricity market. HEP's position on the market has changed rapidly in the past couple of years because new competitors have been entering the market, especially the supply market, where these new competitors, such as German RWE and Slovenian GEN-I, offer lower prices. Since HEP started losing its customers, it has been forced to lower its prices.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

There are two types of authorisations necessary to construct and operate generation facilities: licences for the performance of electricity generation activities and energy authorisation for construction of new generation capacities.

The licence for electricity generation is issued by the Croatian Energy Regulatory Agency (HERA) in accordance with the Rules on Energy Licences and Maintenance of Registry of Issued and Revoked Energy Licences (Official Gazette Nos. 88/15, 114/15 and 66/2018).

The energy authorisation for the construction of generation capacity is granted by the Ministry of Energy (the Ministry) pursuant to the Electricity Market Act. Other construction, location and environmental licences are issued by authorised administrations or ministries in accordance with the respective legislation.

If and when it finds it is necessary, the government may decide on the construction of additional electricity generation facilities through a public tender procurement process in the interest of safety of supply.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Market Act, HOPS must provide non-discriminatory access to the transmission grid according to the regulated third-party access regime. Any new generator should file a request for connection to the transmission grid, which HOPS must accept if all the prerequisites set out in the General Conditions for Grid Usage and

Electricity Supply (Official Gazette No. 85/15) and the Grid Code are met. HOPS may not deny access to the new generator based on possible future network limitations or additional costs related to an increase in network capacity.

Upon issuing consent for connection to the grid, an agreement is concluded between HOPS and the new grid user. A new generator whose access to the grid was denied may appeal against HOPS' decision to HERA. HERA's decision is final, but the unsatisfied party may file a claim with the Croatian Administrative Court.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The use of alternative energy sources (water, wind, sun, geothermal sources, combined heat and power (CHP), etc) is one of Croatia's strategic plans as outlined in the Strategy. According to the Strategy, Croatia has great natural and technical potential. Following EU requirements, in late 2013, Croatia adopted a National Action Plan for Renewable Energy Sources until 2020 (Action Plan), as the implementing instrument for the realisation of EU targets (20-20-20) and national energy strategy. In order to meet the targets, the government has shifted its focus from encouraging wind farm construction (the incentives have been quite high in recent years) to energy production from biomass, biogas, cogeneration plants and small hydropower plants. Croatia has already reached its 20 per cent target.

The Energy Act also expressly states that use of alternative energy sources and CHP is in Croatia's interest (article 13). According to the Electricity Market Act, any generator that uses renewable energy sources may be awarded 'eligible producer status', under conditions set by the law.

Effective from 1 January 2016, the new Act on Renewable Energy Sources and High Efficient Cogeneration (Official Gazette No. 100/15, 123/16, 131/17) (RES Act) harmonises for the first time national and EU legislation (in particular Directives 2009/28/EC and 2012/27/EU) in the field of renewable energy and aims to stimulate and enhance production of 'green' energy. RES Act introduces market premium as the new incentive model, which replaces the present feed-in tariff model. Feed-in tariffs have been kept as incentive model for smaller plants only, up to 30kW.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Environmental protection has a great impact on Croatia's policy in the electricity sector, as outlined in the Strategy. In this regard, Croatia encourages the use of natural gas and renewable energy sources, while in the future it plans to accept nuclear and hydrogen technology only if the aforementioned technologies prove to be safe and acceptable to the environment. Renewables are not only encouraged because they are less harmful energy sources and better for the environment, but also because national fossil energy sources are insufficient for the steady increase in electricity demand. Furthermore, Croatia has natural potential for the production of 'green energy'.

Generally speaking, because Croatia is an importer of energy, the use of renewable energy sources causes an increase in generation costs and, consequently, electricity prices.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Electricity storage is not specifically regulated or supported by Croatian law. RES Act prescribes that renewable energy demonstration projects shall not be supported through market premium or feed-in tariff incentive models but through general research and development and innovation support programmes.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Croatia does not have nuclear power plants on its territory; however, HEP dd is a co-owner of Krsko nuclear plant in Slovenia. Although Croatia recognises the need for nuclear energy and has adopted a nuclear energy programme outlined in the Strategy, no plants have been built.

The greatest concern in construction of a new nuclear plant is its influence on the environment. To date, the government has not approved any nuclear energy construction projects and is not expected to do so in the near future.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The national transmission networks are owned and operated by the national transmission system operator, HOPS (see question 2). Since electricity transmission is a regulated, non-market activity, HOPS, has the sole power to construct and operate transmission networks.

In accordance with the Electricity Market Act, and with prior approval from HERA, HOPS has to pass an annual 10-year transmission system development plan. The current plan is prepared from 2018 until 2027. The plan implements measures to guarantee enough capacity and security of supply.

HOPS was granted a licence for electricity transmission activities, issued by HERA.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Pursuant to the Electricity Market Act, HOPS must provide non-discriminatory access to the transmission grid to all grid users, based on the regulated third-party access regime, in accordance with the General Conditions for Grid Usage and Electricity Supply and the Grid Code. To obtain access to the transmission grid, new generators and customers are obliged to obtain consent from HOPS to connect to the grid. HOPS may deny access only in the case of limited technical or operating capabilities of the grid, undergoing maintenance works or in case of danger to the human lives or assets. Any new generator or customer whose access to the grid is denied may appeal against the HOPS decision to HERA. HERA's decision is final, but the unsatisfied party may file a claim with the competent administrative court. The administrative court proceedings should be conducted as expedited proceedings.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

According to the HOPS 10-year transmission system development plan (2018–2027), Croatia has a transmission grid that is 7,487.50km long. There are no government incentives to encourage expansion of the transmission grid. However, HERA as a regulatory body must review, approve and monitor the application of the 10-year transmission system development plan including any investment projects regarding expansion of the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

In accordance with the 2015 amendments to the Energy Act, transmission services rates are set by HERA, instead of the Croatian government (which was previously the case). HERA rendered the Methodology for Calculation of Tariffs for Electricity Transmission (Official Gazette Nos. 104/15 and 84/16) and on the ground of the Methodology HERA renders tariff rates until 15 December of each year for the following

regulatory year. The rates for 2016 were set by the Decision on Tariff Rates for Electricity Transmission (Official Gazette No. 134/15). No rates have yet been set up for 2017. The new Methodology adopts a recognised costs method meaning that tariffs are calculated based on total recognised costs for the previous year, estimated costs for the current year and planned costs for the following regulatory year. The main legal standards HERA applies are justified, transparent and objective costs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

HOPS is responsible for the reliability of the transmission grid, as the sole TSO in Croatia with the licence to carry out electricity transmission as a public service (see question 2). HOPS's main responsibility is to transmit electricity and to maintain and develop the transmission network for the purpose of the reliable supply of electricity for customers at the lowest cost and the protection of the environment. An extensive list of HOPS powers and responsibilities is outlined in articles 29 and 30 of the Electricity Market Act.

The maintenance of the transmission network includes maintenance of overhead lines and underground cables, primary and secondary equipment, auxiliary plants, telecommunications equipment and building structures in substations and switchyards.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Croatian distribution networks are owned, constructed and operated by HEP-DSO. Since distribution is also a regulated energy activity, all principles that apply to the transmission network also apply to the distribution network (see question 9). The current 10-year distribution development plan was prepared by HEP-DSO for the period 2018–2027.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The regulated third-party access regime that applies to the transmission grid also applies to access to the distribution grid. Therefore, the same rules applicable to access to the transmission grid also apply to the access to distribution grid (see question 10).

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

According to the HEP-DSO 10-year distribution development plan (2018–2027), Croatia has a 138,327km-long distribution grid. Although there are no government incentives to expand the distribution network, HERA as a regulatory body must review, approve and monitor the application of the 10-year distribution system development plan including any investment projects regarding expansion of the distribution grid. The government's intention is primarily to modernise the existing network and to enhance its efficiency.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In accordance with the 2015 amendments to the Energy Act, distribution services rates are set by HERA, instead of the Croatian government (which was previously the case). HERA rendered the Methodology for Calculation of Tariffs for Electricity Distribution (Official Gazette No. 104/15) and on the ground of the Methodology HERA renders tariff rates until 15 December of each year for the following regulatory year. The rates for 2016 are set by the Decision on Tariff Rates for Electricity Distribution (Official Gazette No. 134/15). The new Methodology adopts a recognised costs method, meaning that tariffs are calculated based on total recognised costs for the previous year, estimated costs for the current year and planned costs for the following regulatory year. The main legal standards HERA applies are justified, transparent and objective costs.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale of power to final customers (supply) may be regulated (public service) or market activity. Supply of power under regulated terms is performed as universal service (to households) or as a last-resort service (to entrepreneurs).

Both types of suppliers (regulated and market) have to obtain their energy licences for supply of power to customers from HERA. In addition, a supplier under regulated terms is awarded a public service obligation by decision of the government.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Croatia's power sales market has been fully open since 1 July 2008, meaning that all customers have acquired 'eligible customer status'. This means that all customers have the legal right to choose their electricity supplier and freely contract the quantity and price of the supplied electricity.

Tariffs are regulated only with respect to supply of electricity as a last-resort service (see question 18). Power sales tariffs are set by the following regulations rendered by HERA: Methodology for Calculation of Tariffs for Electricity Supply as Last-Resort Service (Official Gazette No. 158/13) and Decision on Tariffs for Last-Resort Electricity Supply (Official Gazette No. 50/18).

Even though the market is opened and competitors offer lower prices, a large number of customers have still not chosen their supplier and are still supplied by HEP-ODS (last-resort supplier). In order to encourage customers to choose their market supplier, based on the aforementioned methodologies and tariffs, entrepreneurs supplied by HEP-ODS have been paying 20 to 50 per cent higher prices since 1 July 2014.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Croatia does not regulate rates for sales of wholesale power; it is a market activity and all prices are freely negotiated. HEP dd is negotiating power wholesale rates with other electricity companies in the region through tenders.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Public service obligations exist with regard to household customers who opted for or automatically use the universal service and in relation to the last-resort supply to entrepreneurs (ie, in the event of failure of the electricity supplier).

HEP-ODS d.o.o is nominated as the universal service and last-resort supplier.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The regulatory policy with respect to the electricity sector is determined by the Ministry and to a certain extent by HERA. HERA is both a regulatory and supervisory body.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry prepares strategy and legislation with respect to the electricity sector and implements electricity laws enacted by the Croatian parliament. The Ministry also enacts different electricity by-laws and regulations. Furthermore, it supervises and reviews economic measures affecting the status of electricity undertakings, carries out activities relating to the construction of electricity facilities, proposes measures for the efficient organisation of electricity activities, etc.

HERA is a partially regulatory and partially supervisory body (see question 22). As a regulatory body, HERA grants different licences for the performance of energy activities, participates in electricity policy design, approves investment plans and various general acts rendered by electricity undertakings, renders methodologies, tariff rates, etc. As supervisory body, it supervises the performance of different energy activities (generation, transmission, distribution, supply of electricity and the organisation of the electricity market), the quality of services provided by energy undertakings, unbundling process, the application of all tariff systems, the degree of transparency of market competition, etc.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Ministry, as a government body, is independent of the electricity business and industry. However, in the process of preparation of electricity legislation, the Ministry follows and accepts proposals from electricity specialists.

HERA is an independent, non-profit institution established to regulate energy activities, and was founded in accordance with the Energy Activities Regulations Act. HERA is also independent from the electricity industry since members of the HERA management board (and members of their family) cannot be owners of any company in the energy business or perform any other activity in that sector that may lead to a conflict of interest. They are also independent of government officials since they cannot be members of parliament, members of local representative bodies or of the political parties' main bodies.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

HERA's decisions are either final or appealable to the Ministry, depending on the matter in question. If HERA's decision is final, it can be challenged only before a competent administrative court. The Ministry's Appellate Decision can also be challenged before competent administrative court.

The Ministry's decisions are usually final. If the decision is final, it can be challenged only before a competent administrative court. Exceptionally, if it is provided by the law, the Ministry's decisions may be appealed back to the same Ministry, but also to the Appeal Senate as the second instance authority.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The European Commission, Croatian Competition Agency (CCA) and the Croatian Financial Services Supervisory Agency (HANFA) are responsible for acquisition and merger control in general, including the electricity sector (see question 27). HERA controls the eligibility of parties participating in acquisitions and applies a system of measures for protection of market competition (see question 28).

Update and trends

The renewable energy market has been stagnating for the past few years, mainly owing to the lack of incentives for renewable energy production. As of 2016, when the new Act on Renewable Energy Sources and High Efficiency Cogeneration (Official Gazette No. 100/15) (RES Act) entered in to force, feed-in tariffs where replaced by the premium model. The government was obliged to render respective by-laws for implementation of the premium model and new incentive scheme within six months; however, they are still pending as draft by-laws did not pass public consultations.

One reason that the government and the public are more sensitive to implementing new incentive models is lessons learned from the renewable support scheme 2007–2015. During the period 2007 to 2015, the government concluded agreements with eligible producers guaranteeing high incentives (feed-in tariffs) to eligible producers for a 14-year period, especially for wind and solar energy, which resulted in high financial obligations to the state budget. Consequently, in 2017, incentive fees for renewable energy production paid by end-consumers was significantly raised resulting in higher electricity bills.

Furthermore, electricity suppliers' obligation to take over the total net delivered electricity of eligible producers, on regulated purchase price, was (once again) postponed until 2019. Under the RES Act, electricity suppliers' obligation to purchase renewables under regulated prices should have been terminated by 2017. However, owing to the same reasons, lack of funds to fulfil contractual obligations towards eligible producers, free trade of electricity produced from renewable energy was once again postponed.

Amendments to the RES Act are currently under review and whether there will be significant changes and complete renewable market liberalisation is yet to be seen.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Procedures, criteria and time limits for review of transfers of control are set out in the Competition Act (Official Gazette Nos. 79/2009 and 80/13) and the Act on the Takeover of Joint-stock Companies (Official Gazette Nos. 109/07, 36/2009, 108/12, 90/13, 99/13 and 148/13).

Pursuant to the Competition Act, the review procedure is performed by the CCA and European Commission. The procedure is initiated ex officio or upon the initiative of any natural or legal person, association the government or governmental and administrative bodies. Upon carrying out the procedure provided for by the Competition Act, the CCA issues a decision by which it either approves or refuses a transaction.

The CCA will block a transaction in the case of a prohibited concentration, referring to those undertakings that can significantly influence the prevention, restriction or distortion of competition. The CCA should issue a decree within three to eight months of the day the proceeding was initiated, depending on the type and complexity of the case in hand.

HANFA supervises the takeover of joint-stock companies and the application of the Act on the Takeover of Joint-stock Companies. If takeover irregularities are identified, HANFA may impose measures provided for by law such as declaring the takeover bid invalid or to instructing revision, supplementation or withdrawal of the takeover bid.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

HERA supervises, inter alia, the degree of transparency and market competition between electricity undertakings. In case of possible anti-competitive or manipulative practices, HERA has the obligation to notify, cooperate with and assist the CCA. The CCA is authorised to impose measures prescribed by the Competition Act for removal of the

adverse effects of such practices. For severe infringement of the provisions of the Competition Act, the CCA may fine the undertaking up to 10 per cent of the past year's total income.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

There are no specific criteria that apply to the energy sector that define 'anticompetitive' or 'manipulative' conduct. Regulated energy activities are regulated on the principles of transparency, objectivity and non-discrimination, while market energy activities are regulated according to the principles of market competition. Therefore, the Competition Act applies to market energy activities. The Competition Act prohibits entering into agreements that directly or indirectly fix purchase or selling prices or any other trading conditions, limit or control the market, share markets or sources of supply, etc. Furthermore, abuse of a dominant market position is also prohibited, as well as concentration of undertakings.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

HERA has the power to withdraw licences for the performance of energy activities, for instance, if the supplier under public obligation does not apply the prices set by the tariff system. Furthermore, HERA has the power to request the HOPS or HEP-DSO to change its conditions and rules if it is necessary to ensure their non-discriminatory application. HERA also issues other legally binding decisions in accordance with the law.

The Electricity Market Act prescribes fines for any misconduct, including anticompetitive or manipulative practices (for instance, if the HOPS or HEP-DSO unlawfully denies access to the transmission grid). The fines are imposed by the Ministry. In the case of recidivism, energy undertakings may be suspended from carrying out licensed activities for up to a year. The Electricity Market Act prescribes that a TSO or DSO may be fined up to 10 per cent of its total past year's income in the case of international discrimination of grid users.

According to competition law, the CCA issues legally binding decisions by which it prohibits anticompetitive conduct. Finally, the CCA is authorised to instigate misdemeanour court proceedings in the case of violation of the Competition Act.

HANFA is also authorised to instigate misdemeanour court proceedings in case of takeover irregularities.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements or limitations in the electricity sector regarding acquisitions by foreign companies.

The only limitation concerns the privatisation of HEP: the government may sell HEP's shares only in accordance with Croatian privatisation acts that regulate the privatisation procedure, control mechanisms, the proportion of shares that may be sold on the capital market, etc.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There is no specific energy licence prescribed for operating of interconnectors. HOPS, as TSO and owner of the transmission network, has the right and obligation to maintain and develop transmission network, including constructing and operating interconnectors. Construction of possible interconnectors should be envisaged in the 10-year transmission development plan, approved by HERA (see question 9). Interconnectors should be developed and operated in line with international agreements and respective EU frameworks, including the European Network of Transmission System Operators for Electricity plans and codes.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Pursuant to the Electricity Market Act, interconnector access and cross-border electricity supply is governed by international agreements binding upon the Republic of Croatia. The HOPS must carry out the transit of electricity through the transmission network according to the terms and conditions stipulated in those agreements, and the technical capacity of interconnections.

Croatia has been a party to the treaty establishing the Energy Community since 1 July 2006. The treaty abolishes customs duties and quantity restrictions and creates a legal and institutional framework for a free transport and trade in electricity and gas. It also allows a single mechanism to be created for cross-border transmission or transport of interconnected energy for the whole of Europe. This treaty enabled Croatia to become part of the European energy market.

Based on the Energy Community treaty, the HOPS has adopted the Rules on Allocation and Use of Cross-border Transfer Capacities.

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Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the Electricity Market Act, all commercial and financial transactions between the parent company (HEP dd) and HOPS (including loans), have to be made in accordance with market conditions. HERA is authorised to approve or deny each transaction.

With respect to HEP-DSO, HEP dd as the parent company approves annual financial plans and sets the limits of their possible debt, but cannot give instructions relating to their everyday operation. Cross-subsidisation of companies engaged in regulated activities and those engaged in market activities, and cross-subsidisation of activities within the same company are prohibited by the Electricity Market Act.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

For serious breaches of unbundling rules, misdemeanour proceedings may be initiated and a fine imposed. HERA supervises all activities mentioned in question 34 and may demand their implementation.

Ecuador

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Ever since the Constitution of Ecuador was enacted in 2008, it has become the main source of legal principles for the strategic sectors of the economy, especially the power sector. The situation of Ecuador is presently changing because of the switch from a failed market model to a now failing state-owned or state-controlled power sector that has eradicated the term 'energy wholesale market' from the law glossary. The policy has now shifted towards opening up opportunities for the private sector. Bills of law are in the pipeline to enable the grant of concessions to the private sector for operating existing state-owned infrastructure and consequent new ventures. This is a consequence of the need for more financing resulting from the government's excessive borrowing in the past decade.

The industry's specific legal framework is pillared on the Organic Law of the Public Electricity Service (LOSPEE), which rules the participation of the public and private sectors in activities related to the public electric power service as well as to the promotion and execution of plans and projects involving renewable energy sources and energy efficiency mechanisms. Beyond its statement of purpose, the LOSPEE explicitly makes the state the protagonist of the power sector.

In the first semester of 2018, the Ecuadorian government decided to merge three ministries – Electricity (MEER), Hydrocarbons and Mining – as an austerity and efficiency measure. The new entity, hereinafter the Ministry, has the same legal capacity, powers and obligations that the LOSPEE had granted to its predecessor, MEER. This means that the Ministry will become the governing body of the Ecuadorian power and renewable energy sector. It will also be responsible for satisfying the country's electrical power needs by drawing up relevant legislation initiatives, as well as policies, plans and strategic projects for ascribing efficiency in the use of national resources. The Electricity Master Plan (PME) presently in place for the sector is valid until 2025 and is mandatory for every sector of the economy.

Currently, the private initiative can participate only on an exceptional basis in small to medium renewal energy source projects authorised by the government by way of concessions. Nevertheless, owing to the national treasury's lack of financial resources, the government is promoting a significant change in the authorities' criteria in order to propel the private sector's participation by offering more financially attractive conditions.

Unlike most of the region's countries, Ecuador did not implement privatisation in the 1980s and 1990s. Perhaps the time has come for the country to seek large private investments in public services and infrastructure.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The LOSPEE names the Ministry as the highest authority in the field of energy policies and governance. ARCONEL is the regulation and oversight agency for the electric power service and CENACE is the national electricity operator.

Major power generation infrastructure and the national power transmission grid are managed by the state-owned corporation CELEC, which holds operation titles to develop power generation and transmission. The distribution and commercialisation agents, hereinafter called electricity companies, are owned mostly by the state and are business units of CNEL, another state-owned corporation. Regardless of whether they are public or private, operators, concessionaires, consumers and end users must observe the regulations and energy efficiency policies issued by the Ministry and ARCONEL.

While small-scale renewable sourced generation is open to private stakeholders in Ecuador, the transmission service is under the strict responsibility of CELEC's Transelectric Business Unit. Conversely, distribution is divided among 11 state-owned companies in which the Ministry is the main shareholder.

The LOSPEE does not acknowledge the existence of a power wholesale market, but defines the power sector's stakeholders as follows:

- public enterprises;
- private and public joint ventures;
- private companies;
- consortiums; and,
- community-owned entities.

Premised on international treaties and regional regulations, the LOSPEE allows international and regional interconnections for receiving and dispatching energy, depending on availability and the needs of the universe of local customers. The Ministry is responsible for promoting fair policies on international interconnections in benefit of local consumers.

ARCONEL is in charge of coordinating actions and regulatory standardisation with the relevant regulatory agencies of other countries. On the other hand, CENACE coordinates the operation of energy interconnections and ensures full compliance with applicable international technical and financial regulations in energy transactions.

As mentioned above, the electricity companies supply electricity to end consumers, whether individuals or companies, complying with ARCONEL's regulatory conditions.

To receive the public service of electricity, the consumer or end user must sign an electricity supply contract with an electricity company. The provisions, conditions and other applicable rules for the contract are set by the relevant regulation issued by ARCONEL and revised from time to time.

Energy purchase contracts

Companies qualified as large-scale consumers because of the volume of their electricity consumption are entitled to the preferential purchase of electricity under bilateral, regulated contracts called energy purchase contracts.

Power block transactions are possible solely under energy purchase contracts. CENACE gives a commercial value to the transaction based on the prices agreed under the energy purchase contract. Furthermore, CENACE valuates international electricity transactions on the basis of trade agreements with other countries.

ARCONEL issues regulations to define the terms and conditions of energy purchase contracts and of short-term transactions.

CENACE programmes and operates long-, medium- and short-term energy purchase contracts in pursuit of achieving the lowest

operating cost for the system. It also determines the values to be paid to each participant, including compensation for the local and international services of electricity transmission.

Market developments

Over a year ago, one of the country's biggest energy projects, Coca-Codo-Sinclair, was commissioned. This hydroelectric facility and other ongoing projects help fulfil the energy sector's growth objective. Different hydroelectric projects are expected to be implemented shortly, while others based on renewable energy sources, such as geothermal, biomass, wind and solar, are under consideration.

The Ministry's PME identifies priority projects for the electricity generation sector. The PME also includes expansion and enhancement programmes in energy generation, transmission, distribution and supply for isolated areas.

The PME ensures a gradual increase in electricity coverage for isolated areas. The Ministry selects which projects are to be developed by the state and which could be placed under concession to private companies or to companies from the people's and solidarity economic sector as a result of a public selection process defined by the relevant law.

The investment by institutions and public-sector companies required to execute the generation, transmission and distribution projects under the PME can be paid with funds from the general state budget or from such institutions and public-sector companies or from both.

Alternatively, public-sector companies can take out loans backed by their own or the state's guaranty. Investments funded by the national budget will be regarded as an equity contribution from the public-sector or as a capital contribution to the company concerned.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

In exceptional circumstances, the Ministry can delegate electricity sector activities (ie, generation, transmission and distribution) to the private sector, when (i) it is necessary to satisfy public interests; (ii) demand for the service cannot be met by state-owned entities; or, (iii) projects based on non-conventional renewable energy are not included in the PME.

Delegation in the case of either (i) or (ii) is restricted to projects included in the PME under conditions that benefit national interests. The delegation is made as a result of a public bidding process conducted by the Ministry. The awardee is entitled to receive an enabling title (the concession) and is required to execute a regulated contract that is priced according to the bidder's tender.

In the case of non-conventional renewal energy projects, the Ministry can delegate project development to the private initiative, subject to compliance with the specific requirements regulated by ARCONEL.

The process for securing authorisation starts with a public bidding process under which the company offering the best conditions for national interests is selected to execute the project.

The bidding process takes energy requirements, unregulated demand, terms and conditions, as well as price, into account. The bidder selected through this public process is entitled to a certificate of authorisation and is required to sign a contract that is priced in accordance with its tender. Once obtained, the authorisation and any information concerning operating permits and concession contracts for the electricity sector must be recorded in the Ministry's National Authorisation Register. It is the responsibility of the electricity company to record the certificate of authorisation at its own expense, pursuant to the law and applicable regulations.

An international bidding process is not required for projects delegated to foreign state-owned entities or their subsidiaries under an international agreement.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

A concessionaire with an enabling title gains legal access to the transmission grid once it has completed the technical studies required by the Ministry. Such studies are necessary for avoiding conflict with the system's operations and for ensuring the best possible return on investment.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The LOSPEE defines renewable energies or non-conventional energies as those from sources that do not deplete because of their use. These types of energies include, but are not limited to, hydraulic, wind, solar, geothermal, biomass, tidal, nuclear and other energies.

The Ministry promotes the use of clean technologies and alternative energies to achieve the development of a sustainable electricity system based on the use of renewable energy sources. The law guarantees that electricity produced with this type of energy will have the preferential conditions established in a regulation issued by ARCONEL.

Most likely, the primary incentive for alternative energy source projects is the feed-in tariff (FIT). By the year 2012, companies could apply for the original Ecuadorian FIT (granting power generation tariffs for this type of project up to 2027). It introduced significantly high rates (ie, photovoltaic plants received the highest tariffs: US$400 per MWh) that mostly benefited photovoltaic power generation projects. For 2015, Ecuador had a total of 6.2GW of installed generation capacity: 56 per cent from thermal power and nearly 30 per cent from large hydropower generation projects. Virtually clean renewable energies, including small hydropower plants, as well as biomass, wind and solar farms, accounted for only 11 per cent of the total national installed generation capacity.

The first FIT programme benefited approximately 500MW of capacity from 111 power projects (biomass, small-scale hydro, solar and wind sources), in the form of concessions and tariffs. Although the incentives were very attractive, the projects faced many official processing obstacles for achieving success. Therefore, only a few projects have been commissioned thus far.

Renewable energy developers can apply for import tax exemption on clean energy equipment and a five-year income tax waiver. In addition, if these developers apply for an investment contract with the government, they may be granted an income tax exemption of up to 20 years.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Ecuador submitted its unconditional 'Intended Nationally Determined Contribution' to the United Nations about three years ago, committing to curtail greenhouse gas emissions (increasing the reduction from 20.4 per cent to 25 per cent) by 2025. The LOSPEE stipulates the obligation to enact policies to achieve energy efficiency and environmental responsibility. Despite these national commitments, the Ecuadorian government has not issued a regulation since 2015 to accomplish these proposals.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The LOSPEE states that energy storage, among other aspects beyond regulatory aspects, should be considered for modernising electricity networks to actively manage the demand and opportunities for offering new products and services.

The Ministry directs a smart network programme called REDIE. The modernisation of electrical networks should consider the following, among other aspects:

- regulatory matters;
- transportation networks;
- energy distribution;
- communication networks;
- generation distribution;
- smart meters;
- active demand management;
- opportunities for offering new products and services; and
- energy storage.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Ecuador has not developed any nuclear capacity. The only approach to nuclear interest stems from international treaties, but without significant results. There is one treaty with Chile and another with Russia. Therefore, there is no specific policy encouraging or discouraging the development of new nuclear power plants.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

CELEC EP is in charge of the domestic transmission of electricity and acts through its specialised business unit called Transelectric, based on an enabling title granted by ARCONEL. Transelectric is responsible for expanding the national transmission system, in accordance with the PME. Transelectric is obliged to give third parties free access to its system pursuant to the terms and conditions to be defined in a regulation that will also include applicable interconnection tariffs.

The Ministry may authorise joint ventures and, on an exceptional basis, specialised private power transmission companies to build and operate the electricity transmission infrastructure included in the PME.

Furthermore, the Ministry may authorise generators, autoproducers, distributors, large-scale consumers and end users to build transmission networks at their expense to satisfy their own needs. Every generation project included in the PME is considered a priority project and therefore is eligible for connection with the national transmission system.

Authorisation (enabling title) for a private investor to build transmission infrastructure must be obtained from the Ministry. Before applying for an enabling title, the party interested in developing the transmission infrastructure project must draw up technical studies guaranteeing that its access to the national interconnected system will not adversely affect the system.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

CELEC EP plans and develops transmission system projects, which are managed through its Transelectric business unit. This unit draws up and executes the plan to expand the transmission network.

Prioritised energy projects and other projects by the private initiative that are not an original part of the PME can be given priority so long as certain conditions are met. These may include the condition for the power generation concessionaire (applying for access) to fund and build infrastructure already included in the PME.

The state is responsible for providing the public services of potable water, irrigation, sanitation, electrical power, telecommunications, roads and port and airport infrastructures. During the 2016–2025 period, the state will be responsible for ensuring that the power generated by all generation plants is transmitted to consumption centres for facilitating interconnection with neighbouring countries.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

There are no specific measures by the government to encourage the expansion of the transmission grid. Nevertheless, grid expansion planning is continuously updated by ARCONEL.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Within the first semester of each year, ARCONEL sets the costs of transmission services and other energy sector services to be applied in electricity transactions. These costs are used as the basis for determining rates for consumers or end users in the following year. In cases not expressly provided for in the relevant regulation, the rates approved for the year may be revised.

Based on the relevant study, ARCONEL may set rates that promote and encourage the development of basic industries, taking into consideration the effects of using renewable and environmentally friendly energies at competitive and stable prices, or subsidised, when necessary.

ARCONEL draws up the rate schedules, guided by the constitutional principles of solidarity, equity, coverage costs and energy efficiency. The same principles should also be followed in ad hoc regulations. The same rate should be applied across the nation, depending on consumption and voltage levels. In addition, the principles of social and environmental responsibility should be considered.

The cost of public and strategic electricity services should cover all associated costs for generating, transmitting, distributing and commercialising electricity, as well as for public lighting.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

ARCONEL, as the regulation and oversight agency of the electric power service, is responsible for issuing, and supervising compliance with, the regulation on opportunity, service quality and related rates. CENACE, the national electricity operator, is responsible for managing all transactions, while CELEC EP Transelectric is in charge of the maintenance and operation of lines.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution companies and energy commercialisation companies are state-owned entities working under an enabling title (basic concession). They are regulated and overseen by ARCONEL and are the only companies entitled to build and operate distribution networks under an enabling title issued by ARCONEL.

Electricity distribution companies are responsible for selling electricity to end users. Energy commercialisation includes the purchase of blocks of electricity for sale to consumers or end users, as well as the entire commercial management associated with buying and selling transactions. Such management covers the installation of measurement systems and meters, as well as consumption-reading-based invoicing and collections. Electricity distribution and commercialisation companies have jurisdiction to exercise the enforced collection of receivables related to the provision of the public electricity service and the service of public lighting.

Any investments associated with the construction of distribution networks must be included in the PME to receive priority. Furthermore, specific works included in the distribution company's yearly budget will get funding from the Ministry of Finance. When investments have not been ascribed priority, the relevant construction permits will not be granted. Construction permits are issued by ARCONEL, while other

permits required for coordinating the construction are issued by the municipality with jurisdiction over the worksite.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In accordance with the constitutional principles of efficiency, responsibility, continuity, quality and fair prices, every user is entitled to the public service of electrical power. This right is granted when the user registers with a distribution company by signing an electricity supply contract.

Distribution companies engage solely in commercialisation and therefore interconnection with private direct energy suppliers is not presently available.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The PME sets forth the general objectives, policies, strategies, management indicators and goals. For each one of the operational stages of generation, transmission and distribution, the PME includes plans, programmes and projects for expansion and improvement, indicating the required resources. It also contains the respective execution schedules.

Ever since the LOSPEE was issued, the management of distribution companies has focused on modernising distribution infrastructure, operations and services. In fact, electrical power service coverage has been on the rise since 2008. Nevertheless, the sector's centralised structure has not allowed distribution companies to develop more competitive projects and plans to enhance service quality and reduce losses, as well as to expand coverage and commercial management. There are no specific taxation benefits to the activities related to electricity distribution beyond those granted to any new venture demonstrating investment in a private-public partnership.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Within the first semester of each year, ARCONEL determines the distribution and commercialisation costs to be applied in electricity transactions and that will serve as the basis of applicable rates charged to consumers or end users for the subsequent year. In any case not expressly provided for in the relevant regulation, the rates approved for a certain year can be revised.

Based on a study, ARCONEL may set rates that promote and encourage the development of basic industries, taking into consideration the effect of the use of renewable and environmentally friendly energies at competitive and stable prices, or of subsidies, when necessary.

Public-sector electricity companies and public-private electricity joint ventures in charge of distribution have the right to the free use of roads, poles, ducts, sidewalks and similar infrastructure belonging to the state through any level of government (regional, provincial or municipal) or belonging to other public-sector entities exempted from paying taxes and contributions with respect to those assets.

Public-sector companies providing the public service of electricity and public-private companies have the right to build transmission lines and other electricity distribution and electricity service facilities within the limits of the terms and conditions of their enabling titles. These rights allow entry into and occupation of land, with adequate compensation for landowners.

When a right of way is established to cross third-party property, it will not constitute a prohibition for transferring the property, but rather an easement, unless the right of way makes the property unusable. In that case, the property would be declared eminent domain and the landowner should receive land damages. The Ministry may grant easements with regard to infrastructure for transmission lines and other electricity distribution and state-owned facilities for the electricity service.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The approval for carrying out distribution activities and the legal basis for the sale of power to customers (commercial and domestic) is the enabling title granted by the Ministry for these specific activities. On the other hand, customers have to sign an electricity supply contract to be sold power.

Commercialisation activities are not separate from distribution activities and therefore there is no commercialisation market beyond the market for the activities carried out by distribution companies.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The electricity tariff is the sole tariff applied across national territory and is defined by ARCONEL, guided by the principles of solidarity, equity, cost, coverage and energy efficiency, but also based on consumption patterns and voltage levels. Differentiated rates may be set for consumers as an exception. According to the Organic Code for Production (a law for attracting investments), contracts for investment in the electricity sector that are executed with the Republic of Ecuador must include a stable power purchase price clause or otherwise a programmed price revision clause.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

ARCONEL issues a regulation each year to determine the costs of generation, transmission, distribution, commercialisation and public lighting that will be applied the following year.

The rate of public electricity services must cover costs related to power generation, transmission, distribution and commercialisation, as well as the cost of the service of public lighting. It is important to note that Ecuadorian law does not recognise the existence of a wholesale power market and, therefore, does not provide specific rules to regulate it.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Regulation of electricity transmission services

Pursuant to the LOSPEE, the following are the rights of consumers or end users and, consequently, the obligations of distribution companies:

- to access the public electricity power service, in accordance with the constitutional principles of efficiency, responsibility, continuity, quality and fair prices;
- to receive a commercial invoice based on actual consumption;
- to file claims with the electricity company in case of a complaint about the public service received or values invoiced, as well as to receive a timely response thereto;
- to be timely informed through any suitable means about works or actions that could trigger a suspension in the electric service;
- to be timely informed of the rates to be applied based on actual consumption;
- to receive equitable, non-discriminatory and non-abusive treatment in the provision of the public electric power service;
- to have street lighting on public roads, depending on the relevant regulation;
- to participate in public hearings held by the Ministry and ARCONEL; and,
- to be compensated for damage caused by substandard quality in the public service.

Update and trends

Ecuador is facing the urgency of attracting financial international markets to invest in every possible infrastructure project whether new or previously built. The country is promoting and discussing new reforms to the energy efficiency regulation.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

In Ecuador, the Ministry oversees the renewable energy policy and planning. Next in line is ARCONEL, which oversees the electricity sector.

The key players of the sector are the Minister, the ARCONEL Executive Director and the CELEC EP General Manager.

Based on the existing constitutional framework, all the aforementioned public servants are appointed directly or indirectly by the President of the Republic. The Executive Branch is therefore the most influential authority in defining the regulatory policy for the electricity sector and its operations.

23 Scope of authority

What is the scope of each regulator's authority?

The regulators

The primary law sources are the Ecuadorian Constitution and the LOSPEE, which designates the Ministry as the highest authority in energy regulation. The Ministry has authority over ARCONEL.

The Ministry is the governing body in the Ecuadorian electricity and renewable energy sector. This entity is responsible for meeting the country's electrical power needs by drafting relevant legislation, development plans and sector policies for the efficient use of natural resources.

The LOSPEE further provides that power generation or distribution companies can be managed and operated by foreign state-owned companies that have signed agreements with the Ecuadorian state.

The main functions of the Ministry include:

- increasing the supply of electricity generation;
- expanding the coverage of transmission infrastructure;
- boosting efficiency to meet the electricity demand;
- enhancing the efficiency of distribution companies;
- improving the quality of the power service; and,
- elevating the overall safe use of nuclear energy.

The Ministry can authorise public-sector companies, public-private joint ventures or state-owned entities, which are created under the Organic Law on Public Enterprises, to carry out generation, transmission, distribution and commercialisation activities; to import and export electricity; and, to provide the public lighting service. To engage in the aforementioned activities, authorised entities may enter into agreements or contracts for the procurement of goods, the execution of works or the provision of services, as deemed necessary. In most cases, the applicable framework for these contracts is the Public Procurement Law.

In contrast, the Ministry is responsible for processing and issuing operating permits and concession contracts.

There are different regulators for the other segments of the energy industry, each serving under the Ministry's regime. These are:

- ARCONEL, the technical administrative body responsible for exercising state power to regulate and oversee activities related to the public electricity service, as well as for safeguarding the interests of consumers or end users;
- CENACE, the national electricity operator, a specialised technical body that protects the security and quality of operation of the national power system; and,
- specialised institutions.

The main functions of ARCONEL can be summarised as follows:

- regulates the technical, economic and operational aspects of the public service of electricity;
- issues regulations for the power sector and for public-sector or private entities, as well as follows energy efficiency policies;
- verifies compliance with regulations;
- establishes the schedule of tariffs for the public lighting service;
- performs operational planning for the short-, medium- and long-term supply of electricity, optimising transactions at the national and international levels;
- manages and settles commercial transaction accounts among titleholders;
- handles technical and international commercial electricity transactions;
- plans and executes energy generation and transmission maintenance; and,
- oversees and coordinates the supply and use of fuel for generating electricity.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The regulator of the electric power sector is ARCONEL. Conceptually, the entity is not independent but rather is a part of the Executive Branch.

The process for obtaining such authorisations is initiated in a public selection procedure that allows the company that will develop the project under the most favourable conditions for national interests to be chosen. Energy requirements are also determined, and the process takes unregulated demand, terms, conditions and prices into account. The bidder selected under this public process has the right to be granted an authorisation certificate. In turn, the bidder is obliged to sign a contract based on the price submitted in the tender. Once obtained, the authorisation and any information relating to operating permits and concession contracts in the electricity sector must be registered with the National Register of Authorisation Certificates under the charge of the Ministry. It is the responsibility of electricity companies to record the authorisation certificate at their own expense, in accordance with the provisions laid down for that purpose in the general regulations of the law.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Administrative complaints or disputes that may rise from any public administration activity for which no specific procedure is foreseen, are substantiated in an administrative procedure, in accordance with the Administrative Code. The special procedures for exercising sanctioning powers and ordering enforcement are regulated in this Code.

People have the right to access public services, to be informed in detail about the terms and conditions of the supply of such services and to file complaints regarding this matter. The following remedies are available: appeal and review appeal.

The highest administrative authority of the public administration office that issued the disputed act will rule on the remedy. Therefore, the remedy must be filed with the same authority that issued the administrative act in dispute. Then, the ruling by the highest administrative authority can be challenged only at the courts. The administration can overturn the administrative act ex officio by exercising its review power. The interested party may request that a declaration be issued to annul the administrative act by filing a claim or administrative appeal.

When an interested party believes that a subjective right to which he or she is entitled by law has been violated, such party can request that a declaration be issued to annul the administrative act, even if he or she was not a party in the prior administrative procedure.

The principles to be considered before making an appeal are:

- only administrative acts can be challenged through administrative channels by interested parties, even when such parties did not participate in the relevant administrative procedure. Administrative acts are challenged by filing an appeal;
- the review appeal can be used only with respect to an administrative act resulting from an administrative proceeding in the cases in which such remedy is available by law;

- if decided to appeal an administrative act at the courts, administrative channels will no longer be available; and
- any flaw in the appeal will not obstruct the processing thereof.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Ministry may declare the expiration of concession contracts when: a concessionaire transfers rights or enters into private contracts or agreements for the assignment of one or more of its rights without the authorisation of the Ministry of Electricity and Renewable Energy; or, the concessionaire transfers shares, membership ownership, certificates or other titles that imply a change in the shareholders of a private company or a company from the people's and solidarity economic sector, without authorisation from the Ministry.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The transfer of rights or private contracts, as well as the sale of stocks, shares, membership ownership or other securities involving a change in the shareholders of a private company or in a company from the people's and solidarity economic sector acting as an energy sector concessionaire or agent, will require approval from the Ministry to be legally effective.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The Ministry, ARCONEL and CENACE politically lead the activities in the power sector presently comprising the state-owned emporium wholly owned and governed by the Executive Branch. There are no applicable, specific anti-competitive rules for a sector in which private participation is allowed strictly on an exceptional basis.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Not applicable.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

Not applicable.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no specific restrictions on acquisitions by foreign companies in the electric sector. Authorisation from the Ministry is required for any acquisition in companies that generate, transmit, distribute or sell energy.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

International interconnectors are subject to the planning of the state-owned CELEC EP business unit called Transelectric. Occasionally, Transelectric will form joint ventures with a cross-border entity that is authorised by the government of a neighbouring country to act as the counterpart in a joint endeavour.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Premised on international treaties and regional regulations basically stemming from the legal framework of the Andean Community of Nations, Ecuadorian law allows international (regional) interconnectors to receive and dispatch energy, depending on availability and local consumer needs. Over the past 20 years, Ecuador has sold to and purchased energy from Colombia and Peru, though strictly on a sporadic basis.

No power purchase agreements have been signed between independent concessionaires and market agents from both markets to date.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Subject to the specific regulations of ARCONEL, power generators have the obligation to execute regulated contracts when: initiating

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purchase-sale relations with legal entities (private and public-private capital entities) engaged in distribution and commercialisation activities, in proportion to their regulated demand; and, dealing with large-scale consumers under bilateral contracts.

In the case a power generation facility is owned by a distribution company, the power produced by that facility will be delivered to all distribution companies in proportion to their demand in order to maintain the sole domestic rate.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ARCONEL acts as the regulatory and oversight authority and therefore is entitled to enforce administrative orders and sanctions within the energy sector.

Ghana

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Policy framework

Ghana's electricity industry is unbundled into three main sub-sectors, namely electricity generation, transmission and distribution. The policies of government for the electricity sector are mainly in relation to these three sub-sectors.

The National Energy Policy 2010 (the Policy) is the underlying policy guiding governmental actions and strategies in the power sector. Generally, the goal of the government was to become a major exporter of power in the West African sub-region by 2015. This was intended to be achieved through capacity addition, modernisation of transmission and distribution infrastructure. The policy also focuses on institutional and regulatory reforms intended to create competitive electricity markets.

The objective of the government under the National Energy Policy was to increase installed generation capacity from about 2,000MW to 5,000MW by 2015 and to achieve universal access by 2020.

As at 2014, Ghana had achieved only 2,830MW of installed generation capacity. According to the National Energy Statistics 2016 from the Energy Commission, Ghana increased its installed generation capacity from 2,830MW in 2014 to 3656MW at the end of 2015. According to the 2017 and 2018 National Budgets, a total of 880MW of power capacity was added to the country's installed generation capacity in 2016 to bring the installed capacity to 4,132MW. In 2017, a total of 445 MW of power capacity was further added to increase the country's installed generation capacity from 4,132 MW to 4,577MW. In 2018, the government plans to increase the installed generation capacity by about 484MW (with 340MW coming from the CenPower Power Project and 144MW from Phase 1 of the Early Power Project) to meet the growing demand of electricity.

The policy objective for the transmission market is to provide adequate, safe and reliable electricity transmission network. This may be achieved by supporting the mobilisation of commercial and domestic capital resources to supplement external funding for transmission infrastructure development. Also, the policy is to enforce technical regulations and operational standards, and to provide support for the maintenance of existing transmission infrastructure.

The policy objective for the distribution market is to seek adequate investment to improve the electricity distribution network and thereby reduce high system losses and improve the poor quality of electricity supply. This is intended to be achieved by assisting distribution utilities financially to improve their operations.

To secure future fuel supplies, the policy objective is to increase and diversify the fuel mix in power generation. The policy requires government to, inter alia, support infrastructure for new fuel supply sources, develop coal power, and support regional integration of energy resources. The government also intends to achieve universal access to electricity by extending the reach of electricity infrastructure to all communities by 2020.

With regard to electricity pricing, the government's objective is to ensure that electricity pricing is efficient and competitive while providing rates that are affordable.

Power sector reforms were initiated in 1995 to ensure an efficient and effective power sector and also to allow increased private-sector investment and participation. The policy objectives include to promote competition in the generation of electricity through the development of a wholesale electricity market, create the environment for retail competition in the electricity market, facilitate the entry of independent power producers (IPPs), and ensure improved performance of electricity utility companies. In 2017, the Cabinet of Ghana approved the full operationalisation of the Wholesale Electricity Market (WEM) and its associated mechanisms as well as the establishment of the Electricity Market Oversight Panel (EMOP). The WEM controls the supply and trading of wholesale electricity between retailers and generators. The EMOP is an 11-member panel tasked with monitoring the general performance of the Electricity Company of Ghana (ECG) and ensuring the smooth operation of the WEM.

The strategic policy focus for the sector is to attract investment to improve and expand the capacity of the existing infrastructure to deliver reliable power supply services in the short to long term and to be net exporter of electricity in the West African sub-region.

Legislative framework

In 2014, the government set up the Ministry of Power as part of a restructuring of the power sector to ensure more stability and security of power. Prior to this, the Ministry of Energy had the oversight responsibility for the power sector. The Minister responsible for power is mandated to drive the sector and achieve the national objective of achieving sustainable generation, supply and efficiency of power to match the growth the economy is experiencing. The Ministry of Power has oversight responsibility for all the regulatory activities and generally provides policy and investment direction in the power sector. In 2016, with the change of government, the new government replaced the Ministry of Power with the Ministry of Energy to develop and ensure reliable, high-quality energy services at the minimum cost to all sectors of the economy through the formulation, implementation, monitoring and evaluation of energy sector policies.

Ghana has two main regulatory agencies for the power sector, namely the Energy Commission and Public Utilities and Regulatory Commission.

The Energy Commission Act 1997 (Act 541) (the Energy Commission Act) established the Energy Commission. The commission's main object is to regulate and manage the utilisation of energy resources in Ghana and to coordinate all policies in relation to them. The commission is responsible for granting licences to public utilities for the transmission, wholesale supply, distribution and sale of electricity and natural gas in Ghana.

There are a number of subsidiary legislations and guidelines enacted under the authority of the Energy Commission Act for the proper management and regulation of the power sector of Ghana.

The Public Utilities and Regulatory Commission Act 1997 (Act 538) (the PURC Act) established the Public Utilities Regulatory Commission (the PURC). The PURC's responsibility is to approve rates charged by public utilities, ensure competition among public utilities, monitor standards of performance of public utility service provision and ensure the protection of consumer rights.

There are several other Acts of Parliament, legislative instruments and sector codes enacted for specific purposes within the electricity industry. The Volta River Development Act 1961 (Act 46) (the VRA Act) established the oldest power entity in Ghana – the Volta River Authority

(VRA). The VRA is wholly owned by the government of Ghana. The VRA, through its subsidiary, the Northern Electricity Development Company (NEDCo), is responsible for electricity distribution in the northern regions of Ghana. The Electricity Company of Ghana, another wholly state-owned utility, is responsible for the distribution of power in the southern regions. The VRA Act tasked the VRA with the responsibility to generate electricity by means of the water power of the Volta River and by any other means. The VRA also supplies electrical power to distribution companies, bulk customers and the townships of Akosombo and Kpong.

As part of power sector reforms in 2005, the VRA's mandate was restricted to electricity generation and the electricity transmission functions of the VRA were transferred to the Ghana Grid Company (GridCo). GridCo is responsible for operation of the National Interconnected Transmission System (NITS), bulk power purchase of electricity from generators of electricity and sale to NEDCo and ECG. It is important to highlight, that it is expected that NEDCo's distribution functions in the northern regions will be transferred to ECG in order to create a national distribution utility. Independent Power Producers who intend to transmit electrical power over the NITS are required to enter into a connection agreement with GridCo.

In 2007, Parliament enacted the Bui Power Authority Act 2007 (Act 740) (the Bui Power Act) which established the Bui Power Authority to oversee the development of the Bui hydroelectric power project on the Black Volta River and any other potential hydroelectric power sites on the Black Volta River.

The Renewable Energy Act 2011 (Act 832) (the Renewable Energy Act) is the most recent energy related legislation geared towards the encouragement of Ghana's drive to boost the renewable energy sector.

The object of the Renewable Energy Act is to provide for the development, management and utilisation of renewable energy sources for the production of heat and power in an efficient and environmentally sustainable manner.

The Energy Commission developed the National Electricity Grid Code (the Grid Code) in 2009, which is intended to set out the requirements, procedures, practices and standards that govern the development, operation, maintenance and use of the NITS in Ghana.

The overarching objective of the code is to ensure that NITS provides fair, transparent, non-discriminatory, safe, reliable, secure and cost-efficient delivery of electrical energy.

The Grid Code describes the responsibilities and obligations associated with all the functions involved in the supply, transmission and delivery of bulk electric power and energy over the NITS including the functions of the electricity transmission utility (ETU), a NITS asset owner, a wholesale supplier, a distribution company and a bulk customer.

To ensure that electric power is produced, transmitted and distributed in an environmentally sustainable manner, the Environmental Protection Agency Act 1994 (Act 490) (the EPA Act) was enacted in 1994. The EPA Act established the Environmental Protection Agency (EPA) as the principal environmental watchdog in Ghana.

All electricity utilities must receive environmental permit from the EPA before they undertake any project. The EPA ensures compliance with the laid down environmental impact assessment procedures in the execution of electricity projects.

The existing legal regime envisages a spot as well as a bilateral market for power trading. The present position is largely bilateral as there are not yet enough players for a fully functioning liquid spot power trading market. The GRIDCo, as market operator, is currently working at establishing systems and procedures to support enhanced market operations.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Generally, electricity goes through a three-step process before arriving at the end user for consumption. First, power is produced from generators that are usually located far from the load centres. Second, the power is transported over the transmission grid, which is composed of transmission lines, transformers, and other components, to the bulk load distribution substations. Third, from bulk load distribution substations, power is delivered to the individual customer sites using distribution lines.

The generation market is made up of two main players, namely the government (through the VRA and Bui Hydroelectric Company) and the IPPs. The VRA operates a total installed electricity generation capacity of 2,434MW. This is made up of two hydroelectric plants on the Volta River, with installed capacities of 1,020MW and 160MW at Akosombo and Kpong. The VRA also operates a 330MW Combined Cycle Thermal Plant at Aboadze, near Takoradi.

VRA, through its joint venture company, Takoradi International Company (TICO), jointly owned with TAQA, from Abu Dhabi in the United Arab Emirates, operates the 330MW combined cycle thermal plant at Takoradi. An additional development 132MW (T3) Magellan plant was commissioned at Aboadze in 2012.

The VRA also operates three major plants in Tema. The 110MW Tema Thermal 1 Power Plant, the 80MW Mines Reserve Plant, and the 220MW Thermal Plant located at Kpone, near Tema. The VRA is also planning additional development of 100–150MW of wind power at locations in the southern part of Ghana and up to 12MW of solar power generation in the northern part of Ghana. The VRA has begun the installation of a 2MW solar plant.

There are a number of IPPs operating in the generation space in Ghana, with a total installed generation capacity of 1,210MW. Some of these IPPs are Sunon-Asogli, Cenit Power Plant, Karpower Barge, Ameri Energy Power, Early Power, Amandi, among others. In the renewable energy sector, Africa Plantations for Sustainable Development is currently developing a eucalyptus plantation to power a proposed 60MW power plant for the national grid. Other companies providing renewable energy in Ghana include, Soater Solar Ghana Limited, Orion Energy Ghana Limited, Signik Energy Limited, among others.

After generation, electricity is transmitted. In 2006, GRIDCo was created out of VRA and was tasked with the wholesale power transmission. Currently, GRIDCo is the only company responsible for transmission of electricity in Ghana. There are no private players in the transmission sub-sector. GRIDCo operates the NITS and all power producing companies that intend to supply electricity over the national grid to the various load centres are required to enter into a connection agreement with GRIDCo in order to connect to the NITS.

Ghana has an extensive transmission system that covers all the regions of the country. The transmission system is an interconnected network that supports the bulk transfer of electricity over long distances from generation facilities to distribution centres called bulk power distribution substations. While generation's role is to make sure that electricity is available when customers demand it, transmission's role is to make sure electricity is available where customers need it.

This high-voltage transmission network connects generation sites in Akosombo, Aboadze, Takoradi, Kpong and Tema to the various load centres around the country. The network features over 4,000km of high-voltage electric transmission lines that connect to more than 40 substations.

The primary backbone of Ghana's transmission system is a network of 161kV, 69kV and 225kV lines and substations. This primary network is supplemented with a sub-transmission system of 34.5kV lines and a single 69kV line in the lower Volta region – the 34.5kV network is sometimes classified as distribution. The ongoing implementation of 330kV projects will see 330kV replacing 161kV as the primary transmission voltage. Under the Transmission System Rehabilitation Project which began in 2017, GRIDCo continued to improve operational reliability, security and control of transmission via various transmission system improvement projects. GRIDCo completed the Tumu-Han-Wa 161kV line and commenced the Kpandu-Kadjebi 161kV line project and the Aboadze-Prestea 330kV in 2017. In 2018, the government aims to complete the Aboadze-Prestea 330kV and Prestea-Kumasi 330kV transmission lines (each 70 per cent complete) and continue working on the Kumasi-Bolgatanga 330kV transmission line (about 50 per cent complete).

Ghana's high-voltage transmission system interconnects with Togo and Benin via a double circuit 161kV transmission line connecting the Akosombo Generating Plant in Ghana to Lome in Togo, and with the Ivory Coast via a single circuit 225kV 220km transmission line between Prestea substation in the Western Region of Ghana and Abobo substation. A small network of low-voltage lines connects Ghana to the border towns of Po and Leo in Burkina Faso and Dapaong in Togo.

These cross-border interconnections allow Ghana to trade power with its neighbouring countries. Regional efforts have been under way to integrate the transmission networks of Economic Community of

West African States (ECOWAS) member states to facilitate power trading among the regional entities. In this regard, the West African Power Pool (WAPP) has begun efforts to build regional transmission lines to interconnect major load centres.

The distribution system is a network of low-voltage distribution lines that deliver electricity directly to customers. The distribution system is generally considered to begin at the bulk power distribution substation where GRIDCo delivers power to the wholesale power buyers and end at the retail consumer's meter. Beyond the meter lies the customer's electric system, which consists of wires, equipment and appliances.

Electricity distribution and sale services are currently conducted by three companies: ECG; NEDCo, a wholly owned subsidiary of VRA; and Enclave Power Company Limited.

Substations on the transmission system receive power at higher voltages and lower them to lesser volts to feed the distribution systems. The distribution system consists of the poles and wires commonly seen in neighbourhoods. At key locations, voltage is again lowered by transformers to meet customer needs.

ECG operates in the southern part of Ghana comprising the Ashanti, Western, Eastern, Central, Western and Volta regions. The ECG network consists of about 77,000km of service lines, connecting 24 bulk supply points (BSPs).

ECG has more transformer capacity than the present peak demand but growth in demand in certain areas has resulted in under-capacity in those areas.

ECG serves about two million customers including residential, commercial and some large industries. These include nine bulk customers within the ECG network infrastructure. These bulk customers, even though they are embedded in the ECG system have a choice to opt to buy power from VRA or any other wholesale supplier except that they are required to pay for the use of the ECG system to reach their facilities.

NEDCo's operations cover largely the northern part of Ghana comprising the Brong-Ahafo, Northern, Upper East and Upper West regions. NEDCo's distribution network consists of 5,488km of medium-voltage lines and 7,832km of low-voltage (415V) lines connecting 24 BSPs. The NEDCo system has transformer installed capacity of 200MVA compared with its average peak load of 130MVA.

NEDCo operates at 34.5kV, 11kV and 400V voltage levels. NEDCo serves over 350,000 customers including residential, commercial and some large industries.

NEDCo has no bulk customers under its jurisdiction primarily because of the absence of large industrial customers in their areas of operation. The northern part of the country is comparatively underdeveloped.

Enclave Power Company Ltd is the only privately owned electricity distribution company, licensed by the Energy Commission in 2009 to distribute and sell electricity within the Free Zones Enclave at Tema Industrial Area. Enclave Power Company's network consists of nearly 3km of service lines connecting one BSP at the New Tema substation.

Enclave Power Company Ltd currently serves 17 industrial and large commercial customers operating within the Tema Free Zones Enclave. The consumption of the customers within the Enclave Power Concession was estimated at about 17.8GWh with maximum demand well in excess of 32.0MVA in 2008.

The power market is evolving and there is a lot of interest being shown in the sector by IPPs. GRIDCo as the market operator is working towards putting systems and procedures in place to support market operations.

The new market structure enables and encourages the free entry of IPPs into the generation market, creating a competitive generation market which, when combined with open access to transmission, also facilitates a bulk power trading market. The structure also emphasises decentralisation at the distribution level, with plans for eventually adding more distributors, each operating in a defined geographic service area. To further enhance a competitive market, the current government in 2017 approved the restructuring of the VRA to include a wholly owned entity to manage the hydroelectric facilities separately and invited private sector participation in the ownership and management of state-funded thermal power plants.

All bulk customers are permitted to purchase electricity directly from any wholesale suppliers of their choice at prices negotiated directly between the parties. In other words, the bulk customer has the prerogative to decide which wholesale supplier it is willing to contract with.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

By virtue of the Energy Commission Act, participation in any segment of the power sector, either for generation, transmission, wholesale supply, distribution or sale of electricity, requires a licence.

The Energy Commission is required to make a decision of any application within a maximum period of 16 days. Applications will be granted as a matter of course unless there is compelling reason not to do so. Such reasons must be founded on technical data, national security concerns, public safety or any other reasonable justification.

Generators wishing to be connected to the transmission system must enter into an electrical connection agreement or transmission services agreement with GRIDCo.

Under the Renewable Energy Act, every person who intends to engage in a commercial activity in the renewable energy sector requires a licence. The commercial activities in the renewable energy industry are production, transportation, storage, distribution, sale and marketing, importation, exportation and re-exportation and installation and maintenance.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The policy for the transmission market is to provide adequate, safe and reliable electricity transmission network. To achieve this, the Board of the Energy Commission in 2008, put in place the Electricity Transmission (Technical, Operational and Standards of Performance) Rules 2008 (the Transmission Rules). The purpose is to establish the requirements, procedures, practices and standards that govern the operation and use of the NITS.

Under the Transmission Rules, GRIDCo is required to operate the NITS to offer fair, transparent, open access and non-discriminatory services to grid participants.

In order to connect to the NITS, the operator of a generation facility is required, among others, to design, install and maintain its plant and equipment to meet the requirements of the connection requirements of GRIDCo. Further, the operator must operate its plant and equipment in accordance with dispatch instructions of GRIDCo and to meet system performance and reliability requirements in a manner that is consistent with the reliable operation of the transmission system.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Available renewable energy sources

In Ghana, the government has policy and legislation frameworks to encourage power generation based on alternative energy sources. It is government policy to increase access to modern forms of energy. The 2018 National Budget noted that the Ministry's goal in 2018 is to increase the penetration of renewable energy in the energy generation mix and to promote distributed solar power for government and public buildings.

Ghana has a sub-sector for renewable energy. According to the Renewable Energy Act, renewable energy means includes energy obtained from non-depleting sources including wind, solar, hydro, biomass, bio-fuel, landfill gas, sewage gas, geothermal energy and ocean energy. Ghana is well endowed with renewable energy resources, particularly biomass, solar, wind energy resources, and to a limited extent mini-hydro.

The goal of the renewable energy sub-sector is to increase the proportion of renewable energy, particularly solar, wind, mini hydro and waste-to-energy in the national energy supply mix and to contribute to the mitigation of climate change.

The development and use of renewable energy and waste-to-energy resources have the potential to ensure Ghana's energy security and mitigate the negative climate change impacts of energy production and use as well as solve sanitation problems.

Biomass is Ghana's dominant energy resource in terms of endowment and consumption. Biomass resources cover about 20.8 million hectares of the 23.8 million hectare land mass of Ghana, and is the source of supply of about 60 per cent of the total energy used in the country. The vast arable and degraded land mass of Ghana has the potential for the cultivation of crops and plants that can be converted into a wide range of solid and liquid biofuels.

The production, transportation, sale and pricing of woodfuels are all undertaken by the private sector except for taxes and levies, which are regulated by local government authorities. The woodfuels business will continue to be operated and managed by the private sector.

The development of alternative transportation fuels such as gasohol and other biofuels can provide substitute fuels for the transportation sector and help diversify and secure future energy supplies of Ghana.

The major challenge in biomass energy supply is how to reverse the decline in the wood-fuel resource base of the country and further sustain its production and use by improving the efficiency of production and use.

The biomass policy focuses on improved production and efficient use of biomass in the short term while increasing regeneration and fuel substitution in the medium to longer term, as well as shifting from the use of biomass to alternative sources of energy.

By virtue of its geographic location, Ghana is well endowed with solar resources that could be exploited for electricity generation and low heat requirements in homes and industries. Solar energy utilisation has, however, been limited owing to its comparatively higher cost.

The government is committed to improving the cost-effectiveness of solar and wind technologies by addressing the technological difficulties, institutional barriers, as well as market constraints that hamper the deployment of solar and wind technologies.

A major challenge in the development of solar and wind is the high cost of these energy sources owing to the current state of their technology.

Waste-to-energy projects have become a very important mechanism for the management of the growing sanitation problem facing urban communities as well as a means of contributing to energy supply and security. Significant amounts of wastes are generated in Ghana. These include municipal waste (both solid and liquid), industrial waste and agricultural waste.

There are many energy technologies which can convert these waste materials into electricity, heat and fuel. The conversion technologies include combustion, gasification, pyrolysis, anaerobic digestion, fermentation and esterification.

Some waste-to-energy technologies that have been developed in Ghana are anaerobic fermentation of municipal waste and industrial liquid wastes to produce biogas for heating and electricity generation, combustion of solid wastes to produce electricity in combined heat and power (CHP) systems.

Government policies and legislative framework

The Renewable Energy Act is the most recent energy related legislation geared towards the encouragement of Ghana's drive to boost the renewable energy sector in Ghana.

The key policy focus is to engage Ghanaian engineers and scientists to cooperate with other experts to bring down the cost of renewable energy technologies in order to make them competitive as well as creation of fiscal and pricing incentives to enhance the development and use of renewable energy. Renewable energy technologies that are competitive will be promoted.

The government intends to diversify the national energy mix by implementing programmes to support development and use of renewable energy sources. Under the Renewable Energy Act, there are financial incentives (including a lucrative feed-in tariff) for renewable energy projects.

More specifically, the PURC has the power to mandate feed-in tariffs for renewables which includes a requirement that, for each energy purchase, an offtaker will have to obtain a certain percentage from renewable sources to benefit. The commission is tasked with recommending exemptions from taxes, duties and levies with respect to machinery, equipment and other input into renewable projects.

The feed-in tariff set by the PURC remains in force for a 10-year period and subsequently subject to review, every two years thereafter.

Free zone developers and enterprises granted licences under the Free Zones Act are exempted from the payment of income tax on profits for the first 10 years. The income tax rate after 10 years does not exceed a maximum of 8 per cent of the profit.

The benefits enjoyed by operators in the free zones include guarantee against expropriation, unconditional transfers of profits, dividends, charges and fees, remittances and other payments through an authorised dealer bank in free convertible currency.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Environmental concerns are a prominent part of every industry today and the electric power industry is no exception. Climate change emerged on the political agenda in the mid-1980s with the increasing scientific evidence of human interference in the global climate system and with the growing public concern about the environment.

Electricity supply is currently vulnerable to climate change. About 67 per cent of electricity generation in the country is from hydropower and 33 per cent is from thermal generation using diesel (Energy Statistics 2006), with a small contribution (less than 1 per cent) from small-scale solar systems. By 2020 the energy supply is expected to be more diversified, according to the National Energy Plan for 2006–2020, with a larger contribution from natural gas and renewables, and potentially from nuclear power.

The production and use of energy impact on the environment and global climate in varying degrees. The exploitation of biomass for energy purposes results in deforestation, while the use of fossil-based fuels contributes to climate change.

Ghana's participation in the Stockholm Conference in 1972 signified the beginning of the country's desire and willingness to make concerted and conscious efforts at the management of its environment.

At the Earth Summit in Rio de Janeiro 20 years later, Ghana and the world moved closer to the objective of living in harmony with our environment by signing the Rio Conventions.

Before a person undertakes any activity or operation in relation to electricity, that person must obtain the necessary environmental approvals and permits valid for a period of 18 months. The EPA will not grant an environmental permit unless the applicant submits an environmental impact assessment (EIA).

In addition to the granting of a licence by the Energy Commission, before any project can take place, the EPA must give a permit for the project after a detailed environmental impact assessment has been carried out as regards the potential effects of the project on the environment.

Ghana generates most of its power from hydroelectric facilities, which do not cause emissions of harmful elements into the atmosphere. But their large reservoirs have some impact on the environment by flooding large areas, dislocating people, changing the ecology and causing silt formation.

Transmission lines may require intrusion on natural areas. They may be visible from scenic areas or intrude on residential neighbourhoods. They may destroy or disrupt wildlife habitats. Therefore prospective operators in the electricity market seeking to obtain licence must provide environmental disclosure to the Energy Commission. Prior to construction, the applicant must acquire siting clearance (siting permit).

The applicant for licence must provide an EIA report certified by the EPA and an environmental permit or permanent environmental certificate issued by the EPA.

The government's policy on climate change is that there will be a shift towards generation from renewable energy sources. Thermal generation using crude oil will shift towards the use of natural gas. Consumption of power will decline owing to energy conservation methods and cost of electricity might increase owing to the high cost of generation from using renewable energy technologies.

The medium-term policy objectives for the achievement of the energy sector goals include steps to minimise environmental impacts of energy supply and consumption through increased renewable energy and efficient energy delivery.

The government's strategic goal is to ensure that energy is produced, supplied and used in an environmentally sustainable manner. The strategies will focus on the conduct of strategic environmental assessment and EIA studies and social impact assessment studies of all energy projects, with associated adaptation and mitigation plans for environment and climate change.

The government's policy on climate change in relation to the energy sector includes the following resolutions:

- to adopt an inter-sectorial approach to energy planning and development that integrates energy development with energy conservation, environmental protection and sustainable utilisation of renewable energy resources;
- to reduce the pressure on forests for wood-fuels and encourage the use of renewable energy resources in order to reduce the use of fossil energy;
- to ensure that rigorous feasibility studies are undertaken for hydroelectricity facilities and other significant generating facilities all of which must be subjected to environmental impact assessment; and
- to maximise the use of the nation's hydrocarbon resources in the production and distribution of energy.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Ghana's Renewable Energy Act provides a regulatory framework which supports electricity storage, research and development. The regulatory framework mandates anyone who seeks to engage in any storage or other commercial activity in the renewable energy industry to obtain a licence to be granted by the Energy Commission. The licence may require the installation of a suitable facility for the storage of the renewable energy, which suitability shall be determined by the Energy Commission.

The establishment of the Renewable Energy Fund and Energy Fund is to promote research and development of storage solutions. The objects of these funds is basically to provide financial resources for the promotion, development, sustainable management and utilisation of electricity and renewable energy sources.

The funds are primarily applied to the provision of financial incentives, feed-in tariffs, capital subsidies, equity participation, etc, for projects related to the development and utilisation of energy resources including storage solutions.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Policy framework

In 1964, Ghana decided to undertake the Ghana Nuclear Reactor Project. The project was intended to introduce nuclear science and technology into the country and to exploit the peaceful applications of nuclear energy for national development.

At present, the government's policy is to diversify the energy mix by exploring options to develop nuclear energy. The goal is to develop nuclear power as an option for electricity generation in the long term.

Ghana has participated and is still participating in coordinated research projects with the International Atomic Energy Agency (IAEA) which helps to increase the nuclear knowledge base of the country. Ghana Atomic Energy Commission (GAEC) is in close contact with other International Nuclear Agencies such as Global Nuclear Energy Partnership.

Nuclear Power Planning Committee (NPPC) involving stakeholder institutions was established in 2008 for the formulation of the nuclear power policy and development of the basic elements of nuclear infrastructure. Based on the NPPC's recommendations, the government took a cabinet decision in 2008 to introduce nuclear energy into Ghana's energy mix.

Human resource capacity building currently in place is in two forms (ie, degree and non-degree awarding programmes).

In the degree awarding category, the GAEC has established a Graduate School of Nuclear and Allied Sciences in collaboration with the University of Ghana with assistance from the IAEA to award masters and PhD degrees in nuclear science.

The non-degree training programmes involve the use of the 30kW research reactor in teaching and training of scientists and technicians in the field of reactor operation, physics, safety, engineering, maintenance etc.

IAEA has also formulated technical cooperation projects such as GHA0008; planning for sustainable energy development, GHA0009; human resource development and nuclear technology support, GHA0011, etc to up the country's nuclear knowledge base.

Ghana participates in IAEA training courses and workshops on national, regional and international levels.

Legal and regulatory framework

The Atomic Energy Commission Act 2000 (Act 588) provides the legislative framework for nuclear power in Ghana. The Act deals with national energy policy including economic and commercial considerations, with a clear designation of responsible institutions or bodies, including their relationships with nuclear power.

The Atomic Energy Commission is the independent regulatory authority responsible for the safety, security and safeguards of nuclear power. This includes a system of licensing, inspection and enforcement covering all subject areas of nuclear law.

At the international level, there are some basic international legal instruments that Ghana has to ratify and implement to show commitment to peaceful use and application of nuclear technology.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction and operation of transmission networks require the acquisition of an electricity transmission licence.

According to the Transmission Rules, the transmission system comprises electricity plant and equipment within the borders of Ghana that function or are operated at any voltage higher than 36kV as well as any associated feeder or supply equipment that are for shared or for common use.

The ETU is the exclusive and independent operator of all transmission assets irrespective of ownership and plays the central role in respect of activities related to the NITS. The ETU transports electricity from the producers to bulk consumers. GRIDCo is the sole owner and operator of the NITS.

All prospective participants in the deregulated segment of Ghana's electricity supply industry must obtain a transmission licence from the Energy Commission. They must also negotiate and conclude interconnection service agreement with the ETU.

The ETU and all grid participants must comply with all relevant laws, the requirements of the Grid Code, permits, prudent utility practice and applicable international standards. Generators wishing to be connected to the transmission system must enter into an electrical connection agreement or transmission services agreement with GRIDCo.

To ensure transparency and non-discriminatory access to the relevant information, the ETU must make available to the public at its offices the procedures for obtaining and terminating transmission interconnection services agreements with any licensee.

A transmission licence authorises the licensee: to monitor and control the operation of the national interconnected network to provide open access transmission and interconnection services; and to provide open access transmission and interconnection services to operators domestically and internationally.

There are three stages in acquiring an electricity transmission licence. At stage one the prospective operator must acquire a provisional licence.

At stage two, the prospective licensee must obtain a siting clearance (siting permit) and construction permit (authorisation to construct). A construction permit authorises the operator to physically construct its machinery and plants on the approved site. Stage three

involves the acquisition of an operational licence (authorisation to operate). This authorises the operator to operate.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Every bulk power customer (distribution utilities, companies, etc) is eligible to obtain transmission services at a fee if it satisfies all established technical and operational requirements.

A grid participant must be a legal entity having a valid connection agreement with the ETU for the purposes of:

- constructing, owning and providing NITS infrastructure or ancillary services;
- injecting, wheeling, or offtaking power for its own use or for retail; or
- exchanging power either with the electricity networks of neighbouring countries or within the WAPP.

By virtue of section 11 of the Energy Commission Act, participation in any segment of the power sector, either for transmission, wholesale supply, distribution or sale of electricity, requires a transmission licence.

A transmission licence is subject to the conditions determined by the Energy Commission. The commission is required to make a decision of any application within a maximum period of 16 days. Applications will be granted as a matter of course unless there is compelling reason not to do so. Such reasons must be founded on technical data, national security concerns, public safety or any other reasonable justification.

A distribution company or bulk customer who wishes to receive power from the NITS must design, construct and operate its network connected to the NITS in accordance with prescribed standards and in accordance with the instructions of the ETU.

GRIDCo is responsible for the good governance and management of the NITS in accordance with the Grid Code and guided at all times by generally accepted best practices for an independent system operator.

All wholesale suppliers, distribution companies and permitted bulk customers have the opportunity to connect to the NITS and have fair and equitable access to the services provided by the ETU.

No facilities can be connected without a minimum arrangement for communications, metering and protective relaying being in place.

Any operator that wants to obtain transmission services must negotiate and execute a Connection Agreement with the ETU before the completion of the installation, erection or construction of the connection to the NITS. The Connection Agreement sets out the terms and conditions for connection to the NITS and provision of service.

The ETU is empowered to spell out its own transmission conditions and charges in the transmission agreement subject to approval by the PURC.

The Energy Commission in consultation with the PURC prescribes standards of performance for the supply, distribution and sale of electricity to consumers by licensed public utilities. The standards of performance include matters relating to voltage stability, maximum number of scheduled and unscheduled outages, number and duration of load shedding periods and metering.

Every grid participant that intends to establish and connect to the NITS any new or modified equipment or network that it owns, operates or controls must liaise with the ETU and the NITS asset owner, and obtain the required approval from the Energy Commission.

To avoid discrimination in the transmission of electricity, the ETU must develop and publish in detail all the requirements, qualifications and administrative procedures to be fulfilled or followed by those seeking to be provided services by the ETU.

A grid participant must construct, operate and maintain all equipment that are part of its facility in accordance with the requirements of the Grid Code, prudent utility practice and applicable national and international laws, protocols and standards.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Ghana's transmission policy objective is to provide adequate, safe and reliable electricity transmission network. To achieve this, the National Energy Policy requires the government to support private sector co-financing with government for grid extension to designated franchised zones, increase funding from government and other multilateral and bilateral sources for the National Electrification Scheme and to support new service connections for electricity in the rural areas. The Rural Electrification Programme has seen 289 out of a targeted 2,185 communities connected to the national grid and the 2018 national budget reported the national electricity access rate increased from 83.24 per cent in 2016 to 83.62 per cent in 2017. The goal is to connect a total of 1,796 communities in 2018. There are many government incentives to encourage expansion of the transmission grid. For instance, there are tax exemptions and reliefs, easy clearing at the ports and the like meant to encourage expansion of the transmission grid.

Ghana's exchange controls were relaxed substantially in 2006, so that now, the only necessary prerequisite for the repatriation of funds is to repatriate funds through an authorised dealer bank. These banks report foreign exchange transactions to the Bank of Ghana, but no exchange controls are imposed.

In 2013, Ghana passed the Ghana Investment Promotion Centre Act 2013 (Act 865) (the GIPC Act). Among others, the GIPC Act is to encourage and promote investments in Ghana and to provide an attractive framework and a transparent, predictable and facilitating environment for investments into various sectors (including the energy sector) in Ghana. Foreign investors are now required to register with the Ghana Investment Promotion Centre (the GIPC) before commencing business operations in Ghana. Upon registration, a foreign investor is entitled to receive investment support from the GIPC and benefit from the investment incentives under the GIPC Act.

The GIPC Act provides an express guarantee for the repatriation of dividends, foreign debt service costs and distributions of equity following the winding-up of the business. Repatriations from Ghana can be made in freely convertible currency without any restriction insofar as the repatriation is done through a licensed bank.

Further, the GIPC Act, provides guarantee against expropriation or nationalisation by the government. A foreign investor cannot be compelled by law to cede his or her investment to another person. Every nationalisation or expropriation must be done under a law that provides for payment of fair and adequate compensation and a right to access the High Court of Ghana for determination of investor's interest or right and the amount of compensation to which the investor is entitled.

The government has also shown commitment to provide support for the expansion of its transmission facilities by providing guarantees and comfort letters, subject to parliamentary approval, to foreign investors who enter into power purchase agreements and other forms of support agreements with public utilities in Ghana. The government is also minded to provide special tax reliefs, subject to parliamentary approval, to foreign investors who invest resources in expanding the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Rates and other economic terms and conditions for transmission services are determined by the PURC. The technical terms for the provision of transmission services are determined by the Energy Commission. The Grid Code that contains technical standards and requirements for transmission services.

The only licensed utility that provides transmission services is GRIDCo. All grid participants are required to enter inter into transmission agreement with GRIDCo before they can operate. All rates set by GRIDCo are subject to approval by the PURC.

The PURC provides the guidelines for fixing rate to be charged by public utilities for their services. In doing this, the PURC takes into account such factors as the interests of the consumer, the interests of an investor, the cost of production of the service, and the assurance of the financial integrity of the public utility.

A public utility cannot directly or indirectly demand or receive a higher rate than the rate approved by the PURC. A public utility may, with the written permission of the commission, demand and receive from a consumer a special rate agreed to by the public utility and the consumer.

The PURC may also fix a uniform rate throughout the country, a region or district for a service provided by a public utility. In doing this, the commission may take into account the population distribution in the country, the need to make the best use of a natural resource of the country, and the economic development of the whole country.

All revision of rates or new rates chargeable in respect of new services must be filed with the PURC at least 60 days before they become effective.

Before approving a rate, the PURC is required to give the public utility and consumers affected by the rate a reasonable opportunity of being heard. Rates approved by the PURC must be gazetted. Recently, in 2018, the PURC reviewed and approved utility tariff reductions for various electricity customer categories effective 15th March 2018. However, in spite of this reduction in electricity tariffs, Ghana still remains comparatively high on the price index for electricity tariffs in West Africa.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The regulators (the PURC and the Energy Commission) are responsible for the reliability of the transmission grid. The PURC ensures reliability by approving tariffs. The Energy Commission, on the other hand, ensures that licensing requirements, procedures, practices and standards are enforced in the NITS.

The Energy Commission monitors the operations of the transmission utility to ensure that transmission services are reliable. The PURC also monitors performance, quality of service, efficiency and to ensure compliance with technical standards.

To maintain stable and secure operation of the NITS to provide the expected standard of service for the benefit of all grid participants, certain minimum technical, design and operational criteria are to be met by all grid participants seeking connection to the NITS.

GRIDCo is responsible for wholesale power supply reliability from generation and transmission to delivery at the bulk power distribution centres.

To assure reliability of the transmission grid, transmission licences are granted subject to conditions. The Energy Commission monitors and enforces compliance with all licence conditions. A contravention of the licence conditions gives rise to penalties.

As part of the compliance monitoring procedure, the licensee is required to submit to the Energy Commission a detailed corporate performance statistics half-yearly and an annual report at the end of each financial year. The performance statistics includes the benchmarks stipulated in all the relevant legislation and Codes as well as the benchmarks stipulated in the respective licences.

Authorised officers of the Energy Commission have the right of free access to the premises or operational area of the licensee for the purpose of inspecting and ensuring compliance with the licence conditions.

Prior to suspension or cancellation of a licence, the defaulting licensee must be given an opportunity to respond to the commission's written complaint and the proposed action of remedy.

The commission may cancel a licence that has been granted but has not been utilised within one year from the date of issue after giving 30 days' notice to that effect. The ETU monitors and reports to the Energy Commission the performance of the NITS in terms of quality and reliability (ie, adequacy and security) of supply.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

To construct and operate distribution networks, an operator requires an electricity distribution licence issued by the Energy Commission. The VRA is exempted from the requirement for a licence to produce and supply wholesale electricity from the hydropower installations on the Volta River basin. An electricity distribution licence is site-specific.

In Ghana, a distribution licence includes a sale licence. This is because the electricity distributors also sell electricity to consumers. A distribution and sale licence authorises the licensee to operate a distribution network, and to distribute, sell or retail electricity.

There are three stages for the acquisition of authorisation to construct and operate distribution networks. Stage one involves the acquisition of a provisional electricity distribution licence. An applicant must submit the required documents to the Energy Commission.

Stage two involves the acquisition of a siting clearance and construction work permit. An applicant must submit the required documents to the Energy Commission. Stage three is the final stage and involves the acquisition of authorisation to operate.

A distribution licence is granted on the conditions determined by the Energy Commission and includes a condition that the rates or charges for services are subject to the approval of the PURC.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

All power consumers, especially the bulk customers or special load customers have access to the distribution grid. The distribution utility must ensure that all requirements are met before granting access.

A participant seeking to engage in embedded electricity generation or distributed generation services must negotiate and conclude a distribution network access agreement with the relevant licensed distribution entity. This must be done while seeking a licence from the Energy Commission.

The conditions for connection agreements must comply with the Grid Code. The Energy Commission facilitates these negotiations as and when required.

Licensed distribution service providers must connect embedded electricity installations to their distribution network.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Under Ghana's National Energy Policy, the policy direction of the government in respect of the distribution infrastructure is to seek adequate investment to improve the electricity distribution network and thereby reduce high system losses and improve poor quality of electricity supply. Accordingly, the policy requires government to assist distribution utilities in regaining their financial health, encourage distribution of utilities to seek commercial loan financing to modernise their infrastructure, encourage the injection of investment capital from private sources and from the domestic market in the medium to long term. There are many government incentives focused on encouraging expansion of the distribution network. For instance, there are tax exemptions and reliefs, financial incentives, feed-in tariffs, capital subsidies, equity participation, easy clearing at the ports and the like meant to encourage expansion of the distribution network especially in respect of renewable energy.

First, the Energy Commission and the PURC (the Regulators) have the authority to establish and enforce standards of performance for public utilities engaged in the distribution and sale of electricity.

Second, the government, on its part is committed to improving and expanding the distribution network in order to achieve its universal accessibility object by 2020. In that light, the government is minded to grant guarantees, comfort letters and tax benefits, subject to parliamentary approval, to foreign investors in the power sector over a period of time.

Third, foreign investors also benefit from the incentives under the GIPC Act, including guarantees from expropriation, repatriation of dividends, capital and debt costs in free convertible currency through a licensed bank.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Rates and other economic terms and conditions for distribution services are determined by the PURC. The technical terms for the provision of distribution services are done by the Energy Commission.

The Energy Commission in consultation with the PURC prescribes standards of performance for the supply, distribution and sale

of electricity to consumers by licensed public utilities. The standards of performance include matters relating to voltage stability, maximum number of scheduled and unscheduled outages, number and duration of load shedding periods and metering.

An electricity supplier must ensure that the voltage at the point of supply to a customer's premises or electrical installation is within the prescribed voltage levels. The voltage levels are 230V, 400V, 11kV, 33kV or 34.5kV.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

In Ghana, an electricity sale licence is required for the sale of power to customers. Distribution companies hold both electricity distribution licence and electricity sale licence. This is because the electricity distributors also sell electricity to consumers.

A distribution and sale licence authorises the licensee to operate a distribution network, and to distribute, sell or retail electricity.

There are two stages involved to acquire an electricity sale licence. These are the acquisition of provisional licence and acquisition of operational licence (authorisation to operate).

Sale of power to consumers in Ghana is done by three distribution companies, namely ECG, NEDCo and Enclave Power. The authorities which grant approvals are the Energy Commission and the PURC.
There are two types of markets, namely, the regulated market and deregulated market.

Regulated market: this includes the distributors and sellers that are directly supervised by the PURC. Their tariffs are set by the PURC.

Deregulated market: this is made up of bulk consumers or customers with average demand of 3MVA or annual consumption of 6GWh. They must obtain a permit as bulk customers from the Energy Commission before they can negotiate with suppliers or generators of electricity.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In Ghana, distribution of power and sale of power are done by the same entities. The PURC determines distribution or sale service charges. Because distribution and sale are done by same entities, the tariff for sale of power is embedded in tariff for distribution of power. Power sales tariffs are the same as the DSC as approved by the PURC.

Wholesale suppliers are entities that generate power and feed into the grid. They also sell power to bulk customers. The tariffs to be charged by the licensee for its services are determined by the PURC.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The rates or charges for wholesale supply of electricity are determined by the PURC. The Energy Commission grants wholesale supply licence to public utilities to operate facilities and installations for the wholesale supply of electricity. The wholesale supply licence permits the public utility to produce electricity for supply to distribution companies and bulk customers.

A wholesale supply licence will not be granted unless the Energy Commission is satisfied that the grant will promote the safe, reliable and economic operation of the interconnected transmission systems in the country.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

There are standards of performance to be observed by the utilities. Except where a licence or authorisation given to a public utility is revoked, suspended, cancelled or expires, a public utility cannot refuse to provide its service generally without the prior written permission of the Energy Commission.

Licensed public utilities are required to maintain their equipment and property used in the provision of the service in a condition that enables them to effectively provide their services. They must make the reasonable effort necessary to provide to the public a service that is safe, adequate, efficient, reasonable and non-discriminatory.

Public utilities must submit monthly bills to their consumers. There are strict rules governing the termination of services by public utilities.

Licensed public utilities are required to make the repairs, changes, extensions and improvements in or to the service that are necessary or proper for the efficient delivery of the service to the consumer. Licensed public utilities are subject to penalties for failure to discharge their service obligations including payment of compensation to consumers who suffer on account of that failure.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Energy Commission and the PURC are the regulatory bodies established to ensure the proper functioning of all players in the energy sector and to create the requisite conducive environment for the protection of private investment in the sector.

The Energy Commission is mandated, among other things, to licence and regulate the technical operations of service providers in the electricity supply industry. The commission performs these regulatory functions through elaborations and enforcement of licensing conditions, technical rules of practice and standards of performance rules.

On the other hand, the PURC is responsible for the economic regulation of the electricity sector. Its main function is to set tariffs and monitor compliance with performance standards of the service providers in the power supply chain.

The PURC is responsible for approving electricity tariffs, monitoring quality of service and consumer protection.

23 Scope of authority

What is the scope of each regulator's authority?

The Energy Commission has responsibilities for the licensing of operators and setting technical standards for the power sector. The Energy Commission also advises the Minister for Energy on energy sector policy and planning issues.

The statutory functions of the Energy Commission include to recommend and advise the Minister for Energy on national energy policies; to prepare, review and update periodically indicative national plans to ensure that reasonable demands for energy are met and to grant licences to public utilities.

The Energy Commission is required to establish and enforce uniform rules of practice and standards of performance for public utilities engaged in the transmission, wholesale supply, distribution and sale of electricity and natural gas.

The Energy Commission also has a role to play in developing and promoting renewable energy sources in Ghana. The commission is independent.

The PURC's regulatory mandates are:

- to provide guidelines on rates chargeable for electricity services;
- to examine and approve the rates;
- to protect the interests of consumers and providers of utility services;
- to monitor the standard of performance of the utilities; and
- to promote fair competition.

Under the Energy Commission Act, the PURC is also required to approve charges for the supply, transportation and distribution of electricity.

The PURC approves rates and charges chargeable in respect of renewable energy sources.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Energy Commission was established by the Energy Commission Act. The source of funds for the commission is the Energy Fund. The commission manages and administers the fund. Parliament is statutorily required to annually provide the commission with such monies as may be necessary for the efficient performance of the functions of the commission.

The President appoints the commissioner of the Energy Commission. Appointment of the Executive Secretary, other staff and employees of the commission is done by the President acting in accordance with the advice of the commission given in consultation with the Public Services Commission.

The PURC is established by the PURC Act. The President appoints the commissioner and members of the PURC. The commission is not subject to the direction or control of any person or authority in the performance of its functions. The President also determines their allowance.

The PURC Act specifies four sources of funding for the PURC namely, government subventions, loans granted to the commission, monies accruing to the commission in the course of the performance of its functions, and grants it may obtain.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

A complaint that relates to the provision of utility service or rates chargeable for service provided by a public utility is required to be referred to the PURC for investigation and settlement. The PURC may apply to the High Court for the enforcement of its decision or direction.

Persons who are dissatisfied with a decision of the Energy Commission in relation to a licence application may have the decision reviewed by the commission.

An application for the review of a decision is required to:

- be made in writing;
- set out the decision to which the application relates;
- set out in detail the grounds on which the applicant seeks a review of the decision in question;
- be accompanied by any information or evidence that the applicant considers should be taken into account by the commission; and
- be lodged with the commission within 14 days after the decision is given.

Once the application for the review of a decision has been received, the commission:

- may stay the execution of the decision to which the application relates;
- will take a decision on the review within 30 days;
- may confirm, amend or substitute the decision; and
- will give the applicant written notice of the commission's decision, and the reasons for the decision on the review.

An applicant who is dissatisfied with a decision of a review by the Energy Commission has a right to appeal to the Minister for Energy, and subsequently to the courts. The appeal must be made within 14 days after receipt of the written notice of the decision appealed against.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Energy Commission has the power to approve or block mergers or other changes in control over businesses in the sector. The commission requires that all operators are licensed. Licences granted by the commission are not transferable except with the prior written approval of the Energy Commission. Whenever a merger occurs, a new licence has to be applied for.

However, no licence is required where the entities were named, and the fact of the merger was mentioned, in the regulations of the licensed operator or in the application for the licence.

To avoid double licensing in the event of a merger, the merging entities are required to prepare a single corporate module or structure that reflects the merger.

Update and trends

In August 2014, the government of Ghana entered into the Millennium Challenge Compact with the United States of America (acting through the Millennium Challenge Corporation that provided a grant of up to US$498,200 for, among other things, a five-year economic development programme to fund investments in Ghana's power sector (the Compact). The Compact entered into force in September 2016 and the first tranche of US$308.2 million was made available to the Ghana government. In September 2018, the government of Ghana satisfied the conditions to access the second tranche of Compact funds in the amount of US$190 million.

In line with the terms of accessing Tranche II funding under the Compact, the management of ECG was opened up for private sector participation. The proposal for new private management of the ECG was won by a consortium of private investors (with 51 per cent Ghanaian shareholding in the ownership of the Concession) led by the Manila Electric Company of the Philippines (Meralco). The concession agreement between the government of Ghana and Meralco was placed before the parliament of Ghana and approved in July 2018.

Under the concession agreement, Meralco will have the right to operate and expand the power distribution network in Ghana, which is expected to significantly improve the technical and commercial performance of ECG. The expectation is that the implementation of the concession agreement will reduce total distribution system loss, which will translate into substantial reduction in electricity tariffs as the revenue of the utility increases, and the power supply will become more reliable over the next five years.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

An operator must apply to the Commission for permit where:

- there is any change in its directors or corporate structure;
- there is transfer of a part of the utility; or
- there is modification of the plant or capacity.

A licensed operator that intends to undergo a merger must state that in its application for a licence specifying the new corporate identity. The non-licensed company merging with a licensed operator must demonstrate to the commission that it has all the technical and financial capacities to operate as an independent power operator.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Ghana's energy sector is dominated by state-owned enterprises. Transmission and distribution of electricity are under state monopoly, with minor private participation in distribution. The current legal regime does not make any express provisions for the regulation of anticompetitive practices in the electricity market. However, the PURC is mandated to promote fair competition among public utilities. The PURC is responsible for competition regulation and quality.

Anticompetitive practices occur only in the wholesale market. The independent system operator has the authority to prevent these practices in the electricity sector. The Energy Commission has the power to withdraw the licences of operators or refer operators to the Attorney-General for prosecution.

The Energy Commission is empowered to promote and ensure uniform rules of practice for the transmission, wholesale supply, distribution and sale of electricity.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The market rules that exists in the wholesale market are the standards that are applied in determining anticompetitive or manipulative conduct. Currently, GRIDCo has a draft version of the market rules.

In determining anticompetitive or manipulative conduct, the Energy Commission and the PURC apply their own benchmarks. They also apply the various legislative instruments and licensing conditions as well as international best practices.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The PURC has the statutory power to handle competition in the electricity market. The system operator handles the wholesale market.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no limitations or special requirements on acquisitions of interests in the electricity sector by foreign companies. The operator must be registered in Ghana. An operator must include in its corporate structure all the foreign companies it intends to partner or deal with (eg, for supply of equipment).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Authorisation is required to operate interconnectors in line with the NITS for transmission of electricity throughout the country. An operator requires a licence granted by the Energy Commission authorising the licensee to operate the interconnector.

This imposes conditions for the safe, reliable economic dispatch and operation of the NITS for the transmission of electricity without discrimination to a wholesale supplier of electricity. Similarly, conditions are imposed in that tariffs to be charged by the licensee for its services are subject to the approval of the PURC.

Even upon the grant of a licence for distribution and sale of electricity, it must be shown that the licensee has the capability to interconnect distribution facilities or installations with transmission systems in the designated area.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Ghana's imports and exports of electricity are driven primarily by two factors: the need to meet growing peak demand and the variability of the Volta River flow rates. The primary electricity trading partners are Ivory Coast and Togo, with which electricity is traded via the existing transmission interconnections. For example, Ghana has an exchange agreement with the Ivory Coast for up to 200–250MW of power import or export as the need arises on either side.

In December 2003, Ghana signed the ECOWAS Energy Protocol, which calls for the elimination of cross-border barriers to trade in energy, and encourages investment in the energy sector. This agreement, along with the WAPP agreement, is expected to lead to a more active regional import and export power market.

A grid participant wishing to interconnect the NITS to the electricity networks of neighbouring countries in the WAPP must do so in accordance with the provisions of the Grid Code, the ECOWAS Energy Protocol and the WAPP Operation Manual.

These agreements have potentially significant benefits for Ghana. Demand for electricity is growing rapidly throughout the region, which simultaneously creates a larger market for Ghana to trade power within the larger ECOWAS region.

The ECOWAS Regional Electricity Regulatory Authority (ERERA) is the regulator of regional cross-border trade of electricity in West Africa.

There are rules that are under development by ERERA. The Energy Commission licences operators that intend to export power. WAPP is an ongoing project.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The law permits a public utility to arrange for the joint use of its equipment and facilities by another public utility. This may be done for a reasonable compensation where the arrangement is convenient or necessary and the use will not result in damage to the owner or other users of the equipment.

The PURC has the power to direct that two or more public utilities enter into an arrangement for joint use of equipment and facilities for the provision of a service. The PURC may exercise this power only when it is satisfied that the arrangement:

- is necessary to provide safe, adequate and economic service to consumers;

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- will not result in irreparable damage to the owners or users of the equipment or facilities; and
- is just and reasonable having regard to the circumstances of the case.

The Energy Commission must be informed of all operations of affiliates for the commission to determine whether the licence of the operator covers the affiliates. The operator must submit any existing agreement or material contract between it and its affiliate or any other company to the Energy Commission.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

In the event of a dispute relating to transactions between affiliates, the parties may lodge complaints with the PURC for settlement. In enforcing the restrictions relating to dealing with affiliates, the PURC may, on a complaint from a public utility or consumer affected by the arrangement, modify or revoke an earlier directive.

The Energy Commission may arbitrate and settle a dispute arising between licensees where the parties cannot reach an agreement.

India

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Trilegal

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Constitutional framework
The seventh schedule of the Constitution of India sets out the subjects on which Parliament and the state legislatures can frame legislation, and demarcates such subjects in three lists, namely Union List, State List and the Concurrent List. While Parliament and the state legislatures legislate exclusively upon subjects mentioned in the Union List and the State List respectively, the subjects mentioned in the Concurrent List can be legislated upon by both. However, in case of a conflict between the laws made by the state legislatures and Parliament on the same subject matter under the Concurrent List, the state legislation will be void to the extent it is inconsistent with legislation made by Parliament. Electricity is a subject mentioned in the Concurrent List.

Legislative framework
The Electricity Act 2003 (the Electricity Act) is the parent legislation governing the electricity sector in India (other than for nuclear energy, which is governed by the Atomic Energy Act 1962). The Electricity Act consolidated various laws governing the electricity sector in India and introduced key reforms such as:

- restructuring of state electricity boards into separate entities governing generation, transmission and distribution activities;
- delicensing most generation activities, recognising power trading as a distinct activity and promoting captive generation;
- introducing the requirement for providing non-discriminatory open access;
- constituting electricity regulatory commissions at state and central levels (ie, state electricity regulatory commissions (SERCs) and the Central Electricity Regulatory Commission (CERC) respectively), and an appellate tribunal (ie, the Appellate Tribunal for Electricity (APTEL), inter alia) to hear appeals against decisions of the SERCs and CERC;
- recognising the Central Electricity Authority (CEA) as the technical advisory body to the Government of India (GoI) and the electricity regulatory commissions; and
- promoting renewable energy projects.

In accordance with the provisions of the Electricity Act, the GoI, in consultation with the CEA and state governments, has prepared the National Electricity Policy 2005 (NEP) and the Tariff Policy 2016 (Tariff Policy) for the development of the power sector, based on optimal utilisation of natural resources. NITI Aayog, GoI's think-tank, released a draft National Energy Policy in 2017. The Policy, which is yet to be adopted, recommends a framework to bring about an overarching energy efficiency policy in India by forging coordination between different Ministries dealing with electricity. The Policy proposes actions for better access to affordable electricity, improved energy security and independence, greater sustainability and economic growth by 2040 (see questions 22–25).

In May 2018, the Ministry of Power, GoI (the Power Ministry), issued draft amendments to the Tariff Policy. Some of the key amendments proposed include stricter operating norms with certain restrictions on aggregate technical and commercial losses, adoption of direct benefit transfer for subsidy payments, moving electricity consumers from a post-paid to a pre-paid metering system, prescribing mandatory debt to equity ratio for financing the capital cost of future projects, allowing for change in law relief on introduction of any charges and surcharges after award of bids, stricter implementation of renewable purchase obligations (RPOs), providing a service standard framework for distribution of electricity, identifying clear categories of consumers for tariff fixation and reduction of cross subsidy charges.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Electricity Act restructured the electricity sector into separate generation, distribution and transmission sectors. Additionally, there exists a separate market for electricity trading that is undertaken by companies with a trading licence or at power exchanges.

Generation
Generation of electricity (including captive generation) is a delicensed activity (other than for hydro projects exceeding the notified capital cost, for which an approval of the CEA is required). Private entities are permitted to set up power stations using any type of fuel or power source (such as coal, gas, wind, solar and biomass) except for nuclear power projects, which may be undertaken only by a GoI entity or a government company (ie, where the government holds a minimum of 51 per cent of the shareholding).

Conventional power
Power generation activities in India are dominated by long-term power offtake purchase agreements. For thermal power projects (coal and gas) and hydro projects, long-term power is procured either through a negotiated route or a competitive bidding route. Under the negotiated route, a distribution company's power procurement tariff is determined by the relevant electricity regulatory commission, upon considering various factors such as return on equity, interest on loans and working capital, depreciation, operation and maintenance expenses and allowances for any renovation and modernisation. Under the competitive bidding route, the tariff discovered through a competitive bidding process is adopted by the relevant electricity regulatory commission and procurement is governed by standard bid documents including power purchase agreements (PPAs), which are issued by the Power Ministry. While the statutory option to procure electricity under the negotiated route still exists, the Power Ministry has directed state governments and distribution companies to procure power only under the competitive bidding route (except that negotiated route may be used for hydropower projects until the end of 2022 and waste to energy projects).

Prior to 2013, all tariff-based competitive bidding for thermal power projects was done through standard bidding documents, which provided for two modes for procurement (ie, Case 1 and Case 2). Under Case 1, all project assets and inputs (such as land, fuel, water, etc) and relevant statutory approvals required for the construction and operation of, and the supply of power from, the power station had to be arranged by the power producer, while the same had to be arranged by the distribution licensee in Case 2. While these standard bidding documents provided a comprehensive framework for procurement of

electricity, they did not address key concerns such as shortage of fuel availability in the domestic market, indexation of fuel prices to market rates, uncertainty in obtaining key approvals such as environmental clearance, delays in land acquisition and foreign exchange variations.

In order to address the manifold concerns of all stakeholders, in 2013 the Power Ministry issued revised competitive bidding guidelines and standard bidding documents that provided for two modes of bidding and supply of electricity (the Revised standard bidding documents (SBDs)):

- design-build-finance-own-operate model (DBFOO) (on the lines of Case 1); and
- design-build-finance-operate-transfer model (DBFOT) (on the lines of Case 2).

The Revised SBDs prescribe higher normative availability, single-variable bidding, restrictions on usage of fuel procured at subsidised rates from government suppliers, pass-through of variable charges (including cost of fuel) to consumers, detailed construction, operation and maintenance standards, appointment of a mandatory independent engineer for each project and also provision for the cost of imported fuel to be benchmarked at actuals and linked to prevailing prices on international indices.

Following the dismal industry response to the competitive bidding process for allotment of ultra mega power projects (UMPPs, ie, coal-based projects of 4,000MW capacity) that were proposed on the DBFOT model and general criticism from developers and lenders with respect to various aspects of the DBFOT model, the Power Ministry issued draft guidelines and standard bidding documents for UMPPs. The draft bidding documents for UMPPs (which are based on domestic captive coal blocks) contemplate a build, own and operate structure where the government provides part of the land for the power plant and the captive coal block on a long-term lease to the selected bidder and the selected bidder is required to build and operate a power plant and sell the power generated under a long-term PPA with state distribution licensees. The draft proposes that upon expiry of the PPA term the power generator will cease to have any rights over the coal block but will continue to have leasehold rights over the power plant land. The Power Ministry has not clarified the rationale of this approach and hence this structure appears to be fraught with key bankability issues. A key lender concern is the obligation on the developer to acquire the remaining part of the land (ie, the land required in addition to the part of the land provided by the government) required for setting up the power plant and captive coal block.

In addition to long-term power procurement guidelines, the Power Ministry has introduced guidelines (and revised standard bidding documents) for medium-term power procurement (ie, one year to five years) of electricity from coal, gas or hydro-based power stations on a finance, own and operate basis, and power traders and distribution licensees having back-to-back arrangements with power generators. As per media reports, the Power Ministry is in the process of releasing new norms for medium-term (five to seven years) power purchase agreements with an aim to revive commissioned stressed coal-based plants. Further, the Power Ministry has introduced a pilot scheme for the procurement of aggregate power of 2500MW for three years from commissioned coal-based generating companies that are not party to a PPA. The Power Ministry has also issued revised guidelines for the procurement of power on a short-term basis (ie, for a period of more than one day up to one year). The revised guidelines introduce tariff determination through an e-auction with an overall aim of reducing power procurement costs in the short term for distribution licensees. Additionally, the Power Ministry is also in the process of finalising new bidding documents for short-term power procurement (one day to one year).

Non-conventional power

For renewable energy projects, power is typically procured through contracts entered into with state utilities under specific state policies at a regulator determined feed-in tariff or at a tariff discovered through competitive bidding depending on the state or central policy. All distribution utilities, captive-power users and open-access consumers are mandated to procure a prescribed quantum of electricity generated from renewable energy sources (ie, RPO). The Tariff Policy sets out several measures to promote renewable energy development in the country, including: an increase in the solar RPO to 8 per cent by 2022; procurement of power from renewable energy sources by distribution licensees through competitive bidding; and applicability of RPOs on co-generation power plants. In order to further the objective of renewable energy development, the relevant electricity regulatory commissions have introduced market-based policy instruments (referred to as renewable energy certificates (REC)), which the renewable energy producers can get if they do not opt for the preferential feed-in tariff offered by distribution utilities. To incentivise distribution licensees to procure renewable energy, all distribution licensees procuring renewable power above their RPOs are also eligible for obtaining RECs. Additionally, the Supreme Court of India (Supreme Court) has also upheld the imposition of RPO on captive power generators and open-access consumers on the ground that there is a need to promote renewable energy. On the other hand, despite electricity regulatory commissions having the authority to enforce RPOs, there is repeated failure by the state distribution utilities to comply with their RPO requirements, and accordingly there is abundant supply of RECs in the market, with few takers. In this regard, penalties for non-compliance with RPOs are proposed to be increased under the proposed amendments to the Electricity Act (Proposed Electricity Act Amendments) and the proposed Renewable Energy Act (RE Act). Finally, the Ministry of New and Renewable Energy (MNRE) recently constituted a RPO compliance cell to handle all RPO compliance issues across states and to publish monthly reports on compliance, among other activities.

Captive power plants

Another mode of setting up generation facilities is through captive power plants where the captive power user has to hold a minimum of 26 per cent of the ownership of such power plant and should consume at least 51 per cent of the annual aggregate electricity generated by such power plant. The Power Ministry, on 22 May 2018, issued draft amendments to the electricity laws governing captive generating plants (which are yet to be notified). The proposed amendments aim at reinforcing the intent of the legislature by ensuring that there is actual ownership in the company developing and operating the captive power project and consuming the electricity generated by the project. To this end, the proposed amendments to the Electricity Rules, 2005 prescribe an ownership stake of at least 26 per cent of the equity share capital with voting rights (excluding equity shares with differential voting rights and preference shares), mandate a maximum of two shareholding pattern changes per year and allow for a variation in consumption in proportion to their ownership shares not exceeding 15 per cent and in case of solar and wind power plants not exceeding 30 per cent. Additionally, the CERC has amended its regulations, to disqualify renewable energy generators (including captive generators) – to the extent of their self-consumption and selling of power on open access while availing promotional wheeling, transmission, cross-subsidy or banking charges – from obtaining the benefit of RECs. The amendment aims to reduce the unsold inventory of RECs, of which a major portion is contributed by captive generators. The CERC was of the view that developers under the third-party model were able to leverage the concessional benefits, while participating under the REC framework, and has therefore amended the regulations in order to prevent developers from doing so. However, the CERC has given renewable energy generators (including captive generators) the option of availing the benefit of RECs three years after they forgo the benefits of concessional transmission or wheeling charges or the banking facility benefits or both.

Transmission

Transmission of electricity in India is a licensed activity and transmission systems are divided into interstate and intra-state transmission systems. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Limited, a GoI-owned company, and the intra-state transmission systems are owned and maintained by state transmission utilities.

Transmission projects may be undertaken for developing new transmission systems or for strengthening the existing transmission system (which typically include investments in substations along with transmission lines for augmenting the capacity of the existing transmission system). In a manner similar to generation projects, such projects may be implemented under two modes, namely the negotiated route (where the transmission tariff is determined by the relevant electricity

regulatory commission) and the competitive bidding route (where the transmission tariff is discovered through competitive bidding under standard bidding documents). For interstate transmission projects, the Tariff Policy states that while all future interstate transmission projects should ordinarily be developed through competitive bidding, the central government may give an exemption for certain projects that are of strategic importance or technical upgrading and where works are required to be done to cater to an urgent situation on a case-to-case basis. For intra-state transmission projects involving a project cost beyond a certain threshold, which will be determined by the respective SERC, such projects are to be developed only through the competitive bidding route.

Distribution

At present, the sale and distribution of power to consumers is undertaken under a single licence and once the distribution licence has been issued, the licensee does not require a separate licence for the sale of power. However, the Proposed Electricity Act Amendments provide for segregation of supply and distribution activities by allowing multiple suppliers of electricity to use the distribution network provided by a separate entity, each requiring a separate licence. It is proposed that distribution licensees give up all supply related functions. Furthermore, existing power procurement arrangements of distribution licensees will vest in intermediary companies, which will be specially created for this purpose.

Trading

Electricity trading is a distinct recognised activity for which a separate licence is required (except for distribution licensees) from the CERC or a SERC (for interstate and intra-state trading respectively). Trading may involve purchase of electricity from generating stations or distribution licensees for sale to end consumers.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

As mentioned earlier, generation is a delicensed subject; however, construction, operation and maintenance of a generation facility require permits, consents and approvals under other laws relating to land acquisition, environmental clearance, corporate and labour compliances, approvals for use of restricted land and consent to establish and operate the power station from pollution control authorities. Further, in the case of power stations using domestic coal, the developer is required to obtain a coal linkage (which provides for assured fuel supply from the coal mines of Coal India Limited and its subsidiaries) or use coal extracted from a coal block specifically allotted to it by a government entity. If coal is used from an allotted mine, the developer is also required to obtain specific approvals (such as an environmental clearance) in relation to the coal mine. The Ministry of Environment, Forests and Climate Change, GoI (Environment Ministry), has issued a notification pursuant to which stand-alone coal fired thermal power plants of all capacities are required to be supplied with, and are required to use, raw or blended or beneficiated coal with ash content not exceeding 34 per cent, on a quarterly average basis.

All power-generating stations are also required to comply with technical standards prescribed by the CEA, including those in relation to construction of power plants, safety requirements for construction, operation and maintenance. Hydropower projects above 25MW have an additional requirement to obtain a techno-economic clearance from the CEA before commencement of construction works. Similarly, a clearance is required from the Atomic Energy Regulatory Board for atomic energy based power plants.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Act, each transmission licensee is required to provide non-discriminatory use of transmission lines, distribution systems or associated facilities to a licensee, consumer or a person engaged in generation. Grant of connectivity and long, medium or short-term open access is governed by regulations issued by the CERC and the respective SERCs. Recently, CERC has issued regulations (yet to come into force) dealing with the interstate transmission system with the aim of planning and developing an efficient, coordinated, reliable and economical system for the smooth flow of electricity from generating stations to the load centres.

An applicant is first required to obtain connectivity to the transmission network and then obtain long, medium or short-term open access, as the case may be, depending on the time period for which it requires the transmission capacity. On obtaining these approvals, an applicant can interchange power with the transmission grid. The CERC has also recently issued draft regulations that provide for general network access to the interstate transmission network to generators and beneficiaries and is intended to replace the current open-access regulations.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The regulatory environment increasingly seeks to incentivise renewable energy, with favourable tariff regimes established by SERCs. The Electricity Act, the NEP and the Tariff Policy encourage private-sector participation in renewable energy through measures such as fixing RPOs for obligated entities. While in the past a feed in tariff scheme existed, in 2017 tariff based competitive bidding guidelines for the procurement of power were introduced for solar and wind power projects. The procurer sets a benchmark tariff above which a bid cannot be made and the bidder with the lowest tariff bid discovered through a reverse auction is selected to enter into a PPA with the procurer. These bidding guidelines have introduced several provisions to enhance attractiveness of the solar and wind bids through measures such as: generation compensation by the procurer to the developer in case of power evacuation constraints; payment security mechanism for tariff payments; and termination compensation in the event of procurer default. The feed in tariff regime continues to be applicable for solar and wind plants with a capacity lesser than 5 MW and 25MW respectively. Benefits such as the continued availability of accelerated depreciation for wind power projects, and exemptions from payment of electricity duty (which are state-specific but are typically granted by a majority of the states) are also provided to renewable power generators. Further, the Power Ministry has recently ordered that no interstate transmission charges (and losses) shall be levied on the interstate sale of power from solar and wind power projects that have been awarded through competitive bidding with a PPA for the sale of power to a distribution company and other entities for the compliance with their RPOs, provided these projects are commissioned by 31 March 2022. Having said that, unlike for conventional power generation, renewable power projects are primarily based on state-specific policies that provide incentives and policies that are not always consistent between states and developers often shop around based on what best suits their financial model and operational expertise. This is why some states have witnessed tremendous growth in the renewable energy sector compared to others.

The renewable energy sector has experienced exponential growth in the past two to three years and various government incentives (both fiscal and non-fiscal) have played a critical role. However, as the renewable energy sector has come of age and has achieved grid parity, the government aims to gradually roll back the incentives. For instance, until now renewable energy project developers (along with other power project developers) had the benefit of a 10-year corporate tax holiday which expired this year. Another instance is the exemption available to renewable energy projects from payment of transmission charges and losses for transmitting renewable energy using the interstate transmission network. Having said that, the rolling back of incentives by the government has not deterred private-sector developers in developing renewable energy projects in the country. The solar sector in particular has led the pack in India's clean-energy growth story. While solar plants can be set up under state policies or the GoI-launched National Solar Mission (NSM), the NSM has been at the forefront of the GoI's renewable energy policy. Solar projects, under either the NSM or state-specific policies, are envisaged to be developed in a phased manner with a target of achieving 100GW (increased from the original target of 20GW) of installed solar capacity by 2022. Out of the total target of 100GW, the

GoI intends to develop 40GW through rooftop solar projects and the remainder through ground-mounted solar projects. To achieve these targets the GoI is developing large solar parks in collaboration with the state governments and has also issued detailed guidelines for their development. The intention is to provide ring-fenced, shovel-ready land to the power developer along with providing the associated power evacuation facilities. The GoI has doubled the capacity target from 20,000MW to 40,000MW for solar projects to be set up in a solar park, to be achieved by 2021–22.

While India aims to auction 30GW of solar energy and 10GW of wind energy every year for the next 10 years the past year has witnessed a lukewarm industry response to wind power auctions. Even the Solar Energy Corporation of India (SECI) had to cancel its 2GW Tranche V tender as it was undersubscribed by 800MW.

While onshore wind power projects account for a substantial portion of the installed renewable capacity in India, the GoI issued the National Offshore Wind Energy Policy in September 2015 with an aim to promote the country's offshore wind energy potential and recently issued an expression of interest from suitable and experienced bidders for the development of 1GW of offshore wind energy anywhere within India's exclusive economic zone. Gujarat and the state of Tamil Nadu are estimated to have the potential to generate 106GW and 60GW of offshore wind energy respectively. The principal agency charged with the development of the sector is the National Institute of Wind Energy (NIWE). Under this policy, blocks are to be allocated through a competitive bidding route and developers are required to enter into sea bed lease agreements with NIWE. As a part of the planned off-take arrangement, NIWE or the respective state distribution utilities will sign PPAs. Transmission utilities owned by the government will provide the onshore infrastructure required to evacuate power generated from these projects. Offshore power evacuation infrastructure up to the first onshore substation will have to be constructed by developers at their own cost. While the government has put in place a policy and institutional framework to support development of offshore wind energy in the country, there has not been any project development activity yet. The GoI plans to develop 5GW and 30GW of offshore wind energy by 2022 and 2030, respectively.

Additionally, the MNRE in May 2018 issued a National Wind-Solar Hybrid Policy that seeks to optimise the utilisation of infrastructure like land and the transmission system as there are regions in India where wind and solar energy have moderate to high potential. A wind-solar plant will be considered hybrid if the rated power capacity of either source is at least 25 per cent of the rated power capacity of the other source. The policy not only aims at the development of new wind-solar hybrid plants but at the hybridisation of existing wind and solar plants. In furtherance of this the MNRE, in May 2018, issued a scheme for setting up 2500MW of interstate transmission connected wind-solar hybrid power projects. In furtherance of the policy, SECI recently issued a tender for the development of a 160MW solar-wind hybrid power project with a battery energy storage system. While initially, the policy provided only for battery storage, it was recently expanded to include all forms of storage, such as, pumped hydro, compressed air, flywheel etc.

In the context of municipal waste-to-energy projects, while Indian cities present significant scope for growth, the industry has faced intense opposition on account of environment and health concerns. The GoI is undertaking measures to promote waste-to-energy projects. In this context, the National Biofuels Policy was approved by the Union Cabinet in May 2018, which, among other things, promotes research and development into technology using biofuels for generation of power.

On a broader policy canvas, the GoI appears to be determined to promote and develop renewable energy and is taking several measures to fine-tune the policy and regulatory framework. In addition to the Tariff Policy, which was notified in January 2016, some of the salient proposed legislative and policy changes are:

- provisions in the Proposed Electricity Act Amendments, with specific focus on renewable energy; and
- separate legislation for renewable energy (ie, the RE Act) for addressing issues that are not dealt with under the Electricity Act.

Some of the key changes proposed to be introduced through these amendments are:

- mandatory renewable energy generation obligations;
- promotion of low-cost financing;
- grid connectivity provisions specific to renewable power;
- compliance planning by obligated entities for RPOs;
- payment security for renewable energy developers; and
- promotion of net metering.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

India has ratified the United Nations Framework Convention on Climate Change and has also ratified the Kyoto Protocol (but with no binding obligations) to reduce its greenhouse gas emissions. Consequently, the GoI launched the National Action Plan on Climate Change (NAPCC), under which major initiatives such as the NSM have been introduced, and the Wind Energy Mission and Waste to Energy Mission are proposed. Additionally, sharing of Clean Development Mechanism benefits (between the developer and the consumer, usually a state-owned distribution utility) is present across most states. India has also ratified the Paris Agreement. The Paris Agreement requires its signatories to devise a national plan to limit global temperature rise, and as part of its plan India has set a goal of producing 40 per cent of its electricity with non-fossil fuel sources by 2030.

The GoI, under the NAPCC, formulated a National Mission for Enhanced Energy Efficiency (NMEEE), among other such policy measures. The NMEE comprises four initiatives, namely: Perform Achieve Trade (PAT), Energy Efficiency Financing Platform (EEFP), Market Transformation for Energy Efficiency (MTEE) and a Framework for Energy Efficient Economic Development (FEEED). PAT aims to reduce energy consumption in specific energy intensive industries with the issuance of tradable energy savings certificates (ESC) to those participants who achieved their saving targets. 38,50,000 ESCs were issued in PAT cycle I, which ended in 2015. PAT cycle II commenced in 2016 and PAT cycle III commenced in 2017, and will end in 2019 and 2020, respectively. In total 737 designated consumers are participating under PAT cycles II and III.

Another measure taken by the GoI has been the Street Lighting National Programme, which aims at replacing India's 14 million conventional street lamps with smart light emitting diode (LED) variants, by 2019. To date, roughly 4.9 million street lights have been replaced under this policy. This programme is implemented by the Energy Efficiency Services Limited (ESSL), a joint venture of four public service companies and set up under the Power Ministry. EESL similarly implements the Unnat Jyoti by Affordable LEDs for All (UJALA) scheme, with an aim to distribute 770 million LEDs across India by March 2019. To date, roughly 300 million such LEDs have been distributed. Both these policies are examples of the GoIs initiatives to make India energy efficient

While the GoI has been promoting the development of India's renewable energy capacity and capability through various policy measures a recent decision by the Directorate General of Trade Remedies to impose a safeguard duty on the import of solar cells and modules from Malaysia and China is likely to adversely impact solar tariffs. A 25 per cent duty will be imposed from 30 July 2018 to 29 July 2019, followed by a 20 per cent duty from 30 July 2019 to 29 January 2020 and a final 15 per cent duty from 30 January 2020 to 29 July 2020. There have, however, been legal challenges to the imposition of the safeguard duty with two courts staying its implementation subject to the importer furnishing a bond against the same. The Ministry of Finance subsequently announced that the government will not insist on the safeguard duty payment until the courts have decided on the legality of the safeguard duty imposition.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently there is no regulatory framework governing electricity storage in India. However, the GoI in its Annual Budget in 2016 announced the launch of a new programme for energy storage. With a view to

develop a regulatory framework to govern energy storage systems in India the MNRE constituted an expert committee to propose a draft policy to establish a National Energy Storage Mission (NESM) for India and the committee recently submitted the draft policy to the MNRE, which is expected to release the draft for public feedback shortly. The NESM aims to establish a regulatory framework that promotes manufacturing and deployment of battery storage systems. Prior to this, in January 2017, the CERC issued a consultation paper setting out a broad framework for the introduction of battery energy storage systems (BESS). The consultation paper discusses models of tariff determination for multiple users of BESS, commercial viability of BESS and policy changes that may be required to deploy bulk storage facilities in the country. Further, media reports mention that the government is also working on a policy framework to introduce on-site storage integration for wind and solar power projects.

In 2017 the GoI floated tenders for more than 300MW of renewable energy capacity with energy storage systems. However, almost all the tenders were suspended or withdrawn for various reasons. In 2018, the GoI issued tenders for about 180MW of renewable energy capacity with energy storage systems, which are currently ongoing.

The government has also launched the National Smart Grid Mission through which it has introduced incentives such as a 30 per cent capital grant for the project cost and a 100 per cent grant for select components like training and capacity building.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

While the government is positive about setting up power stations based on nuclear energy (it has already installed 6,780MW of capacity from 22 operational nuclear reactors and projects with an aggregate capacity of approximately 15,700MW are currently under construction), currently only a GoI entity or a government company (ie, where the government holds a minimum of 51 per cent of the shareholding) can own and operate a nuclear power plant. Private ownership of nuclear power generation assets is not allowed.

A major issue that had hampered private investment in other areas of nuclear power generation was the interpretation of a provision of the Civil Liability for Nuclear Damage Act 2010 (CLND Act) as mandating a civil nuclear liability clause in supply contracts, therefore dissuading foreign equipment suppliers from supplying Indian nuclear power projects. However, the GoI has clarified that while the legislation would not be amended, it is not mandatory to include a civil liability clause in the contractual arrangements between the foreign supplier and the Indian operator. This clarification has been provided as a part of responses to certain 'Frequently Asked Questions' issued by the GoI and has therefore led to concerns that such a stance may not be legally binding. While it is highly unlikely, it remains to be seen whether the Nuclear Power Corporation of India (a government company and operator of nuclear power plants) will agree to undertake such liability. India has also ratified the Convention on Supplementary Compensation for Nuclear Damages (CSC) which has been hailed as an important step towards creating a global nuclear liability regime. It is important to note that ratification of the treaty requires national law to be in compliance with article 10 of the CSC, which states that national law may provide that an operator may have a right of recourse to the supplier only if this is expressly provided for in writing or if the nuclear incident results from an act or incident done with an intent to cause damage. However, section 17(b) of the CLND Act in India adds another instance where an operator may have recourse to the supplier and that is if the nuclear incident occurred owing to an act of the supplier, which includes supplying parts with a latent or patent defect. The GoI has also issued a clarificatory response in relation to section 17 (b) of the CLND Act stating that while the language of section 17(b) is in addition to the provisions of article 10 of the CSC, it relates to actions and matters such as conditions of service and contract. The GoI is of the view that these are in any case ordinarily a part of the contract and are not a new method of tracing liability back to the supplier. India is also a part of the limited group of countries with a Nuclear Insurance Pool, which provides insurance cover to operators of nuclear power plants and suppliers. India's nuclear insurance pool has a corpus of 15 billion rupees.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Owning and operating transmission assets requires a licence from the CERC for interstate transmission facilities and the relevant SERCs for intra-state transmission facilities. While issuing any licence, the Electricity Act allows the appropriate electricity regulatory commission to specify any general or specific conditions that a licensee must comply with. The appropriate electricity regulatory commission may, on the recommendation of the government and in the public interest, even permit any local authority, cooperative society, government institution, etc to transmit (and distribute) electricity, subject to certain terms and conditions, without a licence.

Transmission licensees also require right of way from landowners for construction of transmission lines, approvals under the Electricity Act for installation of overhead lines and installation of transmission towers, apart from other applicable clearances such as those from the Environment Ministry. Alternatively, the Electricity Act also enables a transmission licensee to place and maintain a transmission line on any immovable property, upon being authorised by the government. The government authorisation entitles the transmission licensee to enter any privately owned or occupied land without the notice or consent of the owner or occupier to carry out the works required for setting up the transmission project. The central government has issued guidelines for the payment of compensation to landowners for obtaining right of way for the construction of transmission lines. The guidelines are applicable for transmission lines of a voltage of 66kV and above. The guidelines state that compensation of an amount equal to 85 per cent of the market value of the land should be paid to land owners for the land required for construction of the tower base area. Further these guidelines also state that compensation of up to 15 per cent of the land value should be paid to land owners for the diminution in the width of a right of way corridor owing to the construction of transmission lines. In addition to the above, the licensee also needs to comply with regulations issued by the CEA and CERC in relation to grid and technical standards upon grant of the transmission licence.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The open access regulations issued by the relevant electricity regulatory commissions permit usage of transmission lines by any generating company, distribution licensee, any consumer with a requirement of over 1MW of electricity and electricity traders, provided they comply with the requirements of obtaining connectivity and open access to the transmission system. The regulations also cast an obligation on the transmission licensees to provide non-discriminatory access to their transmission lines upon application for such access. The applicant is required to pay transmission charges and other charges as applicable, which may include a cross-subsidy surcharge, wheeling charges and open-access charges.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The government is looking to increase private participation to strengthen transmission networks and has introduced a string of measures such as introduction of electronic competitive bidding for transmission projects and a viability gap funding model on a PPP structure for setting up intra-state transmission networks. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Limited (PGCIL), a state-owned company, and the intra-state transmission system is owned and maintained by state transmission utilities. However, the PPP structure is increasingly being preferred by the government for setting up interstate and intra-state transmission networks.

Additionally, major steps are being taken to strengthen the transmission network such as the commissioning of India's first ultra-mega transmission project, setting up a green energy corridor project

(facilitating the transmission of electricity produced through renewable energy sources) and the connection of the southern grid to the national grid, leading to synchronisation of all regional grids.

It is generally seen that impetus is specifically being given to the transmission sector through various measures including introduction of the National Smart Grid Mission to implement a smart electrical grid based on technology for automation, communication and IT systems, to monitor and control power flows from points of generation to points of consumption; setting up of a National Transmission Asset Management Centre; and creation of Power System Development Fund drawing from congestion charges, deviation settlement charges and reactive energy charges, for primarily relieving congestion in government transmission systems of strategic importance; and renovation and modernisation of government transmission systems for relieving congestion. The government also proposed feeder separation to augment power supply to rural areas and for strengthening sub-transmission and distribution systems.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates and terms for the provision of transmission services are determined by the appropriate electricity regulatory commission (the CERC in the case of interstate transmission and the relevant SERC in the case of intra-state transmission). For transmission schemes implemented through the negotiated route, transmission charges are determined by the relevant electricity regulatory commission in line with tariff regulations issued by it, which take into account factors such as return on equity, interest on loan capital and working capital, depreciation, operation and maintenance expenses and allowance for any renovation and modernisation. Under the competitive bidding route, transmission charges discovered through a competitive bidding process are required to be adopted by the relevant electricity regulatory commission.

Once the charges for a transmission network are determined or discovered, the CERC adopts a 'point-of-connection' method for calculating charges payable by each user in the transmission system based on its actual usage and develops a transmission charge-sharing mechanism among grid constituents. The 'point-of-connection' method is, however, not adopted for intra-state transmission for entities not connected to the interstate transmission system. The CERC has amended its regulations governing sharing of transmission charges and losses, making them applicable to intra-state entities with medium-term open access or long-term access to the interstate transmission network and introducing a reliability service charge, charge for using HVDC transmission lines and provisions for misdeclaration. Further, through another amendment, the CERC has waived the payment of transmission charges and transmission losses for incremental gas-based generation from the regasified liquefied natural gas e-bid auctions.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The CERC (Indian Electricity Grid Code) Regulations 2010 (Grid Code) brings together a single set of technical and commercial rules that facilitate planning and development of reliable national and state grids, encompassing all the utilities connected to or using the interstate transmission system. One of the key aspects of the Grid Code is to facilitate planning and development of economic and reliable national and regional grids. Furthermore, states have also issued their respective grid code regulations, for regulating the intra-state transmission grid network.

The key entities responsible for ensuring reliability of the transmission grid include the National Load Despatch Centre, the Regional Load Despatch Centre (established for five regions in India) and State Load Despatch Centres (established for each state). They ensure optimum scheduling and despatch and integrated operation of the power system in their respective jurisdiction. Additionally, the CTU and various State Transmission Utilities are responsible for planning and coordination of interstate and intra-state transmission system respectively.

The CERC has recently made regulations for ancillary services to be provided by power generators to improve reliability of the grid. Additionally, the CERC has recently amended the Grid Code to provide a procedure and mechanism for declaration of commercial operation of interstate generating stations where generators are required to make such a declaration after demonstrating the unit capacity after a trial run and after obtaining the relevant clearance from the National Load Despatch Centre, the Regional Load Despatch Centre or the State Load Despatch Centre. Through the amendment, the CERC has clarified the procedure for such declaration of the commercial operations date for thermal and hydro-generating stations and interstate transmission systems. The procedure involves successful completion of all tests that are required under the Grid Code, issuing notice to power procurers, if any, and successful completion of trial runs for the equipment or generating units to be commissioned.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution activities (except for distribution of electricity in rural areas notified by the relevant state government and distribution by notified exempted entities such as local authorities and non-governmental organisations) require a licence from the relevant SERC.

For obtaining a distribution licence, the entity is required to make an application to the SERC as prescribed in the Electricity Act along with the requisite fees. Additional clearances may be required from relevant authorities. In order to promote open access and competition in distribution activities, the Electricity Act permits two or more distribution licensees to operate within the same area of supply through their own distribution network and also permits applicants to file petitions for obtaining a distribution licence in the same area and for the same purpose, as previously granted to another distribution licensee, so long as they comply with additional requirements in relation to capital adequacy, creditworthiness and code of conduct as may be prescribed by the GoI. The Proposed Electricity Act Amendments prohibit having multiple distribution licensees unless in the public interest (as approved by the GoI) or in the case of pre-existing licensees, till expiry of the licence.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Distribution licensees are obligated to provide non-discriminatory supply of electricity to any person situated in the licensee's area, in accordance with the regulations made by the relevant electricity regulatory commission.

Every person whose premises are situated within the distribution licensee's area and who has given notice for wheeling electricity is eligible to receive electricity from: the distribution licensee; or from any other supplier through the distribution licensee's network, by seeking open access. In the first option, the distribution licensee operating in a particular area is required to lay down its network, if required, in order to supply electricity itself to a consumer seeking supply. Under the second option, ie, through open access, a consumer has the right to require a distribution licensee to make its network available for wheeling electricity to such consumer from a third-party supplier upon payment of wheeling charges and an additional surcharge (in the nature of a cross-subsidy surcharge) as determined by the SERC to meet such distribution licensee's fixed costs arising out of its obligation to supply. The cross-subsidy charge is payable irrespective of whether the distribution licensee's network is used, in the case of third-party supply.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Electricity distribution is largely controlled by government distribution utilities, with minimal privatisation on account of significant historic liabilities of the state distribution companies. However, a few examples of privatisation in certain areas (such as Delhi, Odisha, Ahmedabad,

Mumbai and Jamshedpur) have met with success. Tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. The Proposed Electricity Act Amendments provide for disaggregation of distribution activities by requiring the supplier of electricity and distribution network provider to be separate entities so as to enable consumers to choose their supplier. Once these amendments come into force, supply of electricity will also require a licence from the relevant SERC, and the supply and distribution of electricity will be governed by separate operative codes to be issued by the relevant SERC. The proposed amendments to the Tariff Policy address distribution as well. To ensure the burden of distribution licensees' inefficiencies are not passed on to the consumers, the SERCs and joint commissions (constituted solely for the purpose of tariff setting) are required to not consider aggregate technical and commercial (AT and C) losses exceeding 15 per cent for determination of tariff after 31 March 2019. Further, the AT and C losses are required to be lowered to 10 per cent within three years of achieving AT and C loss level of 15 per cent. The appropriate electricity regulatory commission are also required to determine the tariff without taking into account any subsidy components. It has been proposed to introduce the time-of-the-day (ToD) and two-part tariffs no later than 1 April 2019 for consumers with suitable electricity meters.

One of the major problems plaguing the distribution sector is the abysmal credit ratings of the state distribution utilities and their persistent or extensive delays in making payments to generators under PPAs. Distribution utilities have borrowed heavily to finance losses in their businesses, and are facing major hurdles in repaying their debt. The government has launched the Ujwal Discom Assurance Yojana Scheme (UDAY Scheme) with the objective of improving the operational and financial efficiency of state-owned distribution utilities. One of the major features of the UDAY Scheme involves requiring participating states to take over 75 per cent of the debt of distribution licensees by way of a grant over a period of two years. Such states may then issue non-statutory liquidity ratio bonds, including state development loan bonds for subscription by pension funds, insurance companies and other institutional investors. Under the UDAY Scheme, lenders and financial institutions will not levy prepayment charges on distribution licensee's debt and waive unpaid overdue interest, including penal interest. For financing future losses and working capital of distribution utilities, state governments will take over and fund future losses in a graded manner until the financial year 2020–2021. One of the much-praised aspects of the UDAY Scheme is its greater acceptability by the respective state governments as the debt proposed to be absorbed will not affect their fiscal deficit and in turn will not affect their budgetary allocation from the central government. This should in turn lead to distribution utilities significantly increasing their procurement of power that was constrained on account of their financial distress. However, the UDAY Scheme has been criticised in some quarters for a perceived lack of explicit central government support as part of the transitional financing mechanisms and a lack of operational control measures in terms of automatic fuel and power purchase price adjustments. To date, 27 states and five union territories have signed up for the UDAY Scheme.

It has become apparent, however, on the basis of data supplied by various states that the UDAY Scheme has not achieved the intended results. Many states are failing to reduce their AT and C losses and to narrow the gap between their distribution licensees' cost of power supply and revenue realised to the earmarked levels for the year (ACS-ARR gap). Perhaps most worrying is the fact that only 23 states and the union territory of Puducherry have submitted data for the financial year 2017 to the Power Ministry.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. In this regard, SERCs are also competent to formulate regulations which set out the terms and conditions for distribution of electricity. While determining the rates and terms, the SERCs are guided by factors mentioned in the Electricity Act, which include promotion of competition, safeguarding of consumers' interest and, at the same time, recovery of the cost of electricity. The rates so determined are usually notified by the relevant SERCs by passing tariff orders. In relation to cross-subsidies, the Tariff Policy provides that the cross-subsidy charge shall be an aggregate of weighted average cost of power; transmission and distribution losses, transmission, distribution and wheeling charges and per unit cost of carrying regulatory assets, if applicable. However, the Tariff Policy recognises that the new methodology for calculating cross-subsidy may not be suitable to all distribution licensees and therefore has given the SERCs the power to review and vary the same taking into consideration different circumstances prevailing in the area of relevant distribution licensee. The proposed amendments to the Tariff Policy provide for the deployment of smart pre-paid meters as it is felt that the shift to such a pre-paid system will remove problems such as meter reading, billing, collection and disconnection in the case of non-payment of bills by consumers. Additionally, proposed amendments to the Tariff Policy require all subsidies to be extended in the form of a direct benefit transfer and the gradual reduction of cross subsidies by the appropriate electricity regulatory commission. Finally, the amendments propose a framework for the simplification and rationalisation of tariffs, as well as, ensuring a consistent system across all states.

SERCs may also consider distribution and supply margins while arriving at returns for the distribution business, and the possibility of capping prices. Additionally, flexibility in the adoption of a surcharge formula and capping of surcharge at 20 per cent of tariff applicable to a consumer have been introduced.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale and distribution of power are bundled activities and hence, if a developer has obtained a distribution licence for distribution of electricity for a certain area, it has approval to sell power as well to both commercial and domestic consumers, and no specific authorisations are required.

Further, generating companies can also sell power directly to a bulk consumer using open access or through dedicated transmission lines. The consumer, however, is not allowed to further sell the power to other consumers. Licensed traders are also authorised to supply and trade in power. However, we should highlight that the Proposed Electricity Act Amendments contemplate the segregation of the supply (sale) and distribution businesses (operating the distribution network) and the introduction of multiple supply licensees and the restriction of having only one distribution licensee for a given area.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The SERCs issue multi-year tariff regulations to regulate the procedure for determination of power sales tariff (comprising fixed charges and energy charges (which are usage-based)) of distribution licensees for various classes of consumers, the categorisation of which depends on the type of entities that require the electricity and the voltage levels at which the electricity is to be distributed. For instance, a separate tariff is determined for low-tension (LT) consumers (which includes domestic, residential and commercial units) and high-tension (HT) consumers (which includes industries and railways). The HT and LT classes of consumers are further subdivided depending on the type of entity to which electricity is to be supplied (for instance, HT 1A consumers include all manufacturing, industrial establishments and registered factories, while HT 1B tariff is determined for railways). The components and factors to be considered while determining tariff are similar to the components of generation tariff and include return on equity capital, interest on debt, interest on working capital, depreciation, power purchase cost and operation and maintenance expenses, albeit with respect to the distribution business. The proposed amendments to the Tariff Policy envision a two-part tariff with capital costs being reflected in the fixed charges and the energy charges reflecting the average purchase price of power with administrative margins.

With a view to promoting competition and also to bolster the segregation of content and carriage philosophy, the Proposed Electricity Act Amendments contemplate that while the tariff to be charged by the distribution licensee will be determined by the SERC, the tariff

to be charged by a supplier will be market determined, subject to a SERC-specified ceiling. That being said, the Proposed Electricity Act Amendments also enable the supplier to charge a tariff higher than the specified ceiling after obtaining regulatory approval.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

In furtherance of the multi-year tariff orders issued by each SERC for distribution tariff for various types of HT and LT consumers, distribution licensees file their respective petitions before the SERC for their area of supply. Such tariff petitions typically include true-up of the tariff based on the previous year (ie, specific adjustment required on a case-by-case basis in relation to units sold, AT and C losses, etc), review of the current year's performance and approval of the aggregate revenue requirement of the distribution licensee for the upcoming year. In reviewing the aggregate revenue requirement, the SERC takes into consideration factors such as cost of procurement of electricity (through long-term contracts or short-term procurement from the open market, in case of shortage) and, based on such review, the commission may alter the tariff mentioned in the multi-year tariff order for such distribution licensee.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Electricity Act sets out various obligations and duties of a distribution licensee, which include the obligation to provide open access to any applicant (subject to system constraints), the duty to develop and maintain a distribution system and commence supply within one month of request in the distribution licensee's area of supply. The Supreme Court has stated in various judgments that there is no exemption from the universal service obligation of any distribution licensee under the Electricity Act and the licensee has a statutory duty to supply electricity upon application to any premises located in the distribution licensee's area. One of the key reasons for the government's decision to reform debt-ridden distribution licensees under the UDAY Scheme was to ensure that the distribution licensees are able to fulfil and perform their roles and functions under the Electricity Act effectively.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The power sector is governed by the GoI primarily through the Power Ministry and the MNRE. The Department of Atomic Energy of GoI governs development of nuclear energy.

Other regulatory policies and technical and performance standards are determined by the CERC, the SERCs, NITI Aayog and the CEA.

23 Scope of authority

What is the scope of each regulator's authority?

The CERC and the SERCs exercise jurisdiction over all interstate and intra-state electricity regulatory issues respectively (except issues relating to nuclear energy, which are regulated by the Atomic Energy Regulatory Board) and are entrusted with the function of notifying regulations and acting as the independent regulators for their respective jurisdictions. Some of their key functions and responsibilities include preparing their respective grid codes, issuance of licences, determination of tariffs, adjudicating disputes and aiding and advising the government on any matter referred to them.

The Power Ministry and the Renewable Energy Ministry act as the legislating bodies and are mainly responsible for evolving general policies (including the NEP, the Tariff Policy and the Rural Electrification Policy) for the development of the electricity sector, in consultation with the state governments and the CEA.

The CEA, not a regulator in the electricity sector, primarily serves as the technical advisory body to the GoI, advising on all technical matters related to transmission, generation and distribution (including specifying technical standards for construction, and prescribing grid standards for operation and maintenance of transmission lines and safety requirements).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The CERC and SERCs are statutory bodies under the Electricity Act, which also sets out their powers and functions. Being autonomous bodies, they perform their functions in an independent manner without any government interference. However, regulatory authorities are required to be guided by policy directions of the GoI issued under the Electricity Act. That being said, the Proposed Electricity Act Amendments require the SERCs and CERC to mandatorily comply with the provisions of the Tariff Policy (as opposed to being merely guided).

The CERC was established by the central government under the Electricity Act and the Electricity Regulatory Commissions Act 1998 where members of the CERC are appointed by a committee that is appointed by the central government. Similarly, SERCs are also established by the respective state governments under the Electricity Act and the Electricity Regulatory Commissions Act 1998.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Under the Electricity Act, the CERC and SERCs (and adjudicating officers of such commissions) have the power to hold inquiries and adjudicate disputes relating to interstate matters for the CERC and intra-state matters for the respective SERCs. Under section 79 of the Electricity Act, the CERC is empowered to adjudicate upon disputes involving generating companies, either owned or controlled by the central government or generating companies who have entered into a composite scheme for generation and sale of electricity in one or more states, or transmission licensees with respect to interstate transmission of electricity and regulation of tariff. Section 86 of the Electricity Act authorises the respective SERCs to adjudicate upon disputes between licensees and generating companies. Both CERC and the SERCs also reserve the power to refer any dispute to arbitration.

APTEL has the power to entertain appeals arising out of decisions of the CERC, the SERCs or adjudicating officers, if filed within 45 days from the date of receipt of the impugned order. APTEL is also conferred with suo motu jurisdiction to examine the validity of any order made by an adjudicating officer, CERC or SERC, in relation to any proceeding. Additionally, any person aggrieved by the order of any electricity regulatory commission may approach the relevant High Court of the state for adjudicating on any question of law.

APTEL is required to decide appeals as expeditiously as possible and endeavour to dispose of the appeal within 180 days of filing of the appeal. Further, appeals against the decisions of APTEL may be filed before the Supreme Court within 60 days of receipt of such decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Under the Electricity Act every transmission and distribution licensee must seek the prior approval of the relevant electricity regulatory commission, without which it cannot undertake any transaction to acquire, or merge its utility with, the utility of another licensee; or assign its licence, or transfer the whole or a part of its utility.

Additionally, the Competition Commission of India (CCI), established under the Competition Act 2002 (Competition Act) has, under the merger control provisions, the authority to block a combination (a merger or acquisition beyond specified assets or turnover thresholds) in the electricity sector if it is of the opinion that such merger

or acquisition will have an appreciable adverse effect on competition (AAEC) on the relevant market, such as the electricity sector in India.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The Competition Act prohibits any enterprise or person from entering into a combination which causes or is likely to cause an AAEC within the relevant market in India. The Competition Act also mandates that any person or enterprise proposing to enter into a combination obtains prior approval of the CCI before executing the transaction. If the CCI is of the opinion that the proposed combination will not have an AAEC on the relevant market in India, it approves the transaction, and if it subsequently finds that the combination may have an AAEC within the relevant market in India, it may prohibit the proposed combination or allow it subject to certain conditions meant to neutralise the adverse effects of such combination.

For determining the AAEC of any combination, the Competition Act sets out specific factors (such as extent of entry barriers, degree of countervailing power in the market, extent of effective competition likely to sustain in a market, nature and extent of vertical integration in the market, possibility of a failing business, etc) and requires the CCI to make a decision within a period of 210 days from a notice of combination being filed. If no order is passed by the CCI on the proposed combination within the prescribed period, it is deemed that the proposed combination has been approved by the CCI. By way of its regulations, the CCI has committed to 'endeavour' to pass an order within a period of 180 days from a notice of combination being filed. In practice, the CCI usually gives its prime facie opinion approving the transaction within 60 working days in cases without any competition concerns. In case of competition concerns, the CCI can take up to six months to pass its final order.

While the Electricity Act does not set out any specific thresholds, the bidding documents entered into by entities in the power sector typically prescribe provisions for equity lock-in and change in control for a specified period (except for wind power procurement), which effectively block a merger or acquisition.

Other than competition law and sector-specific restrictions, provisions of the Companies Act 2013 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations 1997 (applicable to listed companies) will also apply with respect to change in shareholding through mergers and acquisitions.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CERC and SERCs are empowered to issue appropriate directions to a licensee or an electricity generating company if such licensee or generating company enters into any agreement or abuses its dominant position or enters into a combination that is likely to cause or causes an AAEC in the electricity sector. The CCI has the authority to initiate inquiry into alleged anticompetitive conduct, either suo motu on the basis of information that it has or on the basis of complaints received or on a reference made by the government or statutory authorities (such as CERC and the SERCs). Further, the CCI can also make a reference to other statutory authorities (such as CERC and SERC) for their non-binding opinion on issues pertaining to the sectors under their jurisdiction. Similarly, other statutory authorities can also make a reference to the CCI for issues pertaining to competition law. This enables electricity regulatory authorities to make their own assessment and also consult the CCI with respect to alleged anticompetitive conduct.

Furthermore, consumer forums established under the Consumer Protection Act 1986 also have the power to deal with malpractice affecting end consumers. Additionally, any consumer who is aggrieved by non-redressal of their grievances by a distribution licensee may approach the ombudsman appointed by the respective SERCs. Any non-compliance of an order made by the ombudsman is typically punishable with a monetary penalty.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Section 3 of the Competition Act prohibits agreements that cause or are likely to cause an AAEC in India. 'Agreement' includes an arrangement, understanding or actions in concert. Such agreements can be oral or written, formal contracts or informal arrangements, and need not be enforceable by law. While determining AAEC the CCI considers the following factors: creation of barriers to new entrants in the market; driving existing competitors out of the market; foreclosure of competition by hindering entry into the market; accrual of benefits to consumers; improvements in production or distribution of goods or provision of services; and promotion of technical, scientific and economic development by means of production or distribution of goods or provision of services.

Section 4 of the Competition Act prohibits abuse of dominant position. In case of a section 4 investigation, the CCI has to: define the relevant market; demonstrate dominance in such market; and establish abuse of dominance by the concerned enterprise.

Abuse of dominance is of two kinds – exploitative and exclusionary conduct. These cover predatory pricing, imposition of unfair terms and prices in one-sided contracts, leveraging, denial of market access, etc.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

See question 28.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

It is permissible to have 100 per cent foreign direct investment (FDI) in generation (except nuclear power), transmission, distribution of electricity and power trading sectors. Up to 49 per cent foreign investment (26 per cent through FDI and 23 per cent through foreign institutional investment) in power exchanges without prior regulatory approval in the primary and secondary markets.

Further, while there are no special requirements or limitations on acquisitions of interest in the electricity sector by foreign companies, for competitively bid projects the standard bidding documents issued by the Power Ministry may specifically provide each distribution utility (that is procuring power) to evaluate the association of a foreign entity (with the bidder) from a national security or public interest perspective. To the extent such association is found to be detrimental to the national interest, the distribution utility has the ability to reject the associated bid.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As per the regulatory framework applicable to the construction and operation of interconnection and transmission systems, no separate authorisations are required to construct and operate interconnectors. Transmission licensees are required to abide by the regulations framed by the CERC and the CEA with respect to the construction and operation of transmission systems and connectivity to the grid. Under the Electricity Act and associated Rules, the Chief Electrical Inspector is required to certify that any apparatus that is used for a transmission system meets the safety regulations and guidelines prescribed. Further, according to the CEA's regulations, any electrical installations and apparatus that are of a voltage exceeding 650V are required to be inspected and approved by the Chief Electrical Inspector to the Government. Therefore, the construction and operation of an interconnector, or any other similar apparatus, will be governed by the regulations that have been issued by the CERC and the CEA and where required, an approval must be obtained from the Chief Electrical Inspector.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Until December 2016, there was no legal framework for governing and regulating cross-border electricity supply. The Electricity Act is also silent on cross-border electricity supply. In the absence of a regulatory framework governing cross-border electricity supply, Indian power trading companies have been supplying and procuring electricity to and from neighbouring countries including Bhutan, Bangladesh, Myanmar and Nepal by way of bilateral agreements which are generally government-to-government contracts. Additionally, some key Indian players in the power trading and power exchange verticals have approached the CERC to allow import of power through power exchanges, where the CERC has requested the Power Ministry to provide guidance on the subject. The Power Ministry, after consultation with various stakeholders, has directed the CERC to frame regulations for facilitating cross-border trading in electricity. Meanwhile, on 5 December 2016, the Power Ministry issued Guidelines on Cross Border Trade of Electricity. According to these guidelines, in case of cross-border transaction of electricity through arrangements other than government-to-government negotiations, the tariff for import of electricity by Indian entities from generating stations located outside India may be determined (under long-, medium-, short-term agreements) through a process of competitive bidding. On the other hand, the tariff for export of electricity to entities of neighbouring countries by Indian entities (through long-, medium-, short-term agreements) may be as mutually agreed or through competitive bidding, subject to payment of applicable transmission or wheeling charges. Transmission interconnection between India and a neighbouring country is envisaged to be planned jointly by transmission planning agencies of the two countries. Further, Power Ministry has notified Member (Power System), CEA as the designated authority for functions prescribed under these guidelines. In February 2017, CERC also issued draft regulations for cross-border trade of electricity, which are currently under public consultation. Further, Power Ministry has notified Member (Power System), CEA as the designated authority for functions prescribed under Guidelines on Cross Border Trade of Electricity. On 26 April 2018, the CEA issued Designated Authority (Conduct of Business Rules) (CBR), 2018 to frame its own rules for Conduct of Business (CBR) for facilitating the process of approval and laying down the procedure for Cross Border Trade of Electricity between India and neighbouring countries and other related matters.

India, along with other members of the South Asian Association for Regional Cooperation (SAARC), has also signed the SAARC Framework Agreement for Energy Cooperation (Electricity) with the objective of enabling cross-border trade of electricity, which provides a broad framework for data updating and sharing, planning of cross-border interconnections, transmission access, etc. Additionally, media reports suggest that steps for establishing a SAARC power grid have been initiated by SAARC member countries.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Restrictions on transactions with affiliates are typically provided in licence conditions and in regulations formulated by the relevant electricity regulatory commissions. Typically, such transactions should be undertaken on an arm's-length basis and at a value that is fair and reasonable. Additionally, the Electricity Act also allows transmission or distribution licensees to engage, with the prior approval of the relevant electricity regulatory commission, in other businesses for the optimum utilisation of their assets, if a specified proportion of revenues from such other business are used towards reducing charges for wheeling, or wheeling and transmission, as the case may be. Further, in such a case, the transmission or distribution business of the licensee must not subsidise the other business undertaking, nor be encumbered by it.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The appropriate electricity regulatory commission is the body responsible for enforcing such restrictions. These restrictions form part of the terms of the licence, therefore the appropriate electricity regulatory commission can ensure compliance, pursuant to the powers provided under the Electricity Act, and impose sanctions, which include imposition of penalties and revocation of the licence.

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AKSET Law

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Law No. 30 of 2007 on Energy (the Energy Law) and Law No. 30 of 2009 on Electricity (the Electricity Law) are the main laws that govern the electricity sector in Indonesia. Their implementation is regulated under Government Regulation No. 14 of 2012 on Electricity Supply Business Activity, as amended by Government Regulation No. 23 of 2014 (GR 14/2012). Additional regulations are enacted at the presidential, ministerial and director general level to administer technical matters, such as the procedures to obtain licences for electricity business, sale of power, and national and transnational interconnection. Provincial governments may also issue electricity regulations in line with the Electricity Law by the laws and regulations on regional autonomy. After the enactment of Law No. 23 of 2014 on Regional Government, as last amended by Law No. 9 of 2015 (Law 23/2014), local government authorities (those of regents and mayors) have been reassigned to the provincial governments (governors).

As electricity is deemed vital and strategic, the business of electricity is controlled by the state and held by state-owned and region-owned enterprises, the main such company being PT Perusahaan Listrik Negara (Persero) (PLN). To increase the electricity supply, the private sector is also given the opportunity to participate in the sector. The government requires that electricity be provided in enough, reliable in quality and reasonable in price or tariff for the welfare of the people and to achieve sustainable development.

At the policy level, there is a national electricity blueprint endorsed by the government, which outlines the development of the electricity supply system. The blueprint refers to the national energy policy, which is drafted by the National Energy Council and ratified by the government following consultation with parliament. The national energy policy includes policies on energy supply for national demand, priority of energy development, utilisation of domestic energy resources, and domestic energy support reserves. In 2014, a national energy policy was ratified under Government Regulation No. 79 of 2014 (GR 79/2014 or the National Energy Policy), setting the plan for national energy management to ensure domestic energy security and support sustainable development. The National Energy Policy was further implemented through Presidential Regulation No. 22 of 2017 on National Energy Plan (the National Energy Plan). The National Energy Plan provides central government policies on national energy development through 2025, consisting of, among others, current energy conditions and expectations for the future.

Based on the National Energy Policy, the targets for electricity supply and utilisation are as follows:

- increase procurement of primary energy to 400 million tonnes of oil equivalent (MTOE) by 2025 and 1,000 MTOE by 2050;
- increase utilisation of primary energy per capita to 1.4 tonnes of oil equivalent (TOE) by 2025 and 3.2 TOE by 2050;
- increase power plant capacity supply to 115GW by 2025 and 430GW by 2050; and
- increase electricity utilisation per capita to 2,500kWh by 2025 and 7,000kWh by 2050.

Further, the national electricity supply plan is implemented through a decree issued by the Minister of Energy and Mineral Resources (MEMR) No. 1567 K/21/MEM/2018 on the Ratification of the Electricity Supply Business Plan of PLN for the period 2018 through 2027 (known as the 2018 RUPTL). An RUPTL provides, among others, a general policy on development of electricity and electricity infrastructure, an update on annual electricity grid status, development of new and renewable energy, supply of primary energy, investment needs, analysis of long-term risks and possible mitigating actions in PLN's electricity business area. The 2018 RUPTL changes the electricity supply plan by prioritising the development of Mine Mouth Steam Power Plants (Mine Mouth PLTU) and Wellhead Gas Power Plants, Combined Cycle Power Plants, Gas Machine Power Plants (Wellhead PLTG/PLTGU/PLTMG) at PLN's electricity business area and targeting more new and renewable power plant construction and operation as well as coal fired power plants for the purpose of achieving optimum primary energy in accordance with the National Energy Policy.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Power generation, transmission, distribution and sales may be operated in an integrated manner by one business entity within a business area determined by the government. Electricity generation, transmission, distribution and sale for public use may be organised by business entities owned by the state and local government, as well as by the private sector under an Electricity Supply Business Licence (IUPTL).

PLN, a state-owned enterprise, is the dominant market player and is the primary contributor to the public supply of electricity.

Electricity generation is also allowed for self-use, which requires an operational licence for capacity above 200kVA, a Registration Letter for capacity of 25kVA to 200kVA, and merely a Report to the Director General of Electricity (DGE) for capacity up to 25kVA. Companies in Indonesian industrial zones often generate electricity for self-use and sell any excess power to PLN for use on the Indonesian power grid.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Construction and operation of a power generation facility requires an IUPTL issued by the relevant provincial or central government authority. Further, since the enactment of Government Regulation No. 24 of 2018 dated 21 June 2018 on the Integrated Electronic Licensing Services for Business (GR 24/2018), the application of IUPTL, whether falling under the jurisdiction of the provincial or the central government, is conducted through the Online Single Submission (OSS) System operated under the supervision of the Coordinating Minister for Economic Affairs (Menko Ekon) (whose authority will be reassigned to the Capital Investment Coordinating Board (BKPM) by January 2019). A power purchase agreement between the IUPTL applicant and its buyer (commonly, PLN) is a prerequisite to obtaining an IUPTL.

In terms of constructing generation facilities, an IUPTL holder may subcontract the construction to a qualified construction service

provider through an engineering, procurement and construction (EPC) contract. In addition to the laws and regulations governing construction services in general, providers for electrical installation are also governed by the Electricity Law and its implementing regulations, specifically, MEMR Regulation No. 35 of 2013, as amended by MEMR Regulation No. 12 of 2016, on Electricity Business Licensing Procedures (MEMR 35/2013), which classifies electrical installations as electricity supporting services, which require an Electricity Supporting Services Business Licence (IUJPTL).

Prior to the commencement of construction, an IUPTL holder must secure several licences from the regional or provincial government. These local licences are now regarded as commitments in the relevant IUPTL which must be fulfilled by the holder in a certain period as subsequent conditions, among others, a building permit (IMB), location permit and environmental licence. Compensation to any party whose assets (land, buildings or plants) are directly or indirectly affected must be settled prior to commencing construction.

Further, in accordance with MEMR Regulation No. 5 of 2014, as amended by MEMR Regulation No. 10 of 2016, on Electricity Procedures and Certification (MEMR 5/2014), prior to the operation of generation facilities, the IUPTL holder must obtain an operational feasibility certificate (SLO) issued by the OSS Agency on behalf of an institution accredited by the MEMR and registered with the DGE, subject to a physical assessment by the technical team from the institution.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Generation facilities are connected to the transmission grid subject to a power purchase agreement or a grid lease agreement in accordance with an electricity supply business plan from the transmission operator.

Before connecting to the grid, an electricity installation must satisfy safety and equipment standards determined by the MEMR by securing an SLO from an institution accredited by the DGE.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The use of renewable energy sources is encouraged at the policy level through the endorsement of the National Energy Policy, which aims to achieve the best possible energy mix for power production in Indonesia. The National Energy Policy provides that by 2025, energy consumption from new and renewable energy (biomass, nuclear, solar, wind, etc) should reach more than 23 per cent of total energy consumed and that the use of oil should be reduced to less than 25 per cent.

Since 2010, PLN has been provided with a fast-track programme for the development of coal-fired power plants, as well as the use of renewable energy and gas. Pursuant to MEMR Regulation No. 40 of 2014, there are 58 power plant projects and 40 transmission projects listed as fast-track private public partnerships involving coal, geothermal, water and gas-fired power plants.

Further, Presidential Regulation No. 4 of 2016 on Development of Electrical Infrastructure (PR 4/2016), as last amended by Presidential Regulation No. 14 of 2017, provides that for development of generation facilities using new and renewable energy, the central or regional government may give government support in the form of fiscal incentives, feed-in tariffs and outright subsidies.

Regarding feed-in tariffs, the MEMR recently issued MEMR Regulation No. 50 of 2017 on the Utilisation of Renewable Energy for Electricity Supply (MEMR 50/2017), which regulates a new appointment method and purchase price by PLN from renewable power plants.

MEMR 50/2017 provides that power purchase from power plants utilising renewable energy will be made through direct selection, whereas power purchase from renewable power plants that have high dependency on the weather (solar and wind) will be made through direct selection with capacity quota. The regulation further provides that power purchase prices by PLN from renewable power plants will be determined based on a tariff that does not include the electricity distribution price (BPP). As regulated under MEMR Regulation No. 24 of 2017 on the Mechanism for Stipulation of BPP by PLN, both the Local BPP and the National BPP will be determined every year by the MEMR. The prevailing BPP is currently determined through MEMR Decree No1772 K/20/MEM/2018 on the Amount of BPP by PLN for Year 2017.

For power plants utilising solar, wind, biomass, biogas and tidal or ocean thermal energy conversion, if the local BPP is higher than the national BPP, the maximum power purchase price by PLN is 85 per cent of the local BPP. If the local BPP is equal to or less than the national BPP, the power purchase price may be determined based on the consent of the parties.

For power plants using hydro, municipal waste or geothermal, if the local BPP is higher than the national BPP, the maximum power purchase price by PLN is equal to the local BPP. If the local BPP is equal to or less than the national BPP, the power purchase price may be determined based on the consent of the parties.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As part of a commitment to reduce the CO_2 emissions from deforestation and forest degradation, since 2010 the government has suspended the issuance of new mining licences in areas that are specified as primary natural forest and peat land (including conservation and protected forest areas). This reduced the potential amount of coal that can be produced for coal-fired power plants in Indonesia. However, given the abundance of cheap coal in Indonesia it is arguable whether this policy will have a substantial impact on the construction and use of coal-fired power plants.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There are currently no regulations on electricity storage. In general, the Energy and Mineral Resources Research and Development Body (LITBANG) under the MEMR is responsible for research and development in the fields of oil and gas, electricity, minerals and coal, new and renewable energy, energy conservation and sea geology. The authority of LITBANG includes organising technical policies and implementing research and development.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Both legislation on nuclear energy and the National Energy Policy encourage and provide the opportunity to develop nuclear power plants. However, to date, Indonesia has no commercial nuclear power plants, mainly owing to public resistance to nuclear power on health, safety and liability issues and the historical recognition of nuclear waste as a hazardous material. The development of nuclear power plants in Indonesia so far goes no further than for research under the supervision of the national nuclear agency (BATAN).

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Main permit

Based on GR 14/2012, an IUPTL is required to engage in the transmission business. This may be an IUPTL specifically for transmission, or an integrated IUPTL for power generation that also permits transmission activities. To obtain an IUPTL, the applicant is required to submit a transmission network lease or joint use agreement with the candidate user of the transmission network in addition to other administrative and technical requirements regulated under MEMR 35/2013.

Issuing authority

In accordance with GR 24/2018 and the most recent Regulation of BKPM, the issuing authority of an IUPTL is now the OSS Agency on behalf of the relevant central or provincial government. Authority will be reassigned to BKPM within six months after July 2018.

The OSS Agency on behalf of the central government is authorised to issue IUPTLs to entities whose business areas are cross-province, state-owned enterprises, and those who sell electricity or lease off the electricity grid to an IUPTL holder. The OSS Agency on behalf of the provincial government is authorised to issue IUPTLs to entities whose business areas are cross-regency and who sell electricity or lease off the electricity grid to an IUPTL holder. Further, the OSS Agency on behalf of the provincial government is authorised to issue IUPTLs to entities whose business areas are within a single regency or city and who sell electricity or lease off the electricity grid to an IUPTL holder whose licence was granted by the local government.

Other licences

In addition to the above, after the issuance of IUPTL, the applicant must fulfil commitments to secure an IMB, location permit, and an environmental licence from the OSS on behalf of the local government and must compensate any party whose assets (land, buildings, or plants) are directly or indirectly affected by the transmission network. Before commencing operation, a transmission installation must secure an SLO issued by an accredited technical inspection institution.

Private investment in power transmission and distribution in Indonesia is very rare to date, as transmission and distribution historically have been monopolised by PLN.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Any party that provides power to the grid (including an IPP) and that holds an IUPTL may have access to the transmission or distribution grid to supply power to the public. Specifically for IPPs, access to the grid is subject to the PPA with PLN governing the terms of the IPP's electricity transfer to PLN's transmission grid.

Other than the above, access to the grid may also be obtained through a lease agreement between the holder of an IUPTL for transmission and the user of the grid. The fee for such lease must be approved by the MEMR or governor, according to their jurisdiction.

An IUPTL holder who produces power and owns and operates a transmission network is also eligible to access transmission and distribution networks.

Utilisation of transmission or distribution networks for telecommunications, multimedia and information purposes is permissible, subject to a licence issued by the OSS Agency on behalf of the MEMR, provided that such utilisation does not compromise power supply in the area.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Since 2010, the government has assigned PLN to develop electricity infrastructures to meet the target of 35,000MW power generation and 46,000km transmission grid across Indonesia, particularly with the issuance of MEMR Regulation No. 15 of 2010 on List of Fast Track Projects in Renewable Energy, Coal and Gas Power Generation and the Relevant Transmissions, as amended four times, lastly by MEMR Regulation No. 40 of 2014. Consistent with this objective, PR 4/2016 specifically provides government financial support for the development of electrical infrastructures, including transmission grids, by PLN through an independent management scheme.

Despite the regulations allowing private sector involvement in electricity transmission, the historical monopoly on transmission by PLN is expected to continue for some time. The expansion of transmission networks by the private sector may likely take longer to realise, considering that the government incentives to encourage the development of transmission networks for private entities were only just introduced in early 2016. They are, among others, in the form of delegation of land acquisition to government institutions on behalf of private entities, and an increase in foreign ownership permitted in mid—high-voltage electricity.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The tariff for leasing transmission services is regulated by the government (ie, MEMR, governor), depending on the location of the transmission network.

Transmission services may be leased through a network lease agreement between the transmission operator and another transmission operator.

The parties to a network lease agreement, through a Transmission Business Entity, may propose the price of power transmission by submitting a written application to the MEMR or governor for approval pursuant to MEMR Regulation No. 1 of 2015 on Cooperation for Electricity Supply and Joint Utilisation of Electrical Grid. The approved price or fee from the relevant authority may be in the form of a benchmark price.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The MEMR, through the DGE, is responsible for assuring the reliability of the transmission grid. An inspector from an accredited technical inspection institution will issue an SLO in connection with the installation and operation of the transmission grid.

In the event of non-compliance, the inspector may recommend suspension of the activities of the service provider, which may result in revocation of its operational licence.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

An IUPTL is the main licence needed to construct and operate distribution networks. The IUPTL can be issued specifically for distribution, or distribution can be included in an integrated IUPTL that covers generation, transmission and sales. The OSS Agency on behalf of the MEMR or the provincial government, depending on the jurisdiction, is the relevant authority to issue an IUPTL.

An IUPTL for distribution requires:

- stipulation of electricity business area by the BKPM (on behalf of the MEMR);
- approval of electricity selling price or transmission lease price by the MEMR;
- approval of the applicant's electricity supply business plan; and
- a distribution network lease or joint-use agreement with the candidate user of the distribution network.

The stipulation of an electricity business area (WIUPTL) as a prerequisite to apply for an IUPTL for distribution is subject to the procedures outlined in MEMR Regulation No. 28 of 2012 as lastly amended by MEMR Regulation No. 7 of 2016 on Procedures for Application for WIUPTL for Public Interest. Note that there may be only one business entity in each WIUPTL. A WIUPTL may be granted only if the territory is not yet reached by a business entity covering a WIUPTL or if the business entity covering a WIUPTL in such territory is not capable of meeting electricity demands. Like transmission, despite the regulations allowing private sector involvement in the distribution business, the historical monopoly on distribution by PLN as the holder of most WIUPTLs in Indonesia is expected to continue for some time.

Like the transmission sector, the distribution applicant must also fulfil commitments stipulated in the form of a building permit (IMB), a location permit and an environmental licence from the local government and settle with any party whose assets (land, buildings or plants) are directly or indirectly affected by the distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Any party that provides power to the grid (including an IPP) and that holds an IUPTL may access the distribution grid to supply power to the public. Access to the grid must be evidenced by a lease between the holder of the IUPTL for distribution and the user of the grid. The fee for such a lease must be approved by the MEMR or governor.

Utilisation of electricity distribution networks for telecommunications, multimedia and information purposes is permissible, subject to a licence from the OSS Agency, provided that such utilisation does not compromise power supply in the area.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Similar to the transmission business, distribution is technically open to the private sector. However, in practice, even private IPPs are still relying on PLN's distribution grid to supply their power to end users. In terms of regulator involvement, MEMR Regulation No. 4 of 2009 on Provisions on Electricity Distribution stipulates a code of conduct for the distribution business, including standard policies for distribution, connection, operation, planning and settlement. Government incentives for private sector distribution business are not currently available.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The tariff for the lease of distribution services is regulated by the government (MEMR or governor) depending on the location of the distribution network.

Distribution, as well as distribution services, may be leased through a network lease agreement between the distribution operator and another distribution operator.

The parties to the network lease agreement may propose the price of power distribution by submitting a written application to the MEMR or relevant governor. The approved fee may be in the form of a benchmark price.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Indonesia recognises two types of power sales: from one IUPTL to another IUPTL, and from an IUPTL holder to end users.

An IUPTL is required for all entities engaging in the power sales business. However, for sales from one IUPTL to another IUPTL, the purchaser must conduct a public tender, and the proposed purchase of power must conform to the electricity supply business plan approved by the MEMR. The public tender requirement does not apply, and the purchaser may directly appoint its desired party, under the following circumstances:

- where the power originates from a generator using renewable energy, marginal-gas, mine-mouth coal or other local energy;
- in connection with the purchase of excess electricity;
- in a power supply crisis or emergency; and
- expansion of power plant capacity in the same operating power station in the same area.

If power sales are in the framework of diversification of energy for non-fuel power generation, then the purchaser may compare and choose from at least two bidders that have submitted proposals.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. As mentioned in question 18, there are two types of power sales and, therefore, there are two types of tariff. Basically, for on-grid power sales (from one IUPTL to another IUPTL), the tariff is developed through a public tender process with the agreed price approved by the relevant authority (MEMR or the governor). The government has provided several feed-in tariffs for purchase of electricity from IPPs for certain power generators (eg, MEMR Regulation No. 50 of 2017 on the Utilisation of Renewables for Power Generation and MEMR Regulation No. 19 of 2017 on the Utilisation of Coal for Power Generation and Purchase of Excess Power).

In Indonesia, the term 'tariff' is used in connection with the price of electricity to end users. Pursuant to GR 14/2012, tariffs for electricity sold to consumers are determined by the MEMR or governor, subject to approval by the provincial or national house of representatives. For PLN, as a state-owned enterprise whose licence is granted by the central government, the tariffs are determined by the MEMR. The prevailing tariff for PLN is stipulated from time to time and lastly under MEMR Regulation No. 28 of 2016 on the Tariff of Electricity Supplied by PLN (MEMR 28/2016), as last amended by MEMR Regulation No. 41 of 2017. In such regulation, tariffs vary depending on the use of the electricity (for example, for household, business, or industrial purposes, or for wholesale) and the power of electricity (for example, 450VA).

In Indonesia, the electricity supply sector is monopolised by PLN, and the electricity tariff provided by PLN is divided into two categories: a regular post-paid tariff and a prepaid tariff.

Electricity is considered a good with a strategic purpose and is therefore exempted from VAT, except for in housing with capacity of more than 6,600W.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Like power sale tariffs mentioned in question 19, wholesale power tariffs are determined by the MEMR or governor, subject to approval from the provincial or national house of representatives, depending on where the wholesale power is generated and sold. For wholesale electricity provided by PLN pursuant to MEMR 9/2015, the threshold for wholesale electricity is electricity above 200kVA.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The underlying constitutional principle of the Electricity Law is article 33 of the 1945 Constitution of the Republic of Indonesia, which stipulates that sectors of production that are vital to the state and affect the greater livelihood of the people shall be under the power of the state. That article also provides that the land, waters and natural resources of the country shall be under the powers of the state and used for the greatest benefit of the people. The core of the Electricity Law and electricity supply, therefore, is to achieve social welfare.

In accordance with the Electricity Law, electricity should be:

- supplied in sufficient amount;
- reliable in quality;
- reasonable in price and tariff;
- for the welfare of the people; and
- able to achieve sustainable development.

Further, the Energy Law provides that the purpose of energy development is to increase energy access for unfortunate and isolated citizens and to reduce regional disparity with respect to availability of enough power and related infrastructures.

Other than the general policy objectives, there are no specific public service obligations.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

At the central government level, the highest authority is the House of Representatives, which has full authority to promulgate laws on electricity. Second is the President, who has authority to determine policies, regulations, management, and implementation of the electricity

supply. The MEMR monitors and supervises the electricity sector and implements the policies, law and regulations, and maintenance of electricity supply, including but not limited to establishing technical regulations and issuing licences. Under the MEMR is the DGE, who has the authority to formulate and carry out policies and technical standards under the MEMR.

The National Energy Council is responsible for developing the National Energy Policy for the House of Representatives' approval, most recently the National Energy Policy for the period 2014–2050.

In some regions in Indonesia, the provincial (and regional) government may promote electricity development by giving support to certain types of IPP, such as mine-mouth coal-fired power plants, in the form of accelerated issuance of permits, licences, approvals and recommendations. For example, in April 2014, the Governor of Sumatera Selatan issued a letter supporting the development of mine-mouth coal-fired power plants that utilise low-rank coal (below 3,000kcal/kg) and offering to assist in the process of obtaining location permits and environmental licences. Such preference is not recognised by the MEMR, which gives the same treatment for every type of IPP.

23 Scope of authority

What is the scope of each regulator's authority?

The provincial and national houses of representatives reserve the right as consultation regulatory bodies for the central and provincial governments when drafting the national electricity master plan and giving approval of electricity tariffs. The main authorities of the Central and Provincial Government are as follows.

The central government (MEMR)
The role of the MEMR is to:
- stipulate electricity guidelines, standards and criteria;
- set guidelines in determining consumer electricity tariffs;
- set electricity tariffs for certain consumers and electricity network leasing from IUPTL holders determined by the central government;
- approve the sale of excess electricity from operational licence holders determined by the central government;
- issue approval for electricity sales price or transmission grid lease price for IUPTL holder which licence is issued by the central government; and
- impose administrative sanctions on business entities whose licences are issued by the central government.

The provincial government
The role of the provincial government is to:
- stipulate provincial regulation on electricity;
- set electricity tariffs for certain consumers and electricity network leasing from IUPTL holders determined by the regional government;
- approve the sale of excess electricity from operational licence holders determined by the regional government;
- issue IUPTL for cross regions or cities or inside a region or city IPPs, INSID state-owned IPPs;
- issue approval for electricity sales price or transmission grid lease price for IUPTL holder which licence is issued by the regional government; and
- impose administrative sanctions on business entities whose licences are issued by the regional government.

The OSS Agency on behalf of the central and provincial government
The role of the OSS Agency on behalf of the central and provincial government is to:
- issue IUPTL;
- issue Operational Licence;
- issue Electricity Working Area;
- issue Cross-States Electricity Purchase Licence;
- issue IUJPTL; and
- issue licences for implementation of electricity networks for telecommunications, multimedia and informatics.

The OSS Agency on behalf of the institutions accredited by the MEMR
The role of the OSS Agency on behalf of the institutions accredited by the MEMR is to:
- issue SLO;
- issue Electricity SBU; and
- issue Technical Competence Certificate on Electricity (SKTTK).

The DGE has the authority to stipulate implementing regulations of MEMR regulations and to supervise and monitor the electricity sector.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The electricity sector is regulated exclusively by the central and provincial governments. There is no independent regulatory authority.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The forum to challenge or appeal a regulation or decision of a regulatory body (provincial and national houses of representatives, the MEMR or governor, and the DGE) depends on whether the decision affects public or private interests. Permits, licences and approvals affecting private interests are challenged through the Administrative Court based on Law No. 15 (1985) on Administrative Court, as amended. In the event a regulatory instrument affects the public interest (ie, issuance of a law or regulation), judicial review can be requested in the Constitutional Court (for laws) or Supreme Court (for regulations).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

It is important to note that to engage in electricity business in Indonesia the investor must establish a single purpose company, which cannot engage in multiple business sectors. Therefore, merger with or acquisition of a company in another sector is not allowed.

However, it is possible for an electricity company to be acquired by a company that engages in another sector. There is no longer a requirement to obtain approval from the BKPM for a change of shareholding composition of a target company. Any change of shareholding composition will require only an update of the target company's data in the OSS system. In the event that an acquiring company that holds a company engaging in the electricity sector intends to acquire another company engaging in the electricity sector (ie, a parent company of a transmission network company intends to acquire a distribution network company), it may be subject to review by the Commission for Supervision of Business Competition (KPPU), which has the authority to unwind mergers and acquisitions that lead to monopoly, anti-competitive business practices, or market concentration. Under the Electricity Law, PLN as a state-owned enterprise has been prioritised to conduct electricity business in Indonesia, including generating and providing electricity. As such, PLN is exempt from the Anti-Monopoly Law (Law No. 5 of 1999).

Besides the KPPU, under Indonesian investment regulations, acquisition transactions shall always refer to the Negative Investment List based on Presidential Regulation No. 44 of 2016, which regulates foreign share ownership of specific sectors, including electricity.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Based on Government Regulation No. 57 of 2010 on Merger or Consolidation of Business Entities, the KPPU's assessment is based on the resulting asset value of the company after merger or acquisition. Transactions resulting in combined assets exceeding 2.5 trillion rupiah or combined sales turnover exceeding 5 trillion rupiah are required to notify the KPPU no later than 30 days after the transaction takes effect. The KPPU will review the transaction within 90 days of receiving notification. Delay in notifying the KPPU can result in fines of 1 billion rupiah per day, up to 25 billion rupiah.

Notification to the KPPU is not required for merger or acquisition between affiliated companies.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The KPPU has the authority to investigate, review and sanction anti-competitive behaviour by companies. Because the only significant player in the electricity sector to date is PLN, and electricity tariffs are stipulated or approved by the government, anticompetition concerns have not arisen in Indonesia.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Pursuant to the Anti-Monopoly Law, there are three prohibited categories. First, the law prohibits contracts that have elements of:

- oligopoly;
- price-fixing;
- dividing territory;
- boycotting;
- cartels;
- trusts;
- oligopsony;
- vertical integration; or
- exclusive dealing.

Second, the law prohibits activities that lead to monopoly, monopsony, market dominance, and conspiracy. The difference between prohibition of contracts and activities is the scope of the prohibition. The prohibition of contracts applies only to arrangements between two or more business entities, while the prohibition of activities could apply to a single business entity.

The third category involves prohibition of the abuse of a market dominant position. The abuse of market dominance provisions of the Anti-Monopoly Law focuses on regulating interlocking directorates, share ownership, and mergers, acquisitions and dissolutions.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The KPPU has the authority to preclude or remedy anticompetitive or manipulative practices by:

- appraising contracts and activities that may cause anticompetitive practices;
- giving suggestions and recommendations related to anticompetitive practices;
- investigating cases that may cause anticompetitive practices; and
- imposing administrative sanctions on business entities that violate the Anti-Monopoly Law including:
  - cancelling an agreement that causes anticompetitive practices;
  - ordering the entrepreneur to stop anticompetitive activities;
  - cancelling a merger, acquisition, or dissolution;
  - determining compensation; and
  - issuing fines up to 25 billion rupiah.

Update and trends

The MEMR recently enacted MEMR Regulation No. 48 of 2017 dated 3 August 2017 on The Supervision of Business in the Field of Energy and Mineral Resources (MEMR 48/2017). MEMR 48/2017 regulates the requirement to obtain an approval or notify the MEMR for certain changes in the shareholding composition or management of a company engaging in the energy and mineral resources business, including IPP Companies.

Based on MEMR 48/2017, an IUPTL holder that sells its electricity to PLN is not allowed to change its shareholding composition before the Commercial Operation Date. An exemption to the above is made only if the transfer of shares is performed to an affiliate of the majority shareholder, which 90 per cent of its share is owned by such majority shareholder directly. Such transfer requires an approval from PLN. The share transfer should also be notified to the MEMR through the DGE after the notification from the Minister of Law and Human Rights (MOLHR) is obtained. An IUPTL holder must also notify the changes in the composition to its Board of Directors or Board of Commissioners to the MEMR through the DGE after the notification from the MOLHR is obtained.

Introduction of the OSS system as an integrated licencing service for all central and regional licences is also new to the licencing regime. The OSS system was officially launched on 9 July 2018. The two types of licences introduced in GR 24/2018 are the business licence and the operational or commercial licence.

Business licences are licences obtained to commence business or activities before the company's commercial or operational phase. Business licences in the electricity sector include IUPTL, Operational Licence, Electricity Working Area Stipulation, Cross-States Electricity Sales Licence and the IUJPTL. Commercial or operational licence includes the SLO, Electricity SBU and SKTTK.

Further, the president passed Presidential Regulation No. 13 of 2018 on the Implementation of Know Your Beneficial Owner Principle by Corporations for the Prevention and Eradication of Criminal Acts of Money Laundering and Terrorism Financing (PR 13/2018), which became effective as of 5 March 2018. PR 13/2018 requires corporations to disclose their beneficial owners (ie, individuals) to relevant authorities.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The current Negative Investment List provides some limitations on foreign ownership in the electricity sector. Power generation under 1MW is closed to foreign investors. Generation from 1MW to 10MW may be conducted through a partnership with local entities in which foreign investors are limited to 49 per cent share ownership (67 per cent for geothermal), while, for electricity generation above 10MW, electricity transmission, and distribution, the foreign investor may hold up to 95 per cent, or 100 per cent in the context of public–private partnership during the concession period.

The Negative Investment List now also allows up to 49 per cent foreign investment for construction and installation of mid- and high-voltage electricity facilities, which formerly was restricted to domestic investment. For producers of biomass pellets, foreign investors may own 100 per cent shares with no further requirement for entering into a joint venture or partnership with a local company. The above foreign ownership limitations do not apply for companies operating in special economic zones (Kawasan Ekonomi Khusus – KEK).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The Electricity Law recognises transmission and distribution grids as the only form of interconnectors. The transmission and distribution

businesses are subject to IUPTL as the main operating licence. A WIUPTL must be secured prior to the IUPTL application. As previously explained, there may be only one business entity in a WIUPTL.

The applicant must also fulfil commitments to secure an IMB, location permit, and an environmental licence from the OSS on behalf of the local government and must compensate any party whose assets (land, buildings or plants) are directly or indirectly affected by the transmission or distribution network. Furthermore, in accordance with MEMR Reg 5/2014, a transmission or distribution installation must secure an SLO before being allowed to operate.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Cross-border electricity supply through sale and purchase may be conducted by an IUPTL holder with an additional licence from the BKPM, including cross-border interconnection or joint use of network licence. Cross-border electricity sales may be conducted on the condition that:

- the domestic electricity demand has been fulfilled;
- the sale price of the electricity is not subsidised; and
- the cross-border electricity sale must not interfere with the quality and reliability of domestic supply.

Cross-border electricity purchases may be conducted if:

- domestic electricity demand has not yet been fulfilled;
- the purchase supports fulfilment of domestic demand;
- the purchase does not harm the interest of the state;
- the purchase improves the quality and reliability of the domestic supply;
- the purchase does not create dependency on foreign sources; and
- the purchase does not neglect the development of domestic electricity supply capacity.

The price of cross-border electricity must be related to the economic value of the electricity and must be approved by the MEMR.

Cross-border electricity sale and purchase activities are also subject to customs regulations. There is no tariff for cross-border electricity interconnection in Indonesia.

Further study of extra high-voltage cross-border interconnection between Indonesia and Malaysia through the Sumatera and Borneo grids is still progressing. Indonesia is in the process of amending its regulations regarding cross-border interconnection, including updating Presidential Regulation No. 77 of 2008 on Ratification of Memorandum of Understanding on the ASEAN Power Grid and Government Regulation No. 42 of 2012 on Cross-Border Power Purchase.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

To date, there are no rules that restrict transactions between an entity carrying out electricity supply business and its affiliates, although in general, affiliated transactions are required to follow the arm's-length principle, and arm's-length pricing documentation should be maintained.

State-owned enterprises can directly appoint their affiliates for goods and services procurement under certain conditions, if the arm's-length principle is also met.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Affiliated transactions are subject to scrutiny by the Directorate General of Taxation, which has an aggressive transfer pricing unit. Sanctions for improper transfer pricing involve stiff penalties.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The Minister for Communications, Climate Action and Environment is the member of the Irish government with responsibility for the exercise of executive power in relation to (among other things) the Irish electricity sector. A number of other statutory bodies have policy-related functions, including the Commission for Regulation of Utilities (CRU).

The Electricity Regulation Act 1999 (the 1999 Act) is the central piece of legislation governing the Irish electricity sector. The 1999 Act established the CRU and has been amended frequently since its passage in order to supplement the role, powers and duties of the CRU. The 1999 Act also made provision for the issuance, by the CRU, of licences in relation to the generation and supply of electricity. The administration by the CRU of this licensing function and the supervision by the CRU of licensed activities (which have been extended to include transmission and distribution ownership and operation, and the operation of electricity interconnectors) form the basis for the competition that exists in the Irish electricity sector.

Irish government policy in the electricity sector tends to reflect EU energy policy, and recent Irish legislation tends to be driven by the requirement that relevant EU legislation be transposed into national law. Thus, the 1999 Act was enacted in order to give effect in Ireland to EU Directive 96/92/EC, which was itself enacted as part of the first EU energy package. EU Directives 2003/54/EC and Directive 2009/72/EC, enacted as part of the second and third EU energy packages respectively, have also subsequently been transposed into Irish law.

In furtherance of its obligation, pursuant to the EU Renewable Energy Directive (2009/28/EC), to source 16 per cent of the country's total energy consumption from renewable energy sources by 2020, the Irish government has set a 40 per cent target for renewable electricity. On the reasonable assumption that most of this renewable electricity will be generated by onshore wind farms, it has been estimated by EirGrid plc that a total of around 4,000MW of wind generation will need to stand connected, compared to approximately 3,650MW that is currently installed. The Irish government also maintains a National Energy Efficiency Action Plan, as it is required to do pursuant to the EU Energy Efficiency Directive (2012/27/EU).

A distinct local manifestation of Irish electricity policy was the commencement, on 1 November 2007, of trading in the Single Electricity Market (SEM), the wholesale electricity market through which most of the electricity generated and consumed on the 'island of Ireland' (encompassing the Republic of Ireland, together with Northern Ireland) is required to be traded. The SEM began as a gross mandatory pool market, where a single system marginal price for energy was set 'ex post', and the availability of generation capacity was rewarded by a regulated scheme of capacity payments.

During 2018, the redesign of the SEM was effected by way of the Integrated Single Electricity Market (ie, I-SEM) project, which replaced the ex post pool market with day-ahead, intraday and balancing markets for energy, and replaced the capacity payment arrangements with a 'capacity remuneration mechanism', under which capacity support is allocated by auction. The development of the energy trading arrangements within I-SEM was driven by the requirements of the network codes published under EU Regulation 714/2009 (which was also enacted as part of the third EU energy package).

The regulation and oversight of the SEM is complicated by the fact that its territory includes two separate legal jurisdictions. To ensure consistency of SEM regulation as between these jurisdictions, the electricity regulator in each jurisdiction retains exclusive regulatory authority in its particular jurisdiction (CRU in the Republic of Ireland and the Northern Ireland Authority for Utility Regulation (NIAUR) in Northern Ireland), but is required under local statute to discharge its SEM-related functions through a committee known as the SEM Committee, which has an identical constitution and membership in each jurisdiction. In Ireland the enduring arrangements underpinning these regulatory arrangements were given a statutory footing by way of amendments made to the 1999 Act in 2006 and 2007.

The latest comprehensive statement of Irish government energy policy is the White Paper published in December 2015 and entitled 'Ireland's Transition to a Low Carbon Energy Future – 2015–2030'. In relation to electricity, it is noted in the White Paper that the transition to a low carbon future will involve generating electricity from renewable sources, increasing the electrification of home heating and transport and improving the take-up of electric vehicles.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Prior to the liberalisation of the Irish electricity sector through the passage of the 1999 Act and the introduction of the generator licensing regime, substantially all electricity generation in Ireland was carried out by the Electricity Supply Board (ESB), a statutory body that is majority-owned by the Irish government, and in which its employees have a minority shareholding. However, it is now possible for any person to carry out the generation of electricity so long as they first obtain from the CRU a licence to generate electricity and an authorisation to construct the relevant generating station. A generator having nameplate capacity in excess of 10MW is required to participate as a generator in the SEM, while a generator having nameplate capacity of 10MW or less may elect to, but is not required to, participate in the SEM.

It is noteworthy that the Irish electricity system is small (having an all-time peak system demand of approximately 5,000MW), at least when compared to the scale of (for example) modern combined cycle gas turbine generators. In a market power modelling exercise carried out as part of the I-SEM project, the CRU and NIAUR forecast that in 2016, ESB would retain a 44.4 per cent share of installed SEM generation capacity and a 46.6 per cent share of SEM generation (by volume).

While the market therefore remains relatively concentrated, a noteworthy trend in recent years has been the rapid increase in the amount of onshore wind generation connected to the Irish electricity system. There is now approximately 3,650MW of onshore wind generation connected (up from approximately 500MW as at the end of 2005), spread across a numerous and diverse set of owners – although the recent consolidation of development activities into a smaller sub-set of actors is also evident.

Transmission

Ownership and, separately, operation of the Irish electricity transmission system requires the holding of an appropriate licence issued by the CRU pursuant to the 1999 Act. The 1999 Act provides that a licence to own the transmission system may be issued only to ESB, and that

a licence to operate the transmission system may be issued only to EirGrid plc (wholly owned by the Irish government). ESB and EirGrid plc regulate their relationship, in relation to the transmission system, by way of a contractual Infrastructure Agreement.

On 22 May 2013 EirGrid plc was certified by the CRU as the electricity transmission system operator (TSO) for Ireland for the purposes of Directive 2009/72/EC and Regulation 714/2009. This certification amounted to a finding that the arrangements for the ownership and operation of the Irish electricity transmission system satisfied the requirements of Directive 2009/72/EC in relation to the independence of transmission system operation from electricity generation and supply.

Distribution

Ownership and, separately, operation of the Irish electricity distribution system requires the holding of an appropriate licence issued by the CRU pursuant to the 1999 Act. ESB is the licensed owner of the distribution system (DAO) and ESB Networks DAC, a wholly owned subsidiary of ESB, is the licensed operator of the distribution system (DSO).

Retail supply of electricity

Prior to the liberalisation of the Irish electricity sector through the passage of the 1999 Act and the introduction of the supplier licensing regime, the retail supply of electricity in Ireland was carried out by ESB. From February 2005, all Irish electricity customers were eligible to select an alternative electricity supplier, and initially the ESB's supply business was restricted in its ability to determine its retail prices and thereby compete to win back customers. Following the achievement of what the CRU determined to be an adequate level of consumer switching, these pricing restrictions were removed for business customers in October 2010 and for domestic customers in April 2011. As a condition of this deregulation, the supply business of ESB – which, at quarter 1 of 2017, still enjoyed a majority share (51.16 per cent of the domestic electricity market, measured by consumption) – was rebranded as 'Electric Ireland'.

Any person may now carry out the retail supply of electricity in Ireland so long as they first obtain from the CRU a licence to supply electricity and accede to participation as a supplier in the SEM, which requires the provision to the market of appropriate collateral.

Capacity remuneration

From SEM go-live (November 2007) until I-SEM go-live (October 2018), participation as a generator in the SEM carried with it an entitlement to receive capacity payments in return for plant availability. The SEM regulators determined, for each calendar year, an Annual Capacity Payment Sum, which is distributed to SEM-participating generators throughout the year on a weighted basis reflecting the relative scarcity, and corresponding value, of generation capacity at various times. The last Annual Capacity Payment Sum set by the regulators was €545,526,720 for the full calendar year 2018 – although owing to I-SEM go-live in October 2018, a lesser amount of payments was disbursed under the scheme.

Following I-SEM go-live, in order for a generator to receive remuneration for capacity, it must successfully bid in an auction and be awarded a contract for difference in regulated form. Broadly, the terms of the contract provide for the payment to the generator of a capacity fee (based on auction bids), but also require the generator to pay back any revenues earned in the energy market when prices exceed a regulated strike price. Auctions and contracts run on various timetables. The first auction was held in December 2017, in respect of the capacity year 2018/2019. The auction clearing price was €41,800 per MW, or GBP£38,104.88 per MW.

System services

In its capacity as the operator of the Irish electricity transmission system, and with a view to increasing the percentage of instantaneous demand that may be securely served by intermittent generators, EirGrid plc is operating a programme of operational improvements known as 'Delivering a Secure, Sustainable Electricity System' (DS3). The DS3 programme includes the procurement of technical system services, such as operating reserve, frequency response and ramping capabilities, from market participants that are capable of providing them.

The procurement of these system services is currently proceeding under an interim arrangement involving the setting of tariffs by the CRU and the NIAUR, and the award of contracts to all providers that meet the requisite procurement criteria. It is proposed that for certain 'high-availability' services, this interim arrangement will eventually be replaced by an enduring arrangement involving a series of rolling auctions.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The electricity regulatory authorisation required to construct a generation facility is an 'authorisation to construct or reconstruct a generating station', issued by the CRU pursuant to section 16 of the 1999 Act. The criteria to which the CRU may have regard in determining an application for such an authorisation are prescribed under the Electricity Regulation Act 1999 (Criteria for Determination of Authorisations) Order 1999 (SI No. 309 of 1999). Other authorisations such as planning permission are also required.

The electricity regulatory authorisation required to operate a generation facility is a licence to generate electricity issued by the CRU pursuant to section 14(1)(a) of the 1999 Act. Other operational permits such as an integrated pollution prevention and control licence may also be required.

Authorisations to construct and generation licences are typically issued by the CRU in a standard form, each of which is personalised only to the extent required to identify the relevant licence-holder and project. The 1999 Act includes a procedure, involving public consultation, under which the CRU may modify an issued authorisation or licence. The CRU modified the form of standard generation licence in 2007 in preparation for the commencement of trading in SEM, and then again in 2017 in preparation for I-SEM go-live, although the CRU suspended the latter set of modifications following a challenge from a licence-holder.

Streamlined procedures also exist to facilitate the issuance of authorisations to construct and generation licences in respect of generators that are to have an installed capacity of 10MW or less. Of these, generators that are to have an installed capacity of 1MW or less automatically stand duly authorised and duly licensed, without the need for formal application to be made to the CRU.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Section 34 of the 1999 Act confers upon the CRU regulatory powers in respect of the connection of electricity generators to the transmission grid. Section 34 provides that where an application is made to the TSO for connection to or use of the transmission system, the TSO must (except where certain circumstances apply) offer to enter into an agreement for such connection or use, in accordance with directions given to the TSO by the CRU from time to time.

The CRU has used this power of direction to stipulate the required standard form of transmission connection and use of system agreements, as well as the approach required to be taken by the TSO to applications for connection. The most significant uses of this power have been:

- the approval of the basis upon which the system operators levy charges for the connection of parties to the electricity transmission and distribution systems. Each connecting party is generally responsible for meeting the cost of the construction of local connection assets, as designed by the system operators on a 'least cost technically acceptable' basis. Certain connection assets may be procured 'contestably', whereby the connecting party, rather than the system operators, is responsible for the construction of the relevant assets; and
- the establishment of the group processing approach (GPA) to connection applications, which was introduced by the CRU in 2004 and which limited the availability of connection to renewable generation projects that fell within the criteria specific for membership of the Gate 1 (370MW), Gate 2 (1,300MW) and Gate 3 (4,000MW)

capacity tranches. A separate 2,000MW tranche of capacity was subsequently added to the Gate 3 programme for conventional (non-renewable) generation.

In March 2018, the CRU established an 'enduring connection policy' (ECP) to replace the GPA, and announced that the first batch of capacity under this policy (ECP-1) would comprise at least 1,000MW, with up to 400MW reserved for projects capable of providing DS3 services. Provision was made for the transfer, into ECP-1, of projects awaiting the processing of their applications under the GPA. In order to be eligible for a grant of capacity under ECP-1, an applicant project was required to have received planning permission – although this requirement did not apply to applicants seeking to avail of the capacity reserved for DS3 projects. The size of, and policies associated with, subsequent ECP capacity batches have not yet been determined, and the CRU has merely noted its 'expectation' that the system operators will offer the next batch in 2020.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Pursuant to the 1999 Act the Minister and the CRU are required, when carrying out their duties, to have regard to the need to promote the use of 'renewable, sustainable or alternative forms of energy'. This category is defined as the production of electricity using, as the primary source of energy, any of wind, hydro, biomass, waste (including waste heat), biofuel, geothermal, fuel cells, tidal, solar and wave (or a combination of such sources).

Public Service Obligation (PSO) support schemes

Under section 39 of the 1999 Act, the Minister is required to direct the CRU to impose 'public service obligations' upon electricity licenceholders, which may include such arrangements as are necessary to ensure the availability of electricity generated using 'renewable, sustainable or alternative forms of energy' or which operate as combined heat and power (CHP) plants.

This PSO mechanism was used to establish three renewable energy feed-in tariff (REFIT) support schemes. Each of these schemes operated by paying, to the off-taker of a supported power purchase agreement with a renewable generator, a feed-in tariff reflecting the difference between the wholesale electricity price and the technology specific price guaranteed to the generator under the REFIT scheme. The last of the schemes, REFIT 3, closed to new applicants on 31 December 2015. REFIT support for an eligible project will expire after 15 years or at 31 December 2032, whichever occurs first.

In July 2018, following an earlier consultation exercise, the Department of Communications, Climate Action and Environment announced its intention to establish a new Renewable Electricity Support Scheme (RESS), and published an accompanying high level design paper. The RESS is intended to operate by allocating long-term two-way contracts for difference, capped by output (rather than capacity), to projects that are successful in RESS auctions. In order to be eligible to participate in auctions, projects will need to satisfy community participation requirements, and to hold planning permission and a grid connection offer. The first RESS auction is anticipated to occur in 2019 in respect of 1GWh of electricity from 'shovel ready' renewable projects, and a series of subsequent auctions out to 2025 (for project delivery by the end of 2030) is anticipated. At the time of writing, the RESS scheme remains subject to State aid approval, and the development of a detailed design.

Planning

The Planning and Development Act 2000 allows an enhanced approval procedure for planning applications for wind farms with more than 25 turbines or an output of greater than 50MW, where the Planning Appeals Board considers that the project is of strategic, economic or social importance, contributes substantially to fulfilling the National Spatial Strategy or regional planning guidelines or would have a significant effect on the area of more than one planning authority. In 2006, the Department of Environment, Heritage and Local Government (as it then was) published Wind Energy Development Guidelines, which set the national policy context to be applied by planning authorities in the determination of planning applications for wind farms.

On 13 June 2017, the Minister for Housing, Planning, Community and Local Government, in conjunction with the Minister for Communications, Climate Action and Environment, announced a preferred draft approach to address the key aspects of the review of the 2006 Wind Energy Development Guidelines. The key aspects of the preferred draft approach are:

- new noise restriction limits of a relative rated noise limit of 5dB(A) above existing background noise within the range of 35–43dB(A) for both day and night, with 43dB(A) being the maximum noise limit permitted;
- for visual amenity purposes, each turbine should be set back, from the curtilage of a residential property, by a distance of at least four times its tip height, subject to a mandatory minimum setback of 500 metres;
- the adoption of technology that will shut off each wind turbine automatically to eliminate any shadow flicker;
- a Community Report, which describes how the proposed wind farm was designed in response to consultation with communities, will have to be submitted along with each planning application;
- the applicant will need to offer a form of community dividend, that will ensure the project is of enduring economic benefit to the communities concerned;
- from a visual amenity aspect, grid connections to wind farms should be underground; and
- the proposed approach will be further supported by the Good Practice for Wind Energy Development Guidelines, issued in 2016 by the Department of Communications, Climate Action and Environment.

A Strategic Environmental Assessment (SEA) of the draft approach to the revised guidelines will be undertaken before they are finalised. Following the completion of the SEA, the guidelines will be finalised and issued under section 28 of the Planning and Development Act 2000 and will apply to planning applications for future wind energy development proposals.

Priority dispatch

Ireland is required, pursuant to the EU Renewable Energy Directive (2009/28/EC), to ensure that transmission and distribution system operators 'guarantee the transmission and distribution of electricity produced from renewable energy sources'. This obligation has been transposed into Irish law as a duty upon the TSO and DSO to, when dispatching generating units, 'give priority to generating units using energy from renewable sources in so far as the secure operation of the electricity system permits'.

The principle of priority dispatch for renewable generators is also reflected in:

- the dispatch obligations imposed upon the TSO in its TSO licence and in the Grid Code;
- rules imposed upon the TSO by the CRU for the dispatch of plant in 'tie-break scenarios'; and
- the ability of renewable generators to register as 'price taking generation' in the SEM (thereby providing preferential access to the SEM market schedule).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In furtherance of its obligation, pursuant to the EU Renewable Energy Directive (2009/28/EC), for 16 per cent of the country's total energy consumption to come from renewable energy sources by 2020, the Irish government has set a 40 per cent target for renewable electricity. The Sustainable Energy Authority of Ireland has reported that in 2016, 27.2 per cent of Ireland's gross electricity consumption was generated from renewable sources, indicating that in order for Ireland's 2020 renewable electricity target to be met, the market penetration of renewable electricity generators needs to increase significantly from its current level.

The Irish government is also seeking to reduce the amount of power that is consumed, through the implementation of the National Energy Efficiency Action Plan that Ireland maintains pursuant to the EU Energy Efficiency Directive (2012/27/EU). The 2020 energy efficiency target equates to a 20 per cent reduction in final overall energy demand based on the average energy demand during the period 2001 to 2005, with the public sector expected to play an exemplar role by working towards a 33 per cent reduction target – although it should be noted that these targets apply to overall energy demand, and not just the demand for electricity.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Irish electricity regulatory framework does not currently recognise electricity storage as a licensable activity in its own right. Absent such recognition, the business of an entity engaged in the storage of electricity falls to be regulated on the basis of the separate licensable activities that such business entails: in particular, the supply and generation of electricity. Specific treatment of batteries and pumped storage units was, however, introduced into the wholesale electricity market rules as part of I-SEM go-live.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

It is noted in the 2015 energy White Paper that nuclear power generation in Ireland is currently prohibited by legislation. This may be a reference to Section 18(6) of the 1999 Act, which prohibits the Minister from providing for nuclear fission, in any order by which the Minister directs the CRU as to how it determines whether or not to grant an authorisation to construct a generation station. An order of this type was made in 1999, but does not refer explicitly to nuclear fission. A more effective prohibition is set out in section 37K of the Planning and Development Act 2000, which provides that nothing in that Act shall be construed as enabling the authorisation of development that consists of an installation for the generation of electricity by nuclear fission.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Pursuant to the European Communities (Internal Market in Electricity) Regulations 2000 to 2009 (the 2000 Regulations), functions and duties in relation to the Irish electricity transmission system are borne by each of EirGrid plc, as TSO, and ESB, as owner (transmission asset owner, or TAO). Each bears a degree of responsibility for the construction and operation of the transmission system. Accordingly, the electricity regulatory authorisations required to construct and operate the Irish electricity transmission network are both: the licence to discharge the functions of the transmission system operator, issued by the CRU pursuant to section 14(1)(e) of the 1999 Act; and the licence to discharge the functions of the transmission system owner, issued by the CRU pursuant to section 14(1)(f) of the 1999 Act.

The 1999 Act provides that a licence to own the transmission system may be issued only to ESB, and that a licence to operate the transmission system may be issued only to EirGrid plc. However, under limited circumstances the CRU may also permit another person to construct a 'direct line'.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Section 34 of the 1999 Act imposes upon the TSO a duty to offer to enter into an agreement for connection to or use of the Irish electricity transmission system, where an application for such connection or use is made by any person. However, in considering such an application or entering into such an agreement, the TSO is obliged to comply with directions given by the CRU. The CRU has made extensive use of its powers to issue such directions, with the result that connection policy is one of the most extensively regulated areas of the Irish electricity sector.

As a starting point, section 34 provides that a connecting party should be the holder of an electricity licence or authorisation issued pursuant to the 1999 Act, or should be an 'eligible customer'. However, the requirements that must be met in order to apply for, obtain and maintain access to the electricity transmission system are set out across a number of sources, including the Grid Code, CRU decision papers, electricity licences and the forms of connection and use of system agreement that have been approved by the CRU.

The TSO is required to prepare and maintain a Grid Code, governing the technical aspects relating to connection to and operation of the Irish electricity transmission system, and with which each connected party is obliged to comply. In order to facilitate the integrated operation of the SEM, certain sections of the Grid Code – relating primarily to scheduling and dispatch – are governed jointly by the TSO and SONI Limited, the operator of the Northern Irish transmission system.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Pursuant to the 1999 Act, the Minister and the CRU are required, when carrying out their duties, to have regard to the need to secure that 'all reasonable demands by final customers of electricity for electricity are satisfied'. The TSO is obliged, both by legislation and by the terms of its TSO licence, to develop, if necessary, the transmission system with a view to ensuring that all reasonable demands for electricity are met, and to plan the long-term ability of the transmission system to meet reasonable demands for the transmission of electricity. The TAO receives a regulated rate of return on transmission assets, which suggests that expansion is not likely to occur without the approval of the CRU.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Under the 1999 Act the TSO is required to prepare, from time to time, a statement of the basis upon which charges for the provision of transmission services (namely, connection to and use of the electricity transmission system) are imposed, which statement must then be approved by the CRU. The CRU may also give directions to the TSO in relation to the charging basis that must be adopted.

A charge for connection to or use of the transmission system is required to be calculated so as to enable the TSO to recover an 'appropriate proportion' of the costs directly or indirectly incurred in carrying out any necessary works, and a 'reasonable rate of return' on the capital represented by such costs. The CRU determines what constitutes such an 'appropriate proportion' and a 'reasonable rate of return'.

Under the CRU's current approach to charging policy, the CRU conducts a price review that sets the transmission revenue that can be collected from connected customers during each successive five-year period. The current price review period relates to the calendar years 2016–2020 (inclusive). Within each price review period, tariffs are set annually by the CRU on a basis that includes adjusting for over- or under-recovery of transmission revenues in previous tariff periods. In practice, and in recognition that approved transmission revenues will be shared between the parties, both the TSO and the TAO participate in the regulatory price review process.

As mentioned above, in offering to enter into an agreement for connection to or use of the Irish electricity transmission system, the TSO is obliged to comply with directions given by the CRU. The CRU has used this power to approve the forms of agreement for connection to or use of the transmission system that are required to be offered by the TSO to new and existing customers. The TSO is not permitted to discriminate unfairly between persons or classes of persons when providing for use of the transmission system or where offering terms for the carrying out of works for the purpose of connection to the transmission system.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

These responsibilities are shared between the TSO, the TAO and the CRU. The TSO is obliged, both by legislation and by the terms of its TSO licence, to operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical and efficient electricity transmission system. The TAO is, in turn, obliged to maintain the transmission system and to provide to the TSO such information as the TSO requires in order to ensure the secure operation of the transmission system. The discharge of these responsibilities, among other things, is governed by the Infrastructure Agreement in place between EirGrid plc and ESB.

The CRU is obliged by law to monitor security of supply of electricity, which includes the monitoring of the quality and level of maintenance of the transmission networks and taking such measures as it considers necessary to protect security of supply. The CRU has a general power to monitor and enforce the compliance by licensed parties with the terms of their respective licences, which includes the supervision of the performance of the TSO and TAO obligations referred to above.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Functions and duties in relation to the Irish electricity distribution system are borne by each of ESB Networks DAC, as DSO, and ESB, as DAO. Each bears a degree of responsibility for the construction and operation of the distribution system. Accordingly, the electricity regulatory authorisations required to construct and operate the Irish electricity distribution network are both: the licence to discharge the functions of the distribution system operator, issued by the CRU pursuant to section 14(1)(g) of the 1999 Act; and the licence to discharge the functions of the distribution system owner, issued by the CRU pursuant to section 14(1)(k) of the 1999 Act.

The 1999 Act provides that a licence to own the distribution system may be issued only to ESB, and that a licence to operate the distribution system may be issued only to ESB or a subsidiary of ESB. However, under limited circumstances the CRU may also permit another person to construct a 'direct line'.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The provisions of the 1999 Act that impose duties upon the TSO in relation to connection to the electricity transmission system (and which we discuss in our answer to question 10) apply equally to the DSO in relation to connection to the electricity distribution system. Accordingly, see question 10. ESB Networks DAC maintains a separate Distribution Code governing the technical aspects relating to connection to and operation of the Irish electricity distribution system.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

As noted above, pursuant to the 1999 Act the Minister and the CRU are required, when carrying out their duties, to have regard to the need to secure that 'all reasonable demands by final customers of electricity for electricity are satisfied'. The DSO is obliged, both by legislation and by the terms of its DSO licence, to develop, as necessary, the distribution system with a view to ensuring that all reasonable demands for electricity are met. The DAO receives a regulated rate of return on distribution assets, which suggests that expansion is not likely to occur without the approval of the CRU.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The provisions of the 1999 Act that impose duties upon the TSO in relation to the rates and terms for the provision of transmission services (and which we discuss in our answer to question 12) apply equally to the DSO in relation to the rates and terms for the provision of distribution services. Accordingly, see question 12.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The electricity regulatory authorisation required to sell power to customers, whether commercial or domestic, is a licence to supply electricity to eligible customers, issued by the CRU pursuant to section 14(1)(b) of the 1999 Act. An 'eligible customer' is a consumer of electricity whose consumption at any single premises in any 12-month period is calculated to be, or estimated to be likely to be, greater than 0.1kWh.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The CRU does not currently limit or direct the retail prices that may be charged by Irish electricity suppliers.

However, the CRU has a general power to monitor and enforce the compliance by each licensed electricity supplier with the terms of its supply licence. Each supplier serving domestic customers is required to comply with a number of Codes of Practice published by the CRU, including in relation to billing, disconnection, marketing, complaints handling, prepayment meters and vulnerable customers.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Following I-SEM go-live, the prices payable for sales of wholesale electricity in the SEM are established by the interaction of bidding and regulated processes in three separate temporal markets: the day-ahead market administered by 'SEMOpx' (a contractual joint venture between EirGrid plc and SONI Limited); the intraday market, also administered by SEMOpx; and the balancing market, which is administered by the 'sem-o' contractual joint venture between EirGrid plc and SONI Limited under which the SEM has been operated since its inception.

Participation by generators and off-takers in the day-ahead and intraday markets is voluntary, while market participants are 'balance responsible' and their participation in the balancing market is therefore compulsory. At I-SEM go-live, SEMOpx was the only 'nominated electricity market operator' (as defined in EU legislation) operating day-ahead and intraday electricity markets for Ireland and Northern Ireland although this role is, under law, open to competition.

In order to mitigate perceived market power, certain generators are also obliged to issue a suite of contracts for differences, known as 'directed contracts'. The terms of these contracts, including the strike prices against the day-ahead market price, are set by the CRU and the NIAUR. Entry into directed contracts is open to electricity suppliers.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Each electricity supplier that supplies electricity to domestic or small business customers bears an obligation, set out in its supply licence, to offer to enter into a supply contract upon receiving any reasonable request from a potential customer. It is also required, if designated by the CRU, to act as supplier of last resort.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Minister for Communications, Climate Action and Environment has overall policy responsibility for the electricity sector. However, the CRU is responsible for day-to-day regulation of the sector. The CRU is required to discharge its SEM-related functions through a committee known as the SEM Committee, made up of three individuals appointed by the CRU, three individuals appointed by the NIAUR, an independent member and a deputy independent member.

23 Scope of authority

What is the scope of each regulator's authority?

The many functions and duties of the CRU are set out in section 9 of the 1999 Act and, in relation to electricity, include establishing arrangements for trading in electricity, monitoring retail market opening and customer switching, granting, enforcing and revoking electricity licences and acting as Ireland's national regulatory authority for purposes of Directive 2009/72/EC (concerning common rules for the internal market in electricity).

The CRU has, since 2006, had the power to take all necessary steps to establish and facilitate the operation of the SEM. In June 2016 this power was extended to include the amendments to the SEM that were made by way of the I-SEM project.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The CRU was established under the 1999 Act, stands as a statutory body and is funded by a levy imposed on energy undertakings and other regulated entities. The minister is responsible for the appointment of each member of the CRU, and retains the power to give general policy directions to the CRU (as well as specific directions in relation to certain other, specified matters). The minister is not, however, permitted to give general policy directions to the CRU in relation to SEM matters.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of the CRU on the granting of an electricity supply or generation licence under section 14 or an authorisation to construct a generating station under section 16 of the 1999 Act, and decisions of the CRU on modification of the terms of such licences or authorisations already granted, can be appealed within 28 days of the making of the decision by requesting that the minister establish an appeal panel. Such an appeal panel has all the powers and duties of the CRU that are necessary in order to determine the issue. The first such appeal panel was constituted in 2018, and in July 2018 it found in favour of two licence holders who had challenged the CRU's purported amendment of their licences as part of the I-SEM project, and directed the CRU not to make the proposed modifications.

The 1999 Act also makes provision for application for judicial review, through order 84 of the Rules of the Superior Courts, of certain decisions of the CRU. Such an application must, save in exceptional circumstances, be made within two months of the decision in question, which is a shorter period than the three-month period that is set out in order 84 itself. It is likely that general principles of Irish administrative law, including the right to apply for leave to apply for judicial review within that longer three-month period, apply to decisions of the CRU that are not explicitly listed in this part of the 1999 Act.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Merger control in Ireland is, in general, a matter for the Competition and Consumer Protection Commission (CCPC). The CRU also has a separate power to revoke an electricity licence if a change in control has left the licence controlled by parties not having adequate 'technical, financial or managerial strength'.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The primary legislation governing this area is the Competition Acts 2002 to 2014 (the Competition Act). The Competition Act requires that mergers, takeovers and joint ventures be notified to the CCPC for approval if the aggregate turnover in Ireland of the parties involved is not less than €50 million and at least two of the parties involved have turnover in the state of not less than €3 million.

The CCPC reviews transactions to see whether they would 'substantially lessen competition' in any market within the state. This test is concerned solely with competition issues, ignoring employment, regional development, etc. The notification of a merger to the CCPC is mandatory where the thresholds in the Competition Act are met. Therefore, a proposed transaction cannot be implemented until the CCPC has approved the transaction. Where competition issues arise, such approval may have conditions attached (for example, the divestment of a specific part of the business or providing third parties with access to essential facilities).

There are two possible phases for the CCPC's investigation. During Phase I, the CCPC must make a decision within 30 working days. However, should the parties offer commitments during Phase I to assuage any competition concerns, the time period is extended to 45 working days. These time periods may be extended if the CCPC issues a formal request for information (RFI), which will stop the clock and reset it to day 1 when the parties respond to the RFI. The vast majority of transactions are dealt with in Phase I and the average time for dealing with a Phase I transaction in 2017 was 26 working days.

If the matter moves to Phase II, the CCPC has 120 working days from the original receipt of the notification (or from responses to the Phase I RFI), which may be extended to 135 working days. Time can be suspended during Phase II should the CCPC raise queries within 30 working days of opening Phase II.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CCPC is responsible for the enforcement of competition law in Ireland. The CCPC can undertake an investigation either on its own initiative or on foot of a complaint. Private parties can also take civil actions against other private parties in the Irish courts for breaches of the Competition Act.

Under the 1999 Act, the CRU must have regard to the need to promote competition in the supply of electricity. The CRU must also monitor licensees to ensure that they comply with licence conditions. Under the terms of the standard licence to supply electricity, a dominant supplier is prohibited from predatory pricing or discrimination in supply.

The CCPC has an agreement in place with the CRU to facilitate cooperation in the performance of their respective functions in so far as they relate to issues of competition between undertakings.

As regards the SEM, any abuse of a dominant position in the market, or any arrangement with the object or effect of distorting competition, would, by definition, affect a market in more than one member state (at the very least, Ireland and the UK) and would therefore come within the scope of articles 101 and 102 Treaty on the Functioning of

the European Union (TFEU). Under Regulation 1/2003 the Irish courts (as a national competition authority) have the authority to apply articles 101 and 102 TFEU.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Competition law in Ireland mirrors EU competition law.

Section 4(1) of the Competition Act (implementing article 101 TFEU) prohibits agreements, decisions or concerted practices that have as their object or effect the prevention, restriction or distortion of competition (eg, price fixing, market sharing, limiting production, etc). Similar to the TFEU, Irish law also provides for the 'efficiency defence' where it can be demonstrated that the agreement or arrangement actually contributes to improving the production or distribution of goods or services or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit. The efficiency defence can be applied only on condition that the competition restrictions are indispensable and substantial competition will not be eliminated.

Section 5 of the Competition Act (implementing article 102 TFEU) prohibits the abuse of a dominant position. Generally, a firm is considered to be dominant if it enjoys a position of economic strength that gives it the power to act, to an appreciable extent, independently of its customers or its rivals. Section 5 is not necessarily breached when a firm's vigorous competition takes sales away from less efficient rivals, as this is competition working properly. The examples of abuses provided under the Competition Act are identical to those under article 102 TFEU.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The CCPC, unlike the European Commission, does not have the power to adopt its own binding decisions or to unilaterally impose fines. However, this does not preclude the CCPC from using its extensive powers of investigation, which include the ability to conduct dawn raids or to compel individuals to give evidence under oath.

In Ireland, businesses or individuals that breach competition law may be subject to civil or criminal sanctions. In the case of the most serious types of anticompetitive conduct, criminal fines and prison sentences are as follows:

- a business can be fined up to €5 million or 10 per cent of its annual business turnover, whichever is greater, if convicted on indictment; and
- an individual found guilty of an offence on indictment can be fined up to €5 million or 10 per cent of his or her annual individual turnover, whichever is greater. An individual can also be imprisoned for up to 10 years.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

No, save to the extent that, as set out in Directive 2009/72/EC, the European Commission retains a certifying role in relation to any proposed acquisition of a European transmission network business by a non-EU entity.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The electricity regulatory authorisation required to construct an interconnector is an 'authorisation to construct an interconnector', issued by the CRU pursuant to section 16 of the 1999 Act. The electricity regulatory authorisation required to operate an interconnector is a licence to 'transport electricity across and maintain an interconnector' issued by the CRU pursuant to section 14(1)(i) of the 1999 Act. The CRU's policy on interconnection is evolving – during 2018 it issued consultations on the assessment criteria that it should apply to applications for interconnector authorisations, and on the regulated tariff model (if any) that should apply to the Greenlink project (see question 33).

Update and trends

Following the expiry of the REFIT support schemes, the implementation of the RESS scheme is the regulatory process that will have the most significant influence on the development of the Irish electricity generation sector in the coming years. The scheme's high-level design was published in July 2018, at which point it was clear that significant further design work – as well as state aid approval – was necessary before the scheme could be regarded as ready for its scheduled first deployment in 2019.

Irish electricity generators and their contractual counterparties continue to adapt their commercial activities to the realities of trading in I-SEM, which went live in October 2018. Many have adopted transitional pricing arrangements that are to be reopened following the initial period of trading in the redesigned market. A degree of 'churn' in the market for power purchase agreements and related arrangements is to be expected, as well as inroads by market entrants looking to exploit new trading opportunities and niches in I-SEM.

The exit of the United Kingdom from the EU, which is scheduled to occur on 29 March 2019, remains a pressing issue by reason of its timing and its potential disruptive effect – at least in theory – on assets and activities, such as SEM, that span the UK-EU border. However, at the time of writing, the regulatory consequences of this event for the Irish electricity sector have not been settled.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The Irish electricity transmission system is currently linked with that of Northern Ireland by a twin circuit 275kV AC connection. Since the establishment of the SEM, arrangements for access to this interconnection have been subsumed into the unified dispatch of the all-island transmission networks, meaning that this interconnection capacity is allocated by means of an implicit auction.

EirGrid and SONI are jointly planning a major cross-border electricity transmission development between the existing high-voltage transmission networks of Ireland and Northern Ireland. The proposed interconnector is a 400kV overhead line circuit linking the existing 400kV substation in Woodland, County Meath, Ireland with a planned substation in Turleenan, County Tyrone, Northern Ireland – the 'North-South 400kV Interconnection'. As with the existing twin-circuit connection, it is proposed that the capacity of the new interconnection will be allocated by means of an implicit auction.

EirGrid Interconnector DAC, a member of the EirGrid group, owns a 500MW HVDC interconnector running between Ireland and Wales, known as EWIC. From I-SEM go-live, access to the EWIC has been facilitated through the sale and purchase of Financial Transmission Rights.

Two further high-profile Irish interconnector projects currently under development are: the 700MW Celtic Interconnector, proposed to run between Co. Cork and Brittany, France, currently being developed as a joint venture between EirGrid and Réseau de Transport d'Electricité, the French TSO; and the 500MW Greenlink interconnector, proposed to run between Great Island, Co. Wexford and Pembroke, Wales, currently being developed by Element Power.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The standard electricity supply licence provides that where the licensee is in a dominant position in the market for the supply of electricity, and the licensee also owns a generation business, it is not permitted to

give or receive cross-subsidies between the licensee's electricity supply business and any other business of the licensee or of an affiliate or related undertaking of the licensee. A similar restriction is contained in the standard electricity generation licence.

General principles of competition law, relating to transactions between dominant companies and their affiliates, are also relevant.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

According to the 1999 Act, it is the responsibility of the CRU to enforce the terms and conditions of a supply or generation licence. Ultimately, the CRU has the power to revoke a licence if the licensee fails to comply with a direction, a determination or an order.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

As with many other countries globally, in the past decade Italy has been engaged in political debate over scientific research and economic analysis in light of the dwindling supply of fossil energy sources and the consequent need to use renewable energy sources, such as wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases. The production of energy from cleaner renewable energy sources has received growing support from the public and the communities at large, eager to reduce Italy's reliance on foreign oil, to improve the quality of life in large cities, to reduce air pollution, to encourage scientific research and technological progress, as well as to create business and employment opportunities. This broad public support, together with a favourable incentive policy, has attracted significant investments from 2006 onwards.

The Italian electricity sector is evolving rapidly owing to the effects of profound energy transition, focused on achieving sustainability goals and improving system security. The most significant elements of the new model are the integration and management of renewable energy, energy efficiency, grid digitalisation and storage systems. In 2017 the Italian government approved the National Energy Strategy setting out future policy goals for the electricity sector. The objective is to make the national energy system more competitive, more sustainable, and more secure. Having a more competitive system means aligning Italian energy prices with European ones to the benefit of companies and consumers, opening up new markets to innovative companies, creating new employment opportunities and fostering research and development. Having a more sustainable system means contributing to decarbonisation, in line with the long-term targets of the Paris Agreement on Climate Change, improving energy efficiency, encouraging energy conservation to mitigate environmental and climate change impacts, promoting environmentally conscious lifestyles, from sustainable mobility to minimising energy usage and confirming Italy's environmental leadership role. Having a more secure system means improving the security of energy supply, while ensuring its flexibility and strengthening Italy's energy independence.

Italy has already achieved its 2020 renewable energy targets, with energy from renewable energy sources accounting for 17.5 per cent of total energy consumption in 2015, in comparison with the 17 per cent target to be reached by 2020. The new ambitious target set out by the 2017 National Energy Strategy is a 28 per cent share of renewable energy in total energy consumption by 2030.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Generating energy means transforming the power obtained from primary sources into 'electricity'. This transformation occurs in power plants. The main generation companies in Italy are Enel, Eni, Edison, A2A, Engie, Iren, Tirreno Power, ERG, Axpo, Saras, Sorgenia, and Edipower.

Terna SpA - Rete Elettrica Nazionale (Terna) is the transmission system operator, while Terna Rete Italia owns and manages most of the transmission assets. Terna deals with high-voltage electricity transmission (380kV–220kV–150kV). Electricity is transmitted by transferring the power produced in plants to consumer areas. In order for this to occur, power lines and transformers, elements that make up the transmission system, are necessary. A total of over 72,000km of power lines are owned and managed by Terna.

The last phase of the electricity generation and delivery process is represented by distribution, which is the delivery of medium- and low-voltage electricity to users. The main distribution companies in Italy are e-distribuzione, Unareti, Areti, and Ireti, while the main supply companies selling electricity are Enel, Eni, Acea, A2A, Edison, Iren, Hera, Dolomiti Energia, GdF Suez, Sorgenia, Agsm Verona, Azienda energetica – etschwerke Bolzano, Tremagi, E.ON, Acegas-aps, Sc Holding and Aim Vicenza.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The general principles governing authorisation procedures for the construction and operation of generation facilities are set out under national law, notwithstanding each region may implement regional laws regulating the authorising procedure within the national framework. Generally speaking, the authorising procedures for the construction and operation of generation facilities depend upon the type of source (eg, conventional or renewable), the capacity of the plant, the type of installation (ie, ground-mounted or roof-top mounted), and the area where the project is supposed to be built (eg, an area safeguarded from a landscape perspective).

From an environmental perspective, generation facilities having capacity above certain thresholds are subject to an environmental pre-screening procedure, which is a preliminary, streamlined assessment of the impact a project may have on the environment. When the pre-screening procedure has a negative outcome, the project is required to undergo a full environmental impact assessment procedure. Furthermore, projects that are to be built within certain areas of high landscape and environmental value, owing to the presence of specific flora or fauna, must undergo an additional assessment, the 'environmental incidence assessment', which evaluates the impact the project may have on the flora and the fauna living within that area or zone.

Combustion plants with a thermal capacity of more than 50MW and combustion plants for the production of electricity with a thermal capacity of more than 300MWe, are also required to obtain an integrated environmental authorisation to operate. This authorisation sets out certain threshold limits for emissions of pollutants and noise by the plant.

Since 2004, as a general principle, a single authorisation issued by the competent region (or the province if it is so empowered by the region) is required to construct and operate any renewable energy plant having a capacity higher than a certain threshold (ie, 60kW for wind, 20kW for solar photovoltaic, 100kW for hydroelectric, 200kW for biomass, and 250kW for gas from waste and depuration treatments and biogas). For generation facilities fueled by non-renewable energy sources having a capacity higher than 300MW, the single authorisation is issued by the Ministry for Economic Development.

The single authorisation, when issued, substitutes all the authorisations, licences and permits that would otherwise be required to build and operate the generation facility under applicable laws (except for the environmental assessments described above, if needed). The single authorisation is issued upon the completion of a single administrative procedure, during which all the positions of the interested public authorities are jointly evaluated.

Renewable energy plants with an installed capacity lower than the abovementioned thresholds are exempt from the single authorisation requirement and benefit from a simplified 'deemed consent' procedure (known as the PAS procedure). Regions can increase the thresholds for the simplified authorisation procedure up to 1MW. Certain categories of construction works that have a minor impact on the surrounding environment, can be carried out in a deregulated regime by filing with the competent municipality a notice of the planned start of the works.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The energy produced by renewable energy plants has interconnection and dispatch priority. Moreover, the operator of the national transmission grid (ie, Terna) and the operators of the local distribution grids, have the obligation to connect every plant that makes a connection request to the grids that they operate. A request to be connected to the power grid can be filed well before the construction of the plant is completed, or even started, because no time limit is set as to how long before the start of operations the request can be filed. The request to be connected to the power grid must be filed with either the operator of the local distribution grid, if the capacity requested is below 10,000kW, or Terna, if the capacity requested is equal to or more than 10,000kW.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The Italian government has introduced a number of schemes to support power generation based on renewable energy sources.

To promote and increase the use of renewable energy sources in electricity production and to create demand for electricity from renewable energy sources, the Italian government introduced in 1999 an annual obligation for electricity producers and importers to input a minimum quota of energy produced using renewable energy sources into the national electricity system. An energy operator could discharge its obligation by either producing the entire minimum quantity of energy from renewable sources by itself or by purchasing the whole or part of an equivalent amount, or the related rights (green certificates), from other producers. Green certificates evidence the renewable attributes of the electricity generated. They provided a benefit to the producer in that they could be traded separately from the underlying electricity at a national and international level. From 1 January 2016, green certificates were replaced by a feed-in premium mechanism known as GRIN.

In 2005, an incentive system specifically dedicated to solar photovoltaic plants, known as Conto Energia, was introduced. Conto Energia consisted of the payment of fixed incentive tariffs for 20 years starting from the date of entry into operation of the relevant photovoltaic plant (depending upon the capacity of the plant and the level of integration of the plant). Conto Energia is no longer in place for new photovoltaic plants because the budget was reached in July 2013.

Projects aimed at increasing energy efficiency may be eligible to obtain white certificates (also known as energy efficiency certificates). White certificates are tradable instruments that give proof-of-end-use energy savings. The scheme aims at supporting the production of thermal energy from renewables and high performance cogeneration units as well as small-scale interventions of energy efficiency for private persons and the public administration.

A simplified sale and purchase arrangement is another tool offered by the Gestore dei Servizi Energetici SpA – GSE under which producers are paid a minimum guaranteed price for every kWh. Producers with small-sized plants and a nominal electrical capacity up to 1MW may benefit from this scheme for the first 2 million kWh per year fed into the grid, with the possibility of receiving more if the hourly zonal prices prove to be more advantageous.

Through the net metering service, producers or users may feed into the grid the electricity that they generate on site, but do not consume immediately, and take from the grid part or all of the electricity that they need at a different time. This system applies to renewable energy plants having a capacity up to 200kW commissioned after 31 December 2007 and to high efficiency combined heat and power plants with a capacity up to 200kW. Under this service, the producer gets from the Gestore dei Servizi Energetici SpA – GSE a yearly net metering contribution in Euros. This contribution refunds the producer or user for part of the costs incurred for importing electricity from the grid.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The government policy on decarbonisation may imply an increase of renewables in power generation as well as in heat uses, and the increase of energy efficiency projects.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The National Energy Strategy approved in 2017 has set a target of providing the power system with innovative instruments and infrastructure to:

- guarantee its adequacy and to meet security standards;
- guarantee its flexibility required to accommodate the growing penetration of renewable energy sources (which will also be facilitated by technological advances);
- promote its resilience to extreme weather events and contingencies; and
- to shorten the timescales of and streamline the permitting process and the implementation of projects.

Among other things, the National Energy Strategy proposes to increase the capacity of energy storage systems and to integrate new resources such as storage systems into the market.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

In June 2011, a referendum led to the end of the nuclear programme previously proposed by the Italian government, with the abrogation of all the nuclear provisions already implemented. As a consequence, the quota of the energy mix theoretically assigned to nuclear energy for the year 2020 (24 per cent) will have to be covered by other sources, particularly by renewable energy sources.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

At a national level, the authorisation for the construction of electric lines is issued by either the Ministry for Infrastructures for electric lines with a voltage above 150kV, or by the competent province for electric lines with a voltage up to 150kV.

An application for the authorisation must also be filed with the Ministry for Economic Development and with any other authority responsible for areas crossed by the interconnection facilities (eg, military sites, rivers, forests, mines, telecommunications lines, railways and public ways) for their approval. Only after the approval of all other interested authorities has been obtained can the authorisation be issued.

In urgent cases, the start of construction works can be authorised under a temporary authorisation, conditional upon the applicant providing a guarantee as security for the fulfilment of any obligations that may be set forth by the final authorisation, or the demolition of the works constructed under the temporary authorisation where the definitive

authorisation is denied. Temporary authorisation can be issued only with the prior approval of the Ministry for Economic Development.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The transmission system operator (ie, Terna) must provide non-discriminatory and transparent access to the transmission network. To benefit from energy transmission services, an interested entity has to be connected to the grid and sign a transmission services agreement.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Terna is responsible for planning and developing the national transmission grid. The company approves and carries out development measures on the national transmission grid based on a 10-year plan (the Grid Development Plan), approved each year by the Ministry for Economic Development. Terna also cooperates with the energy regulators of other countries to expand the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

For electricity transmission and dispatching services, Terna is remunerated via a tariff system established by the Italian Regulatory Authority for Electricity, Networks and the Environment (ARERA). Resolutions established by ARERA are the basis for remuneration for electricity transmission (Resolution No. 199/11), and dispatching (Resolution No. 204/11). In total, costs related to Terna's operations account for approximately 3 per cent of the total electricity bill.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The transmission system operator (ie, Terna) is responsible for maintaining the balance between supply and demand of electricity, as well as ensuring the security of supply.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

See question 9. The activity of distribution of electrical energy is carried out by operators who have been granted concessions by the Ministry for Economic Development.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The electricity transmission grid operator (ie, Terna) and electricity distributors must grant equal access to every operator requesting it (provided that it complies with technical requirements), without prejudice to continuity of service and in compliance with technical and economic conditions for access. Grid operators must also provide sufficient information to ensure the efficient and safe functioning of the grid.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The Ministry for Economic Development has recently published a call for tender addressed to the concessionaires of the public service of distribution of electrical energy, operating in the Regions of Basilicata, Calabria, Campania, Puglia and Sicilia, for the public financing for projects for the construction, improved energy efficiency and expansion of distribution networks (eg, smart grid).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

ARERA sets out the tariffs for the distribution of electricity. Distribution costs are covered through distribution fees, which are charged to end users in their bills (except for low voltage domestic users).

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The sale of electricity is not subject to any licence or permit regime. Starting from 2017, enrollment in the register of operators held by the Ministry for Economic Development is mandatory.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

For domestic low voltage users and small enterprises, there was a tariff protection regime where the prices and sale conditions are established by ARERA. In all other cases, electricity prices and sale conditions are freely negotiated between the parties.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Wholesale prices and conditions are freely negotiated between the parties.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

In Italy, consumers that do not choose a supplier remain with a default supplier, the local distribution service operator, which provides electricity according to a 'standard offer'. In this case, the local distribution service operator buys electricity from Acquirente Unico SpA (a company created by Gestore dei Servizi Energetici SpA - GSE) with the task of guaranteeing the availability of electricity to cover the demand of captive customers at wholesale market price. Today the majority (80 per cent) of households and small enterprises are still served on the base of this 'standard offer'. Consumers other than households and small enterprises are obliged to find a supplier, but if they cannot find a suitable offer, electricity is supplied as a last resort by a supplier selected through an open auction.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The regulatory authorities in the electricity sector in Italy are the Ministry for Economic Development, ARERA, Gestore dei Servizi Energetici SpA – GSE, and Gestore dei Mercati Energetici SpA – GME.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry for Economic Development oversees Italy's energy policy and has regulatory powers to implement legislation passed by the Italian Parliament.

ARERA's role and purpose is to protect the interests of users and consumers, to promote competition and to ensure efficient, cost-effective

Update and trends

The 2017 National Energy Strategy approved by the Italian government has established six priority goals to be implemented as follows:

- to achieve the target of a 28 per cent share of renewable energy sources on total energy consumption by 2030;
- to foster low energy consumption initiatives having the best cost benefit ratio, so as to achieve 30 per cent of energy savings by 2030 with respect to their trend in 2030, and give impetus to the Italian energy efficiency industry (eg, construction of energy efficient buildings and installation of energy efficient facilities);
- to speed up the decarbonisation of the energy system, starting from the use of coal in power generation, and to introduce progressively measures spanning the entire energy process, thereby achieving significant environmental and health benefits, and contributing to the attainment of European targets;
- to launch the capacity market in 2018 to guarantee system adequacy, maintaining the necessary gas-fired capacity (with priority to flexible capacity), and integrating new resources into the market (cross-border renewable-energy power-generating units, storage systems, active demand side management), further strengthening interconnections with neighbouring countries, increasing the capacity of storage systems, and implementing grid projects to integrate renewables, and increase the resilience of the system; and
- to decrease primary consumption of oil products by 13.5 million tonnes of oil equivalent by 2030 when compared with 2015 levels; and to double investments in clean-energy research and development, from €222 million in 2013 to €444 million in 2021.

For the renewable energy sector, the 2017 National Energy Strategy proposes long-term power purchase agreements for new big power plants and diversified support schemes for small-scale, power generation and innovative solutions. Long-term power purchase agreements are a hot topic in the Italian electricity sector, as they may ensure stability and an adequate investment time frame and return for fixed capital initiatives.

and profitable nationwide services with satisfactory quality levels. Its mission includes defining and maintaining a reliable and transparent tariff system, reconciling the economic goals of operators with general social objectives, and promoting environmental protection and the efficient use of resources. ARERA also provides an advisory and reporting service, setting forth observations and recommendations to government and to parliament on matters of energy. It plays an active part in creating a standardised system in the European Union of energy regulation and in integrating the national electricity and gas markets into a single European market. As a founding member of the Council of European Energy Regulators, ARERA also takes part in the European Regulators Group for Electricity. ARERA also chairs the Mediterranean Working Group on Electricity and Natural Gas Regulation, a body established to promote the integration of energy markets in the Mediterranean area.

Gestore dei Servizi Energetici SpA – GSE fosters sustainable development by providing economic support for renewable electricity generation and by raising awareness of environmentally efficient energy use. The GSE has gained national and global recognition as a leading player in the implementation of Italian energy policies, owing to its growing commitment to promoting renewable energy sources by participating in international seminars, workshops and organisations. To date, the GSE has played an active role within the European Association of Issuing Bodies, the Observatoire Méditerranéen de l'Energie, and the International Energy Agency.

Gestore dei Mercati Energetici SpA – GME manages the electricity market and the trading of energy efficiency certificates (white certificates, giving evidence of the implementation of energy-saving policies) and emissions allowances. Moreover, GME also manages the forward electricity account trading platform, for registration of forward electricity purchase and sale contracts that have been stipulated off the market.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Ministry for Economic Development has regulatory powers to implement the legislation passed by the Italian Parliament.

ARERA is an independent body that regulates, controls and monitors the electricity and gas sectors and markets in Italy.

Gestore dei Servizi Energetici SpA – GSE is a publicly owned company promoting and supporting the use of renewable energy sources in Italy. The sole shareholder of the GSE is the Ministry of Economy and Finance, which gives guidance on the activities of Gestore dei Servizi Energetici SpA – GSE in consultation with the Ministry for Economic Development.

Gestore dei Mercati Energetici SpA – GME is a company established by Gestore dei Servizi Energetici SpA – GSE for the purpose of organising and economically managing the Italian electricity market, in accordance with the principles of neutrality, transparency, objectivity and competition between producers.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The administrative decisions of regulators may be challenged by any interested third-party (either private or public, including the authority maintaining that its jurisdiction has been violated).

An interested third-party may file a judicial claim before the competent Regional Administrative Court (TAR) within 60 days (or within 30 days for the resolutions issued by ARERA, or any matters relating to generation plants having a capacity higher than 300MW), or alternatively before the President of the Italian Republic, within 120 days.

The term for filing a judicial petition starts from the date the challenged act is published, or, should it be notified or communicated, from the date it is filed or communicated. If the act is not subject to publication or notification or communication, the statutory term starts from the date the claimant becomes aware of the relevant act.

The decisions issued by the TAR are subject to appeal to the Council of State.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Whether the Italian Antitrust Authority (AGCM) or the European Commission is responsible for providing clearance to an envisaged merger depends on the annual turnover of the involved businesses. If, combined, businesses exceed specified thresholds in terms of global and European sales, the proposed merger must be notified to the European Commission. Below the specified thresholds, the AGCM is responsible. Whenever two companies merge or one company purchases another, the AGCM determines whether the new enterprise embodies too much market power. When threats to competition are identified, it may prohibit the merger or impose measures for mitigating their negative impact on competition.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Italian law requires prior notification of all mergers and acquisitions involving undertakings whose aggregate turnover in Italy exceeds €495 million and when the aggregate domestic turnover of each of at least two of the undertakings concerned exceeds €30 million. Thresholds are adjusted every year to take account of increases in the GDP deflator index.

The AGCM has to identify the relevant market and review the market position of all parties to the merger separately and jointly in order to review competition before and after the transaction.

Under the Italian merger control system, there is no obligation to suspend the transaction pending the outcome of an investigation (no standstill obligation). Therefore, the parties are free to implement the transaction at any time after filing, without waiting for AGCM approval. The AGCM must issue its decision within 30 calendar days of receipt of a complete notification.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

ARERA has a duty to report potential competition issues on the energy market to AGCM, which will then assess whether there is any anticompetitive behaviour that constitutes an infringement of Italian competition law.

European Regulation No. 1227/2011 establishes common rules at a European level to prevent abusive practices in the wholesale markets for electricity and natural gas. It imposes the prohibition of market manipulation, attempted market manipulation as well as insider trading and assigns specific market monitoring functions to the national regulatory authorities. In this context, Gestore dei Mercati Energetici SpA – GME supports ARERA in conducting investigations relating to cases of suspected violation of the prohibitions of insider trading and market manipulation.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Italian law prohibits anticompetitive agreements and abuses of a dominant position. The prohibitions mirror the prohibitions set out in article 101 and article 102 of the Treaty on the Functioning of the European Union (TFEU).

Broadly speaking, when an agreement or practice 'may affect trade between member states', a national court or competition authority is obliged to apply European competition law as well as national competition law and, for example, cannot prohibit, under national competition law, an agreement that does not infringe article 101 of TFEU; see also article 3 of Regulation 1/2003. An impact on trade between member states also triggers the obligation of a national competition authority to notify the case to the European Commission and exchange of information under articles 101 and 102 of TFEU.

The European Commission's 'Effect on Trade Notice' specifies the factors to be taken into account when considering whether an agreement or an abusive practice can be considered to have an effect on trade between member states. The basic test, derived from the case law of the European Court of Justice, is whether the agreement or practice leads to an alteration of the pattern of trade. Factors to be considered include the characteristics of the product in question (whether products are easily traded across borders or are important for enterprises wishing to enter or expand their activities in another member state) and the characteristics of the practice or agreement in question (whether this restricts imports or exports, for example). Special attention needs to be paid to whether the agreement is capable of partitioning the single European market. Agreements that interfere with the economic interpenetration that the TFEU is designed to achieve would affect trade between member states.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The relevant authority for public enforcement is AGCM and, depending on the case, also the European Commission, DG COMP.

Investigation powers held by AGCM, like those held by DG COMP, include the power to request information, to carry out inspections, surveys and economic analyses and to consult experts. In the case of justified urgency or by acting on the basis of its own initiative, AGCM (like DG COMP) may order interim measures on the basis of a prima facie infringement. For justified urgency to exist, *fumus boni iuris* (ie, the possibility that the infringement may be proved with a certain degree of probability) and *periculum in mora* (ie, a serious and irreparable damage for competition) have to be demonstrated.

If an agreement is found to breach the competition rules, the main consequences are:

- the parties to the agreement may be subject to a fine of up to 10 per cent of their turnover;
- the agreement may be declared null and void; and
- third parties may be able to claim for damages.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no restrictions on foreign ownership of electricity companies or assets.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Refer to question 9.

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33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There is no national regulation on cross-border electricity supply.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Rules on unbundling of network operators (legal, accounting, information, functional and even ownership unbundling) have been issued. Unbundling obligations on energy companies are regulated by Legislative Decree No. 93/2011.

The ownership unbundling model requires a full separation of electricity transport activities (including both the ownership and management of electricity transportation infrastructures) from the production and sale of electricity. In particular, the following conditions have to be met:

- a person or a legal entity, directly or indirectly exercising control or any voting or appointment right (ie, rights to appoint members of the supervisory board, the management board or other bodies legally representing the undertaking) over an undertaking that is active in the production or supply of electricity, cannot directly or indirectly exercise control or any voting or appointment right over a transmission system operator or transport infrastructure; or
- a person or a legal entity, directly or indirectly exercising control or any appointment or voting right over a transmission system operator or transport infrastructure, cannot directly or indirectly exercise control or any voting or appointment right over an undertaking that is active in the generation or supply of electricity.

Undertakings active in the generation or supply of electricity can keep a merely financial, direct or indirect, minority shareholding in a transmission system operator or transport infrastructure. In other words, such a shareholding can only provide financial rights (ie, the right to receive dividends) but cannot confer any right to take part in the decision-making process of, or exercise any influence on, the transmission system operator or transport infrastructure.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ARERA and AGCM are responsible for the enforcement of the abovementioned restrictions. In the event of a violation of a provision of law, the regulatory authorities may enforce their orders through fines.

Japan

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The electricity sector in Japan is governed by the Electricity Business Act (EBA).

Prior to 1995, the EBA allowed 10 general electricity utilities to basically dominate all of the generation, transmission, distribution and sale of power. Although the industry, especially generation and sale of power to high-voltage consumers, had been partially liberalised since 1995, it was not until the Fukushima nuclear disaster in March 2011 that the Japanese government began to seriously reform the electricity market.

The regulations on the electricity business by the EBA are being significantly amended by three steps: the first in April 2015, the second in April 2016 and the third in April 2020.

The Organisation for Cross-regional Coordination of Transmission Operators (OCCTO) was established by the first-step amendment. This organisation is expected to facilitate nationwide efficient grid establishment and operations.

The second-step amendment liberalised the sale of power to low-voltage consumers (those with contracts for electricity consumption of less than 50kW; eg, ordinary households), which has been dominated by general electricity utilities, and all electricity retail companies registered with the Minister of Economy, Trade and Industry (ETI) (Minister of ETI) are generally able to provide electricity to any consumers at discretionary terms and conditions. Regulations on the wholesale of electricity were also fully abolished.

By the third-step amendment, a company that engages in general transmission business (which provides wheeling services through its grids) will no longer be permitted to engage in retail or power generation, and the general transmission utility will have to be a separate legal entity from the generation or retail business company.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

With effect from 1 April 2016, the regulations on generation, transmission, distribution and sale of power were substantially amended.

Until the effective date, 10 general electricity utilities had dominated transmission, distribution and sale of power to low-voltage consumers (those with contracts for electricity consumption of less than 50kW; eg, ordinary households) in each supply area, and wholesale supply conditions to general electricity utilities had been regulated by the EBA. On the effective date, a licence system was introduced, under which:

- filing with the Minister of ETI is generally required for power generation (of which output exceeds certain thresholds);
- approval from the Minister of ETI is generally required for transmission and distribution; and
- registration with the Minister of ETI is required for electricity retail business.

The concept of 'general electricity utility' disappeared, and former general electricity utilities became companies which own several licences. In 2020, these companies will be required to split transmission and distribution business from power generation and retail business.

Generation and wholesale

Until the effective date, there had been three categories:

- wholesale electricity utility: an entity that supplies electricity to a general electricity utility, and that has an electricity generation capacity of more than 2 million kW, and are required to obtain a licence from the Minister of ETI;
- wholesale supplier; a supplier of electricity to a general electricity utility of more than 100,000kW for five years or more, or more than 1,000kW for 10 years or more, and conditions of its supply of electricity to a general electricity utility must comply with the EBA; and
- other power producers that are not regulated by the EBA.

With effect from 1 April 2016, all power producers are required to make certain filings with the Minister of ETI before engaging in the power generation business, unless such power producer satisfies certain requirements (such as total power producing ability of facilities owned by a producer being lower than 10,000kW), which are provided by rules of the Ministry of ETI. In April 2016, wholesale regulation was abolished, and wholesale entities are generally able to supply electricity at terms and conditions determined at their discretion, while the guideline provided by the Ministry of ETI provides that the former general electricity utilities should hold a bidding process when they are to construct or replace certain thermal power plants by themselves, based on the fact that they are obligated to supply electricity to low-voltage consumers at regulated prices at least until 2020 (see question 19).

Since July 2012, suppliers of electricity generated from certain renewable energy sources are entitled to sell the electricity to an electricity utility at a fixed price for a fixed period under feed-in tariff (FIT) regulations (see question 5).

Transmission and distribution

For operating the business of providing wheeling services through its own transmission and distribution lines dominantly throughout any of 10 service areas, it is necessary for a utility to obtain approval of the Minister of ETI, and only 10 general transmission utilities (the former general electricity utilities before April 2016) are allowed to engage in that business in each service area. Other companies that operate transmission lines for the connection between power plants and general transmission utilities' lines are required to obtain approval of the Minister of ETI, and those that operate transmission lines to supply electricity to customers in a specific area must make a filing with the Minister of ETI.

Sale of power

Until March 2016, the retail market for low-voltage consumers had not been liberalised, and 10 local general electricity utilities had been allowed to dominate the market in their respective service areas.

In April 2016, the retail market was fully liberalised, and all entities that are registered as electricity retailers are permitted to provide electricity to low-voltage consumers as well. As of August 2018, over 500 entities are registered as electricity retailers.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Starting on 1 April 2016, all power producers are required to make certain filings with the Minister of ETI before engaging in the power generation business, unless such power producer satisfies certain requirements (such as total power producing ability of facilities owned by a producer being lower than 10,000kW), which are provided by rules of the Ministry of ETI.

For the construction of a power plant, prior filing of the construction plan with the Minister of ETI is generally required, unless the output of such power plant is below certain thresholds. With respect to the construction and operation of nuclear plants, the EBA requires approval of the construction plan before construction and the inspection of construction before operation by the Nuclear Regulation Authority and the Minister of ETI. In addition, installation of a nuclear power reactor requires the approval of the Nuclear Regulation Authority.

In addition, construction of a thermal power plant, a hydropower plant, a wind power plant or a geothermal plant (whose generating power exceeds certain thresholds) or a nuclear plant requires prior environmental impact assessments.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

A general transmission utility (a general electricity utility until March 2016) must allow connection of generation to the grid and provide a wheeling service, unless there are justifiable grounds to refuse it. Examples of justifiable grounds include the non-payment of service fees by the applicant and the inability of the general transmission utility to provide the service without new construction of transmission facilities that impose a heavy burden on the business operation of the general transmission utility.

A general transmission utility also must allow power producers to connect with its transmission facilities, unless there are justifiable grounds for refusal such as there being the risk of causing electrical or magnetic disorder on the transmission lines. Power producers are generally required to incur costs for constructing or strengthening the lines to avoid such disorder.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In July 2012, a feed-in tariff (FIT) for electricity generated from certain renewable energy sources (renewable energy electricity) was introduced. Under FIT, transmission utilities must purchase renewable energy electricity from the producer (which obtained certification on the business plan from the Ministry of ETI) at a fixed price for a fixed period. Solar photovoltaic (PV), wind, small and medium-sized hydro, geothermal and biomass are the renewable energy sources eligible for FIT.

The purchase prices and periods differ depending on the type of renewable energy and the scale of the plant and are decided by public notice issued by the Minister of ETI, who takes into consideration the opinion of the Calculation Committee of Purchase Price. The purchase prices and periods are renewed every year, and the set price and period applies to a project as of the date on which the certification on the business plan is issued. From April 2018 to March 2019, the price is between ¥12 and ¥55 (excluding sales tax) and the period is between 10 and 20 years depending on the type of renewable energy and the scale of the generating power.

As most projects since the introduction of FIT in 2012 have been solar PV projects, by an amendment of FIT which became effective in April 2017 a public bidding system for mega-solar projects was introduced to control the entire volume of electricity output from such solar projects. The public bidding system became applicable to certain types of biomass projects in April 2018.

As from April 2018, commercial operation commencement deadlines of between three and seven years, depending on the type of renewable energy sources, have become applicable to all types of renewable energy electricity generating facilities. Delays of commercial operation dates result in the shortening of applicable purchase periods under FIT.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

FIT, which was introduced in July 2012, has facilitated and will facilitate a substantial number of new companies to enter the electricity generation market and is expected to increase the amount of electricity produced by solar PV, wind, small and medium-sized hydro, geothermal and biomass sources. From April 2012 to March 2018, total capacity expanded by approximately 39.1 million kW from new renewable power plants (approximately 36.7 million kW of such additional capacity comes from solar power plants).

The costs of FIT will be ultimately borne by electricity consumers as a surcharge, but is arranged so that the costs are spread equally throughout Japan by the Surcharge Adjustment Organisation.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There are subsidy programmes to support the introduction of electricity storage batteries, some of which are for households and others for business enterprises, provided by some local governments. The provider, scope and amount of subsidy programmes change year to year.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The Japanese government continued to position nuclear power as an important base-load electricity in the Fundamental Energy Plan promulgated in July 2018, and tries to develop an environment that is supportive to electricity utilities restarting existing nuclear plants (all of which stopped operations after the Fukushima accident, and some pressurised water reactor type plants have restarted operations as at 1 September 2018) once the utilities obtain the approval of the Nuclear Regulation Authority. The Minister of ETI plans to develop a favourable environment for nuclear power plants. However, for political reasons after the Fukushima accident, it is difficult to construct new nuclear plants.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

An entity that intends to construct transmission facilities for high voltages (170,000 volts or more) must file its plan of construction with the Minister of ETI.

An entity that engages in construction and operation of transmission networks to supply electricity for consumers must obtain a licence as a general transmission business. Ten general transmission utilities (former transmission departments of general electricity utilities) dominantly own the licences and transmission lines in each of their service areas. A transmission utility which provides wheeling services for general transmission utilities (J-Power and entities which operate transmission lines through which remote renewable power plants access general transmission utilities' lines) is also required to obtain a licence from the Minister of ETI. Other entities that provide electricity to their customers by their own transmission and distribution lines are required to make certain filings with the Minister of ETI.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

See question 4.

All electricity retail companies registered with the Minister of ETI are eligible to obtain transmission services (ie, wheeling services) from a general transmission utility, in accordance with the tariff on which the general transmission utility has obtained approval from the Minister of ETI, unless there are justifiable grounds for refusal.

All power producers are also eligible to connect with and obtain transmission services from a general transmission utility's facilities, unless there are justifiable grounds for refusal such as there being the risk of causing electrical or magnetic disorder on the transmission lines.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The cost-plus-margin wheeling service fee under the EBA, by which the costs for the expansion of the transmission grid are finally borne by consumers through such wheeling service fees paid by electricity retailers, enables general transmission utilities to expand the transmission grid. In addition, bondholders of a corporation acting as a general transmission utility have priority over other creditors in the right to receive payments from claims on the corporation's property, which enables general transmission utilities to obtain the financing necessary for expanding power generation and transmission facilities at lower interest rates on corporate bonds. From 2025, it will be no longer be possible to issue bonds with such preferential treatment for bondholders.

In April 2015, the OCCTO was established and it prepares development plans for nationwide transmission lines and strengthens the capacity to transmit electricity beyond each of the service areas of the 10 general transmission utilities.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

A general transmission utility must formulate a wheeling service tariff that sets rates and other supply conditions for the wheeling service and obtain approval on the tariff from the Minister of ETI.

The tariff must satisfy certain requirements including the following:

- the tariff will not harm the interests of recipients of electricity supply;
- the recipients of electricity supply under the wheeling service tariff will not experience any difficulty in receiving the wheeling service;
- the rates shall be calculated based on cost plus appropriate profit in accordance with the rule set by the Ministry of ETI, and the rates are clearly set as fixed rates or fixed amounts; and
- nobody will be treated in an unfair and discriminatory manner.

If the Minister of ETI finds that the wheeling service tariff fails to satisfy the requirements above, they may order the general transmission utility to revise the wheeling service tariff.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

In Japan, general transmission utilities own and operate transmission facilities, and they themselves are responsible for assuring the reliability of the transmission grid. The OCCTO plans and monitors a nationwide transmission network beyond each regional transmission area owned and operated by a general transmission utility.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

An entity that intends to construct distribution facilities for 50,000 volts or more must file its construction plan for the distribution facilities with the Minister of ETI.

Any entities that supply electricity to their customers by their own distribution lines (other than general transmission utilities (ie, transmission departments of former general electricity utilities) and the transmission utility (ie, the transmission department of the former wholesale electricity utilities) that have licence from the Minister of ETI) are required to make certain filings with the Minister of ETI.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

See question 10.

Any electricity retail companies that are registered at the Minister of ETI have access to the distribution grid. They are required to become a member of the OCCTO beforehand.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The general transmission utilities are obligated to ensure electricity supply to all consumers in their service areas. In order to perform this obligation, general transmission utilities expand the distribution network as long as it is necessary to supply electricity to consumers. The wheeling service fee is determined based on the cost-plus-margin concept, and the costs for the expansion are finally borne by consumers through the payment of a wheeling fee by electricity retailers.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

See question 12.

A general transmission utility must determine a wheeling service tariff that sets rates and other supply conditions for the wheeling service (including distribution services) and must obtain approval on the tariff from the Minister of ETI.

The tariff must satisfy certain requirements including the following:

- the tariff will not harm the interests of recipients of electricity supply;
- the recipients of electricity supply under the wheeling service tariff will not experience any difficulty in receiving the wheeling service;
- the rates shall be calculated based on cost plus appropriate profit in accordance with the rule set by the Ministry of ETI, and the rates are clearly set as fixed rates or fixed amounts; and
- nobody will be treated in an unfair and discriminatory manner.

If the Minister of ETI finds that the wheeling service tariff fails to satisfy the requirements above, he or she may order the general transmission utility to revise the wheeling service tariff.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

See question 2.

In April 2016 the retail business was fully liberalised, and all entities are allowed to be engage in the retail electricity business including supplying electricity to low-voltage consumers, by registering as electricity retailers; to obtain the registration, an entity must prove its capacity to provide sufficient electricity to meet the demand of its customers.

An entity without registration as an electricity retailer is allowed to supply electricity after obtaining approval on 'specified supply' from the Minister of ETI to a recipient with which it is closely associated (such as a subsidiary).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. Even after full liberalisation of the retail market in April 2016, regarding electricity supply to low-voltage consumers (consumers with contracts for electricity consumption of less than 50kW), electricity retail companies (which were former general electricity utilities) must provide a power sales tariff and obtain approval for it from the Minister of ETI, and must supply electricity to low-voltage consumers in accordance with the tariff as long as such consumers desire. This treatment will continue until 2020 or later when the Ministry of ETI decides on an area-by-area basis (area means a service area of each general transmission utility) that sufficient competition exists in a certain supply area.

From April 2016, all retail companies are legally required to explain retail prices and other conditions in writing to their customers before entering into supply agreements.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Both wholesale electricity utilities and wholesale suppliers have had to provide rates and other conditions of their wholesale supply and file them with the Minister of ETI. The price must be based on costs, except when the wholesale supply is provided under the conditions set by a successful bidder in a bidding process implemented by a general electricity utility. After the wholesale regulation was abolished in April 2016, all power generators are generally able to sell electricity at their discretionary conditions, even when they engage in electricity supply to the former general electricity utilities. On the other hand, to the extent that there is still a regulation requiring the former general electricity utilities to provide electricity at regulated prices to low-voltage consumers who desire it, these utilities are required to hold a bidding process when they are to construct or replace certain thermal power plants by themselves.

The Ministry of ETI would like to increase the volume of electricity traded on the electricity wholesale exchange (JEPX), so that power generators and electricity retailers can sell, purchase or both, electricity with more flexibility and can hedge their risks through market trading, including derivatives. Prohibitions against insider trading and manipulation in the electricity wholesale market and relevant rules were introduced in April 2016.

The rates and terms of supply of renewable energy electricity are provided, depending on the kind of energy and the scale of the facility, by public notice issued by the Minister of ETI, taking into consideration the opinion of the Calculation Committee of Purchase Price. The Minister of ETI considers costs that are ordinarily necessary for supply and appropriate profits when they decide the price and the time period. See question 5.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Ten general transmission utilities (or, at least until 2020, for supply to low-voltage consumers, retail companies which were former general electricity utilities) are responsible for meeting certain public service obligations (to supply electricity at regulated conditions when certain end users cannot receive such service from any retail companies).

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Ministry of ETI (including the Agency for Natural Resources and Energy, an affiliated agency of the Ministry of ETI, and the Advisory Committee for Natural Resources and Energy, a part of the Agency for Natural Resources and Energy) determines regulatory policy with respect to the electricity sector.

Since September 2015, the Electricity and Gas Market Surveillance Commission monitors and supervises whether electricity companies comply with the EBA.

The Nuclear Regulation Authority, which is an affiliated agency of the Ministry of the Environment, has the authority to supervise nuclear power plants.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry of ETI has the authority to:

- issue licences to electricity utilities;
- order general transmission utilities to improve their operations;
- require an electricity utility to supply electricity to a general electricity utility, specified electricity utility or specified-scale electricity utility in the event of a disaster or other emergency;
- order a general transmission utility to provide a wheeling service;
- determine the purchase price and the contract period for renewable energy electricity; and
- warn and order an electricity utility to enter into a purchase agreement or an interconnection agreement with a renewable energy electricity producer.

The Electricity and Gas Market Surveillance Commission has the authority to:

- issue a warning against electricity companies to comply with the EBA; and
- recommend that the Minister of ETI should issue orders against electricity companies.

The Nuclear Regulation Authority has the authority to:

- approve the installation of a nuclear power reactor; and
- inspect nuclear plants periodically.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Ministry of ETI is one of the ministries of the Japanese government. Staff members of the Ministry of ETI are public officials who are not allowed to have another job while serving in the ministry in order to maintain independence from the regulated business.

The Electricity and Gas Market Surveillance Commission was established in September 2015. Its role is to supervise and monitor whether electricity companies comply with the EBA. The commission is independent from the Agency for Natural Resources and Energy.

The Nuclear Regulation Authority was established in 2012 after the Fukushima accident as an affiliated agency of the Ministry of the Environment. To achieve the nuclear regulatory authority's independence from the owners and operators of nuclear plants, staff members of the Nuclear Regulatory Agency, the administrative agency of the authority, are discouraged from moving to other governmental departments that may promote nuclear plants and also from being hired by owners or operators of nuclear plants even after retirement from the agency.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

All decisions and orders of the Minister of ETI can be challenged by an administrative appeal at the Ministry of ETI or by a lawsuit at a judicial court. Valid grounds for a challenge include the claim that the content or the procedures of a certain decision or order violates the EBA or other laws.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Mergers and demergers involving a corporation acting as a general transmission utility that result in the takeover of an entire transmission business are not effective unless approved by the Minister of ETI. In addition, an assignment and acceptance of the entirety of a transmission business is not effective unless approved by the Minister of ETI. Transfers of shares of an electricity utility and acquisitions of a part of a utility's assets are not subject to the approval of the Minister of ETI. Power generators and electricity retailers must make a filing without delay when they engage in mergers, demergers or business transfers which result in the transfer of the entire power generating business or electricity retail business.

For mergers, stock acquisitions and business acquisitions that meet certain thresholds, the parties involved must file a pre-merger notification or a pre-acquisition notification with the Fair Trade Commission, and the transaction cannot be completed until 30 days have passed from the date that the commission accepted the notification. If the commission believes that the transaction will substantially restrain competition in a particular market, it can order the entity concerned to dispose of all or a part of its stock, to transfer a part of its business, or to take any other measure necessary to remedy the situation.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

When the Minister of ETI examines the application for a merger or acquisition of general transmission utilities, he or she considers the same items considered when granting a licence to a new applicant, such as whether the successor has sufficient financial resources and the technical capability to operate the electricity business properly. The general consideration period for the approval is eight weeks after the application is received, although it is expected to consult with the Ministry of ETI beforehand.

On the other hand, the Fair Trade Commission considers whether the transaction will affect competition in the electricity market. The commission is generally expected to decide whether it approves the transaction within 30 days after it receives the filing. If the commission cannot decide within that period, it may extend the consideration period to the final date of 120 days that has passed since it received the filing and the final date of 90 days that has passed since it received any additional reports the commission ordered the applying party to submit.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The Minister of ETI has the authority to order a general transmission utility to provide wheeling services to electricity retail companies. If a general transmission utility takes advantage of its dominant position in the transmission and distribution market and refuses to provide wheeling services to an electricity retail company outside the utility's group, the minister can order the general transmission utility to provide the wheeling service.

The Fair Trade Commission has the power to prevent anticompetitive or manipulative practices in the electricity sector as well. The commission can issue a cease-and-desist order or an order for payment of a surcharge, if it decides that an electricity company is engaging in anti-competitive practices that violate provisions of the Anti-Monopoly Act.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The Minister of ETI uses the following standards:

- when deciding whether to approve the tariff of a general transmission utility, the minister considers whether:
- the rates reflect fair costs incurred as a result of efficient management and fair profits;
- the rates are clearly set as fixed rates or fixed amounts by type of supply; and
- certain persons are not treated in an unfair and discriminatory manner; and
- when deciding whether to order a general transmission utility to provide wheeling services, the minister considers whether there are justifiable grounds for refusing the service, such as non-payment of wheeling service fees.

The Fair Trade Commission together with the Ministry of ETI provides guidelines for what constitutes appropriate electricity sales. (The latest amendments to the guidelines were made in 2017.) The guidelines provide that the following behaviours engaged in by a former general electricity utility may violate the Anti-Monopoly Act:

- behaviour that hinders the business of a newcomer in the retail market; such as:
- offering substantially lower rates to consumers who may enter into an agreement with a newcomer, or who purchase the combined sale of electricity and other goods or services from the former general electricity utility;
- offering higher rates to consumers who intend to purchase electricity both from the general electricity utility and a newcomer;
- offering higher rates to consumers who have purchased electricity from a newcomer; and
- prohibiting a partner of a business alliance for the combined sale of electricity and other goods or services from entering into another business alliance with a third-party electricity retailer, or making such partner commit to a most-favoured-nation treatment for the combined sale with the former general electricity utility; and
- behaviour that hinders the business of a newcomer in the wholesale market (such as an independent power producer), such as:
  - offering a purchase price much higher than the market value for an electricity generation facility that a newcomer in the wholesale market intends to purchase; and
  - refusing to provide continuous back-up services to a newcomer in the wholesale market.

Update and trends

The government continues its efforts to facilitate fair competition in the deregulated electricity market. First, in 2019 the government will introduce the base-load electricity trade market, where 10 former general electricity utilities will be required to provide at least a certain ratio of their base-load electricity to newcomers. Second, in 2019 the government will change the rule related to use of interconnection lines between neighbouring supply areas, from a first-come-first-served rule to the indirect auction rule through JEPX trade as mentioned in question 33, in order to fairly allocate the use of the interconnection lines among 10 former general electricity utilities and newcomers. In addition, the Tokyo Commodity Exchange endeavours to list the electricity derivatives, to enable newcomers to hedge the price volatility at JEPX.

Other efforts of the government include the introduction of the capacity market expected to be in 2020, in order to ensure that power plants provide sufficient electricity to adjust for any imbalance in the competitive market situation, even after the increase of renewable power plants.

The government is considering the possibility of amending the wheeling service cost charging framework, by which the costs will be imposed not only on electricity retailers but also on power generators, and collecting the fixed costs of the wheeling system more from the base rate rather than the meter rate, to make cost collection more stable in the future in a society where distributed power generation is evolving.

In regard to the environmental perspective, in May 2018 the government introduced a new market (non-fossil fuel value trade market) that enables relevant companies' trade value of electricity being generated without fossil fuel such as renewable power or nuclear power. The government will amend the guideline on the electricity retail business to ensure accurate explanation about the non-fossil fuel value.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The Minister of ETI has the authority to do the following:

- order a general transmission utility to stop using or providing another person with information concerning electricity suppliers and users, which the general transmission utility has obtained in the course of providing wheeling services, for purposes other than for the provision of wheeling services;
- order a general transmission utility to stop treating any particular electricity retailer in an unreasonably preferential or disadvantageous manner or giving any other benefits or causing any other hindrances to such an electricity retailer in the course of providing a wheeling service; and
- order a general transmission utility to amend its wheeling service provisions, if it sets unreasonably high rates for imbalance services without an appropriate cost basis, or if it sets unreasonable rates for imbalance services that vary depending on season or time.

The Fair Trade Commission has the authority to do the following, if it decides that certain behaviour of a general electricity utility violates the Anti-Monopoly Act:

- issue a cease-and-desist order;
- issue an order for payment of a surcharge; and
- file a formal notification with the prosecutor general.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

When a foreign company intends to obtain a share of a non-listed company or 10 per cent or more of issued shares of a listed company operating in the Japanese electricity sector, the company must report the business purpose, amount and timing, among other items, of the investment to the Minister of Finance and the Minister of ETI beforehand. When examining the report, these ministers take into consideration whether the investment by the foreign company may impair Japanese national security, disturb the maintenance of public order, obstruct the protection of public safety, or have a significant adverse impact on the effective management of the Japanese economy. Although the period for the examination of the report is generally set at 30 days, the ministers may extend the period for up to five months.

In 2008, when the Children's Investment Fund Management Ltd (the TCI Fund), a UK-based activist fund, tried to obtain up to 20 per cent of the shares of J-Power, a wholesale electricity utility, the Minister of Finance and the Minister of ETI decided not to allow the investment. The primary reason for the decision was that the TCI Fund had made certain shareholder requests with respect to the management of J-Power, which was planning to construct a new type of nuclear plant, and the ministers were concerned that the activist nature of the investment would affect Japan's policy regarding the stable supply of electricity, atomic power and the nuclear fuel cycle.

Acquisitions of interests in renewable power generation by foreign companies are active since the introduction of the FIT in 2012, because the ministers generally do not become involved in such acquisitions.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There are 10 divided areas of electricity transmission lines in Japan, each of which is owned and operated by a regional transmission utility. These areas are interconnected with the neighbouring areas through interconnection lines between these areas. Authorisations required to construct and operate these interconnection lines are basically the same as those required for transmission lines. See question 9. General transmission utilities have constructed and operated these interconnection lines. As the volume of electricity that can pass through these lines is limited, the OCCTO is in the process of discussing how to strengthen the interconnection lines and how to share the costs fairly between the relevant business players.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Regarding access to the interconnection lines between the neighbouring transmission areas in Japan, the first come first served rule applies. The OCCTO plans to amend the rule in 2018 to facilitate wholesale electricity trading beyond each of the transmission areas and share the interconnection capacity fairly between the relevant business players. After the amendment, currently scheduled for October 2018 when the indirect auction rule is adopted, the available interconnection capacity will be generally allotted to the preceding day spot market transaction at JEPX and therefore parties that would like to provide or procure electricity through the interconnection grid between the neighbouring transmission areas need to sell or purchase the electricity at JEPX. Only those which succeed in completing the deal at JEPX will be able to use the interconnection line between neighbouring transmission areas.

Because Japan is an isolated island country, cross-border electricity supply does not exist at this stage and there are no rules relating to it.

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Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the EBA, general transmission utilities are prohibited from giving preferential treatment or conferring other benefits to their affiliates when they provide wheeling services. General transmission utilities are also prohibited from providing affiliates with information concerning other electricity suppliers and electricity users that they have gathered in the course of providing wheeling services, for purposes other than the provision of the wheeling service.

If a general transmission utility gives preferential treatment to its affiliates, such as charging its affiliates rates unreasonably lower than those provided in the tariff, it will also be deemed to be in violation of the Anti-Monopoly Act, which prohibits discriminatory consideration.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

If, in the course of providing a wheeling service, a general transmission utility gives unreasonable preferential treatment or benefits to its affiliates or if a general transmission utility provides its affiliates with information concerning other electricity suppliers or consumers that it has gathered in the course of providing wheeling services, the Minister of ETI may order the general transmission utility to discontinue or correct such behaviour. If the utility violates the order, the utility is subject to a fine of up to ¥3 million. The Minister of ETI also has the authority to cancel the utility's licence if the utility has violated the EBA or any order issued under the EBA, and he or she finds such violation to be harmful to the public interest.

If a general transmission utility company gives preferential treatment to its affiliates, such as charging its affiliates a rate that is unreasonably lower than those provided in the tariff, the Fair Trade Commission may issue a warning, cease-and-desist order or an order for payment of a surcharge.

Kenya

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Kenya's energy policy is set out in Sessional Paper No. 4 of 2004 (the Energy Policy). The Energy Policy provides for the regulation of the entire energy sector including electric energy, petroleum and renewable energy. With respect to the regulation of electricity, the policy contains a detailed raft of measures which include:

- the development of a competitive market structure for the generation, supply and distribution of electricity;
- the establishment a rural electrification authority; and
- the promotion of entry of private entities into the sector and the creation of a new energy regulator.

The policy guidelines under the Energy Policy were effected through the Energy Act, 2006 (the Energy Act). The Energy Act is currently the primary law governing the energy sector in Kenya. The Energy Act provides for the establishment of the Energy Regulatory Commission (ERC) as the single regulatory agency with the responsibility for economic and technical regulation of the energy sector. A number of regulations and guidelines have been promulgated under the Energy Act, including:

- the Energy (Electricity Licensing) Regulations 2012, which set out the requirements to be fulfilled by any person desiring a licence or permit authorising him or her to take part in the generation, transmission, distribution or supply of electrical energy in Kenya;
- the Electric Power (Electrical Installation Work) Rules 2006, which provide the requirements for the licensing of electricians and electrical contractors; and
- the Energy (Complaints and Dispute Resolution) Regulations 2012, which provide the mechanisms through which the ERC resolves complaints and disputes between a licensee and its customers.

Since the publication of the Energy Policy in 2004, a number of changes have taken place that have presented new challenges and opportunities for the Kenya energy sector. These include growing concerns over climate change, Kenya's new constitution adopted in 2010 and the long-term development blueprint, Vision 2030, adopted in 2008. This has necessitated the review of the Energy Policy with the government issuing a Draft National Energy and Petroleum Policy dated June 2015. The policy framework proposed under the Draft National Energy and Petroleum Policy is reflected in the Energy Bill, 2017, which has been published and will soon be before Parliament for debate.

The ERC is mandated under the Energy Act to come up with national energy plans. In line with this, the ERC established a committee with responsibility for preparing and updating the Least Cost Power Development Plan (LCPDP), which is a 20-year development plan updated annually. The LCPDP is instrumental in identifying possible investments in the generation and transmission of power in the energy sector in Kenya; it also places a focus on coming up with techniques on how the demand for power can be met cost effectively.

The Ministry for Energy and Petroleum issued a Feed-in Tariff (FIT) Policy in March 2008 (the FIT Policy) (which was later revised in December 2012) relating to the generation of power through wind, biomass, small-hydro, geothermal and solar. The FIT Policy seeks to promote the generation of electricity from renewable energy sources and allows a power producer to sell renewable energy generated electricity to an offtaker at a predetermined tariff for a given period of time. We, however, understand that the ERC is currently drafting new regulations to move away from the current FIT regime to a system based on competitive auction for renewable energy projects. Currently, the FIT Policy allows the award of projects without a requirement for tendering.

There are also numerous other laws which have an impact on the energy sector. Key among these include the Land Act, 2012, the Public Finance Management Act, 2012, the National Construction Authority Act, 2011, the Environmental Management and Coordination Act, 1999, the Public Private Partnerships Act 2013 and the Geothermal Resources Act, 1982.

The institutional framework in the Kenya electricity sector includes:

- the Ministry of Energy and Petroleum: this is the government ministry in charge of creating energy policies and setting the strategic direction for the growth of the energy sector;
- the Energy Regulatory Commission: an independent body set up under the Energy Act to regulate the energy sector. Its functions include: issuing licences and permits for all undertakings in the energy sector; proposing regulations to the minister; enforcing compliance with sector regulations; setting and reviewing electric power tariffs and tariff structures; and approving all contracts for the sale of electrical energy (ie, power purchase agreements), transmission or distribution services;
- the Energy Tribunal: an independent statutory tribunal set up under the Energy Act to hear appeals from the decisions made by the ERC;
- the Rural Electrification Authority (REA): set up under the Energy Act and mandated to accelerate the pace of rural electrification across the country;
- the Kenya Electricity Generating Company Limited (KenGen): a state corporation in charge of generating the majority of the electricity consumed in Kenya. Currently, KenGen produces about 72 per cent of electric power in Kenya with the remaining amount generated by independent power producers (IPPs). KenGen is listed on the Nairobi Securities Exchange (NSE) after the government of Kenya sold 30 per cent of its stake in the company in 2006;
- the Kenya Power and Lighting Company Ltd (KPLC): KPLC's mandate is the transmission and distribution of electricity. In exercising this mandate, it is responsible for purchasing electrical energy in bulk from KenGen and other IPPs through bilateral agreements or through power purchase agreements approved by the ERC. The government has a controlling stake at 50.1 per cent of shareholding with private investors at 49.9 per cent. Kenya Power is listed on the NSE;
- the Kenya Electricity Transmission Company Limited (KETRACO): KETRACO is a wholly state-owned company tasked with developing the national transmission grid network and facilitating trade in electric power through its transmission network. It is the current policy for all new transmission infrastructure to be constructed, owned and operated by KETRACO; and
- the Geothermal Development Corporation (GDC): GDC is a wholly state-owned company established under the Geothermal Resources Act, 1982 to fast-track the development of geothermal resources in Kenya. Its mandate includes drilling steam wells,

providing steam for the generation of electric power, managing geothermal reservoirs and entering into steam supply contracts with IPPs.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The table below summarises the organisational structure of Kenya's electricity sector.

Body	Role
Policy making and regulation	
Ministry of Energy	Creating energy policies and setting the strategic direction for the growth of the energy sector
Energy Regulatory Commission	Independent body set up under the Energy Act to regulate the energy sector
Energy Tribunal	Independent statutory tribunal set up under the Energy Act to hear appeals from the decisions made by the ERC
Rural Electrification Authority	Accelerate the pace of rural electrification across the country
National Environmental Management Authority	Ensure that the activities undertaken in the energy sector do not affect the environment
Kenya Revenue Authority	Collection of revenue (taxes) due from activities in the energy sector
Kenya Nuclear Electricity Board	Regulate the nuclear energy sector
Exploration and generation	
Geothermal Development Corporation	Track the development of geothermal resources in Kenya
Kenya Electricity Generating Company Limited	Generates majority of the electric power in Kenya
Independent power producers	Generate electric power
Kenya Electricity Transmission Company	
Kenya Electricity Transmission Company Limited	Developing the national transmission grid network and facilitating trade in electric power through its transmission network
Kenya Power and Lighting Company	
Kenya Power and Lighting Company	Transmission and distribution of electricity

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Under the Energy Act, any person who wishes to generate, import or export, transmit or distribute electrical energy is required to obtain a licence or permit from the ERC. This requirement is further enumerated under the Energy (Electricity Licensing) Regulations, 2012 (Licensing Regulations) which set out the application process for various permits and licences.

Under the Licensing Regulations, no permit or licence is required to generate electricity where the electricity generated does not exceed 1,000kW and is generated for own consumption. A permit is required for the generation and supply of electrical energy not exceeding 3,000kW and a licence is required for generation, transmission, distribution or supply of electrical energy exceeding 3,000kW.

Where a project is to be undertaken under the FIT Tariff Policy regime, the project will require prior approval from the Ministry of Energy and Petroleum. The FIT Tariff Policy – Application and Implementation Guidelines provide that an applicant will have to submit an expression of interest to the Ministry of Energy and Petroleum together with a FIT Project Application Form. If the application is approved, the applicant can begin negotiations on the power purchase agreement with KPLC.

It is also worth noting that there are a number of other licences and permits required under other national and county laws that an applicant would be required to obtain in order to operate a generation facility, including an environmental impact assessment licence issued by the National Environmental Management Authority, approval of development permissions and building plans by the relevant county government and registration of the project site as a workplace with the Director of Occupational Safety and Health under the Occupational Safety and Health Act, 2007.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Kenya enacted a new grid code in May 2017 comprising of:

- the Kenya National Electricity Transmission Grid Code, May 2016, developed to improve the ability of Kenya's power system to be used by multiple independent parties while being planned and operated safely, reliably, efficiently and economically in a non-discriminatory manner; and
- the Kenya National Distribution Code May 2016, developed to define the rules and regulations for various users for accessing and using the distribution system.

The grid code is the primary technical document stipulating rules and regulations that various players in the electricity production chain are expected to abide by for efficient operation of the transmission system.

It is also the government's current policy for all new transmission infrastructure to be constructed, owned and operated by KETRACO. This policy is in line with the unbundling of the energy sector in Kenya which provides for all existing transmission infrastructure to be held by KPLC, but for all new transmission infrastructure to be developed by KETRACO.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Government policy and legislation in Kenya encourages the use of renewable sources of energy to generate power.

From a policy point of view, the Energy Policy highlights the role of the government in promoting the use of renewable sources of energy such as designing incentive packages to promote private sector investments in renewable energy and other off-grid generation and government support in research and development in emerging technologies like wind energy generation. The FIT Policy also provides the framework for renewable sources of energy that may be used in the generation of electricity. The FIT Policy requires power producers to sell renewable energy generated electricity to KPLC, which is the single offtaker currently operating in the Kenyan market and provides qualifying tariffs for a set period of time.

The primary legislation for the energy sector, the Energy Act, provides for the development of renewable sources of energy including biomass, biodiesel, bioethanol, charcoal, fuel wood, solar, wind, tidal waves, hydropower, biogas and municipal waste.

In addition, there are several other regulations enacted to promote the use of renewable energy sources, such as the Energy (Solar Water Heating) Regulations, 2012, which require all existing premises with hot water requirements of a capacity exceeding 100 litres per day to install and use a solar heating system.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Kenya has in place a number of policies and laws aimed at addressing the challenges brought about from climate change. In particular, Kenya recently enacted the Climate Change Act, 2016, which aims at improvement of efficiency and reduction of emissions through the uptake of technologies that support low carbon, and climate-resilient

development. This is in addition to the National Climate Change Response Strategy, the National Climate Change Action Plan (NCCAP) and the Paris Agreement to which Kenya is a signatory.

Under the NCCAP, Kenya has pledged to cut its carbon emissions to 30 per cent below 'business-as-usual levels' by 2030, by expanding solar, wind and geothermal power, and bringing forest cover to up to 10 per cent of the country while reducing reliance on wood fuel. This has seen Kenya focus on diversifying her energy sources from thermal power to geothermal power. The use of geothermal power has steadily grown from 20 per cent of the total electrical energy produced in June 2013 to 40 per cent as at December 2016.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Not applicable.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Kenya is exploring the possibility of setting up nuclear power plants. In this regard, the Kenya Nuclear Electricity Board (KNEB) was established to help promote the development of nuclear electricity generation in Kenya.

KNEB works under the guidance of the International Atomic Energy Agency (IAEA), which is the international body that promotes unified cooperation in nuclear energy for countries across the world. Its main aim is to promote safe and secure use of nuclear technologies in various countries. KNEB, with the assistance of the IAEA, has developed a Draft National Nuclear Regulatory Bill, 2017 (the Draft Nuclear Bill) and a draft Nuclear Policy. Concurrently, the Energy Bill, 2017, which has been published and will soon be before Parliament for debate, provides for the establishment of the Energy and Petroleum Institute, which will promote the development and generation of nuclear energy in Kenya.

KNEB has already conducted pre-feasibility studies in Kenya for the proposed development of a nuclear power plant.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Persons who wish to operate, manage or control facilities consisting of high-voltage electric supply lines for the movement of electrical energy in bulk between generating stations and transmission substations for the purposes of enabling supply to consumers are required to obtain a transmission licence or permit issued by the ERC.

A permit shall be required in respect of all undertakings transmitting electrical energy that does not exceed 3,000Kw, and a licence for the transmission of any electrical energy exceeding 3,000Kw.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Entities that have obtained a transmission licence from the ERC may operate in transmission services, and in connection with distribution and supply entities, they may engage in supply of electrical energy to customers. It is, however, the government's current policy that all new transmission infrastructure is developed, owned and operated by KETRACO. This policy is in line with the unbundling of the energy sector.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

As part of its mandate, KETRACO is undertaking several new transmission projects aimed at developing a robust grid system in order to keep up with economic activities taking place in Kenya, requiring greater generation capacity and, therefore, a robust grid system to meet the growing demands. KETRACO has identified priority projects for implementation, totalling about 6,270km of transmission lines comprising 2,081km of 132kV, 1,278km of 220kV and 2,299km of 400kV AC lines, as well as 612km of 500kV high-voltage direct current line. It is projected that by 2031 KETRACO will have constructed 16,000km of transmission lines.

Kenya also provides an exemption from withholding tax on interest paid on loans from foreign sources for specifically investing in the energy sector including transmission lines. Further, instruments in respect of transactions relating to such loans from foreign sources for investing in the energy sector are exempt from stamp duty. A project company investing in a transmission network will qualify for these exemptions as it will be deemed to be undertaking an investment in the energy sector.

In addition, payments made to a non-resident construction contractor or sub-contractor (without a permanent establishment in Kenya) on account of services rendered under a power purchase agreement (which usually includes the construction of transmission or grid connection infrastructure) are exempt from withholding tax. A project company will also be entitled to an investment deduction equal to the amount of expenditure incurred in the construction of the transmission network.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates and terms for the transmission services are determined by the ERC. The ERC is required by the Energy Act to set the rates in a fair, transparent and predictable manner consistent with government policy and sensitive to stakeholder interests.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The ERC is the main oversight body in the energy sector. The ERC enforces the provisions of the Energy Act and its regulations, plus codes and standards for the energy sector, and it prescribes the conditions that attach to the granting of such licences to ensure that the applicant is competent to maintain a reliable transmission grid. The ERC has the power to suspend or revoke licences and permits in cases where the licence holder wilfully neglects to conduct operations in accordance with the terms of the licence.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Persons who wish to distribute electrical energy require a distribution licence issued by the ERC under the Energy Act. It is important to note, however, that KPLC is the sole distributor for electrical energy in Kenya.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Access to the distribution network is granted by KPLC subject to the terms and conditions of a power purchase agreement.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

A key governmental initiative for the expansion of the distribution network has been the Rural Electrification Program implemented by the REA. The Rural Electrification Program, also known as the Last Mile

Connectivity Project, is an initiative geared towards increasing electricity access to Kenyans across the country. It involves reducing the cost of accessing electricity for the customer and supply for the power provider by subsidising the cost of connecting to the grid. The project is a combined government of Kenya and donor-funded programme.

Currently, KPLC is the sole main distributor and supplier for electrical energy in Kenya. However, this monopoly could end if the Energy Bill, 2017 is enacted in its current form. The Energy Bill, 2017 proposes the creation of a legal framework to support the licensing of private parties and county governments to distribute electricity.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

KPLC is the main distributor of electrical energy in Kenya and it charges end consumers for power consumed. KPLC determines the electricity tariff which is then reviewed and approved by the ERC.

The ERC is required by the Energy Act to set the rates in a fair, transparent and predictable manner consistent with government policy and sensitive to stakeholder interest.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Pursuant to the requirements of the Licensing Regulations and the Energy Act, the ERC grants licences to entities that wish to supply electricity to consumers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

KPLC proposes retail tariffs that are then reviewed and approved by the ERC. If approved, the ERC publishes the approved rates in the Kenya Gazette specifying the date on which the rates are to take effect. The ERC is required by the Energy Act to set the rates in a fair, transparent and predictable manner consistent with government policy and sensitive to stakeholder interests.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

KPLC proposes retail tariffs that are then reviewed and approved by the ERC. If approved, the ERC publishes in the Kenya Gazette the approved rates as the Schedule of Tariffs for the Supply of Electrical Energy, which provides the different rates at which electrical energy may be supplied to consumers, including wholesale consumers, by KPLC. The ERC is mandated to regulate the energy sector in a fair, transparent and predictable manner consistent with government policy and sensitive to stakeholder interests.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Not applicable in Kenya, given that there is only one national utility, KPLC, which itself is a state corporation.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Ministry of Energy and Petroleum is responsible for electrical energy policy formulation and development for the energy sector in Kenya.

23 Scope of authority

What is the scope of each regulator's authority?

ERC is the primary regulator of the energy sector in Kenya. ERC's scope of authority is outlined by the Energy Act and it includes, among others, the power to:

- issue, renew, modify, suspend or revoke licences and permits for all undertakings and activities in the energy sector;
- formulate, enforce and review environmental, health, safety and quality standards for the energy sector, in coordination with other statutory authorities;
- enforce and review regulations, codes and standards for the energy sector; and
- approve electric power purchase and network service contracts for all persons engaging in electric power undertakings.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ERC is established by the Energy Act as an independent commission.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Any decision of the ERC can be challenged by a written appeal to 'the Tribunal' within 30 days of such decision. One may also launch an appeal against the decision of a licensing agent to the ERC within 30 days from the date the decision of the licensing agent is made.

Once the appeal is launched with the Tribunal or the ERC, the Energy Act requires a decision to be communicated within 45 days of receipt of the appeal by the Tribunal or the ERC.

A party aggrieved by the decision of the Tribunal can further appeal such decision at the High Court of Kenya.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Competition Authority of Kenya (CAK), established under the Competition Act, 2010 (the Competition Act) is the main regulatory body with respect to approving or blocking mergers in Kenya.

At a regional level, as Kenya is a COMESA member state, the COMESA Competition Commission would have authority in a merger transaction where either the acquirer or the target operates in two or more COMESA countries, and certain asset or turnover thresholds of the merging parties are met.

The ERC is also mandated under the Energy Act to monitor, and ensure implementation and observance of, the principles of fair competition in the energy sector, in coordination with other statutory authorities.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In Kenya, all mergers, whether inside or outside of Kenya, which result in a direct or indirect 'change of control' in an entity or section of a business in Kenya, and where the merging parties meet the assets and turnover thresholds, require the approval of the CAK. Change of control can occur through various means, including acquisition of a majority shareholder or the right to appoint a majority of the directors, and acquisition of a minority interest (say 20 per cent) coupled with significant reserved powers or veto rights over key decisions of the target company, such as business plan and budget and appointment of key management.

Once the merging parties establish that a change of control has occurred, then the second limb of the test should be examined – whether the merging parties meet the assets or turnover thresholds. These thresholds are industry specific. For the energy industry, a merger would be notifiable if the combined turnover or assets of the merging parties in Kenya is between 100 million and 1 billion Kenyan shillings.

Where a change of control occurs but the thresholds are not met, parties would still be required to make an application for exclusion from notification.

The CAK has a prescribed merger notification form, which contains four schedules, which should be completed by each of the merging parties and filed with the CAK in the case of both an exclusion and a full notification. The schedules to be completed depend on whether the merger parties have a horizontal or vertical relationship. Applications for a notification attract a filing fee of between 500,000 and 2 million shillings, while an application for an exclusion is free.

When making its determination, the CAK considers whether the merger is likely to prevent or lessen competition or create or strengthen a dominant position and whether there are any consumer welfare aspects. Generally, an exclusion application is determined within 14 days. Merger notifications are approved or disapproved within 60 to 75 days (although where CAK deems a matter complex, it can extend these timelines by a further 60 days). The time starts running when CAK deems a filing complete, not when the application is made. It is important to note that the Kenyan competition regime is 'suspensory' in nature, which means that parties are prohibited from completing the transactions without prior approval of the competition regulators. Payment of more than 20 per cent of the purchase price is considered to constitute implementation of a merger.

Separately, any transfer of a licence or permit issued under the Energy Act or a change in the controlling interest of a licensee requires the approval of the ERC. There is no time limit prescribed within which the ERC has to make its determination.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CAK is mandated to investigate anticompetitive behaviour; however, prosecutorial powers vest in the director of public prosecutions pursuant to the provisions of the Constitution of Kenya, 2010. The Competition Act also establishes the Competition Tribunal which is in the process of being operationalised.

Additionally, the ERC is mandated under the Energy Act to promote the observance of the principles of fair competition in the energy sector. In fulfilment of this mandate, the ERC may invoke its broad powers under the Energy Act to revoke or suspend licences and impose sanctions against entities that fail to observe such principles.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The Competition Act defines what abuse of dominance is and what constitutes a restrictive trade practice. The CAK has also published several guidelines which detail the factors that it will take into consideration when determining anticompetitive conduct. These guidelines include the Guidelines in the Control of Unwarranted Concentration of Economic Power and Consolidated Guidelines on Substantive Assessment of Restricted Trade Practices under the Competition Act.

Restrictive trade practices, which are generally any practices or agreements between competitors at the same level of production and agreements among market players at different levels of production that distort or restrict competition, are prohibited. Undertakings that have a dominant position in the market will be considered to be engaging in unfair practices if such entities use their position to directly or indirectly impose unfair purchase or selling prices or any other unfair trading conditions on other trading parties in the market.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The Energy Act and the Competition Act, 2010 empower the ERC and the Competition Authority of Kenya, respectively, to impose sanctions and penalties against any entities that take part in anticompetitive or unfair trade practices.

For an abuse of dominance or an offence relating to restrictive trade practices, such sanctions and penalties can include a fine of up to 10 million shillings and potential imprisonment of up to five years. The CAK may also impose a financial penalty of up to 10 per cent of the immediately preceding year's gross annual turnover in Kenya of the undertaking in question. The CAK is further empowered, where it finds an undertaking has violated any provisions of the Competition Act (including abuse of dominance), after investigation, to:

- restrain the undertaking from further engaging in the conduct;
- direct any action to be taken by the undertaking concerned to remedy or reverse the infringement or the effects thereof;
- impose a financial penalty; or
- grant any other appropriate relief.

The Energy Act may suspend or revoke licences of such entities while under the Competition Act, the penalty prescribed for an entity taking part in restrictive trade practices which are deemed to give the entity an unfair advantage over other traders in the market is an imprisonment term not exceeding five years or a fine not exceeding 10 million shillings, or both.

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International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Generally, there are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies under the Energy Act.

However, there may be barriers to the acquisition of interests by foreign companies in some cases by virtue of the structure of the market. For example, in relation to the generation of electricity, subject to particular laws around land ownership, foreigners can wholly own any IPP. However, KenGen, the largest generator of electrical energy in Kenya, 70 per cent owned by the government, while the remaining 30 per cent is listed on the NSE. In the distribution of electricity, KPLC is the sole distributor of electrical energy in Kenya. The government has a controlling stake in KPLC at 50.1 per cent shareholding with the rest held by private investors on the NSE.

It is important to note that the restriction on foreign shareholding in companies listed on the NSE which was previously limited to 75 per cent has since been repealed. Foreign investors are now able to own any proportion of shares in listed firms subject to the future publication of guidelines on maximum foreign shareholding in an issuer or listed company.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Not applicable.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Not applicable.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Not applicable.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Not applicable.

Korea

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Legislative framework

The Electricity Business Act (sometimes referred to as the Electric Utility Act) and its subordinate presidential and ministerial decrees comprise the key legislation regulating the electricity sector in South Korea. The Act broadly provides for the following: the granting of licences to engage in specified electricity businesses (including, in particular, generation, transmission, distribution and retail sales), protection of electricity customers, prohibition of certain unfair activities, a wholesale electricity market, constitution and responsibilities of the electricity regulatory body, and safety management relating to electricity equipment. The framework of the Electricity Business Act is based on the Korean government's original policy initiatives to liberalise the Korean electricity market in the late 1990s, which was sidetracked by the political backlash against liberalisation in the mid-2000s, as discussed below.

A number of other specialised statutes are also relevant to the overall legislative framework. The Act on the Development, Use and Diffusion of New and Renewable Energy, which is intended to promote development of new and renewable energy, provides for feed-in tariff (FIT) programmes and renewable portfolio standards (although the FIT programme is no longer available to new and renewable sources entering the market after 2012 except small-scale solar power generation facilities; see 'Update and trends' for further details) and other schemes to incentivise development of new and renewable sources. The Integrated Energy Business Act is also applicable to enterprises wishing to supply combined heat and power to customers, although the Electricity Business Act still governs electric power supply. Finally, in relation to nuclear energy, the construction and operation of nuclear power plants must comply with the requirements of the Nuclear Safety Act.

Government policy

Since 1999, the Korean government has implemented policy initiatives to liberalise the Korean electric power industry. As part of these initiatives, in the early 2000s, the government established the Korea Power Exchange (KPX) in order to enable wholesale electricity trading, split off the generation arm of the state-owned Korea Electric Power Corporation (KEPCO) into a number of separate power generation companies (GenCos) in order to promote competition in the electricity generation sector, and adopted a plan to privatise one of the five GenCos engaged in thermal generation.

However, owing to a political backlash against liberalisation during the mid-2000s which has resulted in the suspension of further liberalisation initiatives, various market and non-market factors continue to co-exist side-by-side in the electricity sector. For example, the installation of power plants is in principle permitted only when the capacities resulting from the introduction of such power plants would be compatible with the national electricity supply and demand forecasted by the Ministry of Trade, Industry and Energy (MOTIE), and wholesale electricity trading prices are not determined through supply and demand, but rather in accordance with a specially designed pricing mechanism set forth in the Electricity Market Operation Rules (Market Rules) of the KPX, over which the MOTIE exercises de facto control. At this point, it remains uncertain whether the government will resume its plans for liberalisation or pursue alternative initiatives.

Under the Electricity Business Act, the MOTIE is vested with the responsibility of, inter alia, forecasting long-term electricity supply and demand, preparing basic directions on such supply and demand, and planning the installation of utilities relating to generation, transmission and distribution of electricity, which is notified every two years via a Basic Plan on the Long-Term Supply and Demand of Electricity (Basic Plan).

The 7th Basic Plan for 2015–2020, that was issued during former President Park Geun-hye's administration, focused on: ensuring a stable supply of electricity as its top priority; low carbonisation in the country's power mix; active consumer demand management; and diffusion of distributed generation. To achieve low-carbonisation of the generation sector, the MOTIE suggested the following: withdrawing certain coal-fired power plant projects from the 7th Basic Plan, replacing obsolete thermal power plants with more environmentally friendly ones, building up of new nuclear power plants and increasing the overall share of new and renewable energy sources. Following a marked deterioration in air quality in the spring of 2016, thermal power plants have faced the brunt of the (public and political) backlash, resulting in the MOTIE's announcement of a policy to retire obsolete coal-fired power plants earlier than originally planned in the 7th Basic Plan.

In recent years, the Korean public has frequently raised complaints regarding the issue of air quality in Korea, with coal-fired power plants blamed for being a major source of fine particles within the atmosphere. In addition, the Fukushima Daiichi nuclear disaster in 2011 has resulted in the weakening of political momentum in support of nuclear power as well as raising public awareness of safety concerns associated with nuclear power generation. In response to such public sentiment, current President Moon Jae-in vowed during his election campaign to do away with nuclear and coal-fired power plants and substitute them with liquefied natural gas (LNG) and clean, renewable energy sources, and has since indicated his intent to deliver on his promises. The MOTIE: called for the closure of 10 coal-fired power plants with an age of 30 years or more during Moon's term of office (2017–2022); announced a plan to comprehensively reassess all coal-fired power plants under construction and has requested the conversion of such coal-fired power plants into LNG-fired power plants; and indicated its intention to reject any licence applications for coal-fired power plants in the future. Nuclear energy sources have also been affected, with the government announcing that it would not grant a licence for any new nuclear power project. On the other hand, the Moon administration plans to utilise renewable sources more aggressively in order to achieve the goal of raising the share of renewable energy in electricity generation from around 5 per cent to 20 per cent, while reducing emissions of polluting materials by 50 per cent, by 2030.

In response to these trends, the 8th Basic Plan for 2017–2031, issued on 29 December 2017 under President Moon Jae-in's administration, mainly addresses the environment and public safety, as well as the economic efficiency of the electricity market. In order to achieve environmental protection policy goals in energy production, the MOTIE suggested withdrawing nuclear power plant construction, reducing the proportion of coal-fired power generation in the mix of power generation sources, replacing certain obsolete coal-fired power

plants with more environmentally friendly LNG plants, and (as mentioned above) expanding the share of renewable energy in electricity generation to 20 per cent by 2030. The MOTIE projects an increase in renewable generation from 34.4TWh in 2017 to 125.8TWh in 2030. Solar and wind power generation capacity is expected to account for 87.6 per cent of total renewable energy generation capacity by 2030. The Korean government plans to reduce the cost gap between coal and LNG power generation by reflecting environmental costs and further adjusting tax rates applicable to coal and LNG power generation.

The Electricity Business Act was amended in March 2017, effective from June 2017, to take into account the economic, environmental and safety impacts of future national planning for electricity supply and demand in Korea. Under the amendment, KPX must give comprehensive consideration to these impacts in the operation of the electricity market and power generation systems in Korea.

This policy aim of the Moon administration has sparked controversy in Korea, especially among industries directly or indirectly affected. In particular, many concerns have been raised regarding possible increases in electricity bills and the security of power supply.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Even after splitting off the GenCos, KEPCO still remains an integrated electricity utility company having an effective monopoly over the transmission, distribution and retail sale of electricity in South Korea.

As of the end of 2017, the power production industry in South Korea consisted of KEPCO's six wholly owned generation subsidiaries (ie, the GenCos) and 17 independent power producers (excluding renewable energy producers). GenCos generate the substantial majority of electricity in the country, and, as of the end of 2017, held approximately 70.3 per cent of the total installed generation capacity.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Under the Electricity Business Act, the MOTIE possesses the power to authorise new power plant projects through the granting of generation business licences. Such power is delegated to provincial authorities for power plants having capacity of 3MW or less. In principle, a generation business licence will not be granted for a proposed power plant project if its installed capacity amount would be inconsistent with the MOTIE's forecasted national electricity supply and demand. The criteria that the MOTIE applies in granting licences include, among other things, bankability of the proposed project, credit ratings of sponsors, feasibility of construction and operation plans, qualifications of human resources or contractors, social receptiveness in project areas, securing project sites, ensuring interconnection and transmission and water and fuel supply, and reliability of sponsors.

Notably, a power producer's failure to meet construction schedules in terms of both commencement and completion of construction might result in the cancellation of an already issued licence.

On Jeju island, the Jeju provincial authority is also empowered to authorise wind power projects, although it must discuss with the MOTIE in respect of wind power projects having capacity of 20MW or more.

The Electricity Business Act was amended in June 2018, effective from December 2018, establishing a licensing regime for small-scale electricity brokerage businesses and electric vehicle charging businesses in order to promote the establishment of new electricity businesses. Small-scale electricity brokerage businesses collect electricity produced or stored in: new or renewable energy facilities; energy storage devices (ESS); and electric vehicles, and trade electricity on the KPX. Electric vehicle charging businesses provide electricity to electric vehicles. Both types of business must be registered with the MOTIE.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Business Act, tariffs for grid connection services are subject to review of the Electricity Regulatory Commission (ERC) and approval from the MOTIE. The Act also requires transmission service providers not to discriminate among their customers. The operation of generation facilities must abide by the Standard on the Electric Power Grid and Electricity Quality promulgated by the MOTIE.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

As mentioned in question 1, the Act on the Development, Use and Diffusion of New and Renewable Energy promotes the development of alternative energy sources, which are classified into new and renewable energy sources. New energy sources include power production from hydrogen fuel, fuel cells and integrated gasification combined cycles, and renewable energy sources include solar power, wind power, hydro power, geothermal power, bioenergy power and waste energy power. Owing to the increasingly heavy burden on governmental budgets, feed-in-tariff programmes are no longer available to new and renewable sources entering the market after 2012, which may instead apply for renewable portfolio standard programmes.

Although the 2nd National Energy Master Plan in 2014 showed a blueprint for distributed generation (mostly consisting of combined heat and power) as a response to social unease over long-distance transmission lines, there have not been any further initiatives to implement this blueprint. The government, however, announced in the 8th Basic Plan that it will promote the development of new and renewable energy sources more aggressively. See question 1 for further details.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

At the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), the South Korean government agreed to reduce the country's nationwide greenhouse gas emissions by 37 per cent, or from 314.8 million tons to 536 million tons, from the business-as-usual (BAU) level, by 2030. According to the 2030 Greenhouse Gas Reduction Road Map announced in December 2016, the South Korean government was considering achieving this objective through a combination of domestic policies (accounting for 25.7 per cent of reductions) and utilisation of international market mechanisms (accounting for 11.3 per cent). However, the South Korean government has been criticised for its weak will to prevent greenhouse gas emissions and for failing to provide specific action plans for international market mechanisms. On 24 July 2018, the South Korean government announced the revised 2030 Greenhouse Gas Reduction Road Map. According to the revised road map, the overseas greenhouse gas reduction target using international market mechanisms has been decreased dramatically and the electricity generation sector has been allocated 57.8 million tons to cut by reflecting the goals and targets set in the 8th Basic Plan and the Renewable Energy 3020 Implementation Plan. As discussed in question 1, the MOTIE has also announced its policy to retire or replace obsolete coal-fired power plants earlier than originally planned. The upshot is that domestic wholesale and retail electricity prices are likely to increase, because liquefied natural gas, which is far more expensive than coal, will comprise a greater portion of the country's overall power mix going forward.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Korean government is presently implementing various initiatives to facilitate the development and use of energy (or electricity) storage systems (ESS). For example, the government promotes the use of ESS equipment to improve grid connection conditions for renewable energy by assigning a higher weighted ratio to ESS equipment linked to wind (4.5 in 2018 and 2019, and 4.0 from 2020) and solar power projects (5.0 in 2018 and 2019, and 4.0 from 2020) than for wind and solar power projects without ESS equipment (2.0–3.5 and 0.7–1.5 respectively), in issuing renewable energy certificates (REC). The government has also established a demand response market where ESS facilities may function as peak shaving facilities. Meanwhile, a government fund raised for the domestic electricity industry plans to subsidise various energy-independent island projects under which renewable sources linked to energy storage facilities will replace existing small-scale diesel-based power plants on various islands. Finally, the government is also supportive of KEPCO's development of ESS equipment for frequency regulation in the grid. See 'Update and trends' for further details.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

South Korea relies heavily on imports of energy sources to satisfy most of its electricity demand. To achieve the goal of economic dispatch of electricity as well as to counter greenhouse gas emissions, the government has encouraged the development of new nuclear power plants. The 7th Basic Plan suggested that the construction of two new power plants was needed during 2028 and 2029 to fill forecasted deficiencies in installed capacities. However, the Fukushima Daiichi nuclear disaster in 2011 has given rise to increased political opposition to nuclear power in Korea in addition to a substantial decline in public receptiveness towards nuclear power plants. Consequently, the Moon administration decided to suspend construction of the two new nuclear power plants mentioned in the 7th Basic Plan. As discussed under question 1, nuclear power generation capacity is expected to decrease from 22.5GW in 2017 to 20.4GW in 2030, and the proportion of nuclear power in the mix of power generation is expected to decrease from 30.3 per cent in 2017 to 23.9 per cent in 2030.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

A transmission business licence is required to engage in the provision of transmission services. The MOTIE has authority to grant transmission business licences, although none have been granted so far except to KEPCO, the monopolistic operator of the nationwide transmission line.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Power producers may access transmission lines after contracting with the transmission service provider (ie, KEPCO) in accordance with the terms and conditions of KEPCO's Rules on the Use of Transmission and Distribution Facilities, which is subject to the MOTIE's approval.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The 8th Basic Plan suggests the following four directions in terms of planning of transmission lines: improvement of power grid receptiveness owing to the expansion of renewable energy generation, timely expansion and improvement of the stability of the power grid to support stable electricity supply, promotion of social and environmental receptiveness towards transmission lines, and overcoming the limitation of independent grid systems through the Northeast Asia Super Grid. See 'Update and trends' for further details.

To address the increasing rise of the not-in-my-back-yard (NIMBY) phenomenon against transmission lines in the country, which has at times hampered the development of new generation sources, the government enacted the Act on Compensation and Assistance for Areas Adjacent to Transmission and Transformation Facilities in 2014 to bolster support to adjacent neighbourhoods affected by transmission lines and increase compensation for economic losses caused by transmission lines crossing private properties.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The Electricity Business Act requires that tariffs for electricity transmission services be subject to the ERC's review and the MOTIE's approval. The Act also requires that transmission service providers not discriminate among their customers.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The KPX is primarily responsible for day-to-day operation of the country's power grid. The Electricity Business Act requires the MOTIE to promulgate standards to maintain the reliability of the power grid which the KPX and electricity utilities must follow, and has empowered the MOTIE to oversee, assess and investigate whether the grid, as maintained, is reliable.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

A distribution business licence is required to engage in the provision of distribution services. The MOTIE has authority to grant distribution business licences, although none have been granted so far except to KEPCO, the monopolistic operator of the nationwide distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

KEPCO, as the sole retail seller in the country, may access the distribution networks which are owned and operated by it. Community electricity business licence-holders are also eligible for access to distribution networks.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

In terms of smart grids, under the Act on Construction and Facilitation of Use of Smart Grids, the government is in charge of developing and implementing a five-year plan for constructing and facilitating the use of smart grids. Research and development funds may be accessible for developers of smart grid technologies, depending on the government's budget.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The Electricity Business Act requires that tariffs for electricity distribution services be subject to the ERC's review and the MOTIE's approval. The Act also requires distribution service providers not to discriminate from among their customers.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

A retail sale business licence is required to engage in the retail sales of electricity. The MOTIE has authority to grant retail sale business licences, although none have been granted so far except to KEPCO, the monopolistic retail electricity seller.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The Electricity Business Act and the Price Stabilisation Act set forth the procedures for the approval of tariffs for the retail sales of electricity. The MOTIE has power to approve proposals on tariffs, following consultation with the Ministry of Strategy and Finance and review by the ERC. Under the Electricity Business Act and the Price Stabilisation Act, electricity tariffs are in principle established at levels that would enable KEPCO to recover its costs attributable to its basic electricity generation, transmission and distribution operations as well as receive a fair investment return on capital used in those operations. Electricity tariffs also vary depending upon the voltage, season, time of usage, rate option and other factors.

KEPCO classifies electricity usage into nine categories – residential, general, educational, industrial, agricultural, street lighting, midnight power, electric vehicle, demand management optional – with a different tariff applying to each usage.

Effective from 1 January 2017, the government revised the previous rate structure for the purposes of easing the burden of electricity tariffs on residential consumers. Under the revised scheme, the progressive rate structure previously applicable to the residential sector was changed from a six-tiered structure into a three-tiered structure with the highest rate now being no more than three times the lowest rate (previously the highest rate was 11.7 times the lowest rate).

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Cost-based pool system

Since April 2001, wholesale electricity trades have been occurring at the KPX. The KPX has responsibilities under the Electricity Business Act for determination of wholesale electricity prices under the cost-based pool system as set forth in the Market Rules, and processing the trades and their settlements. Wholesale electricity prices have two principal components: system marginal price (largely representing variable costs of generation under the merit order system) and capacity payment (largely representing fixed costs of generation). Because variable costs and capacity payments are determined in advance by the Cost Evaluation Committee (mostly comprised of interested parties, government officers and industry experts), power producers as well as KEPCO have no effective control over the pricing in the wholesale electricity market. The system marginal price is adjusted on the basis of factors including the distance of a generation facility to supplied areas, network and fuel constraints and the amount of power loss such as transmission loss.

In order to prevent wholesale electricity trading resulting in excessive financial imbalances between KEPCO and its subsidiaries which sometimes arise from windfall profit taking by base-load generation facilities and upward fluctuations in fuel prices, the wholesale electricity prices applicable to such related party trades are determined using the following formula: variable cost + [system marginal price – variable cost] x adjusted coefficient. The adjusted coefficient is determined by the Cost Evaluation Committee based on considerations of, among other things, retail electricity tariff rates, the differential generation costs for different fuel types and the relatively fair rate of returns on investment.

In addition to system marginal price, power plants are entitled to capacity payments to compensate for their construction costs. The reference capacity price is determined annually by the Cost Evaluation Committee based on the construction costs and maintenance costs of a standard generation unit, and is paid to each generation company for the amount of available capacity indicated in the bids submitted the day before trading, subject to such capacity being actually available on the relevant day of trading. Previously, the same reference capacity price applied uniformly to all generation units regardless of fuel type. However, since October 2016, the reference capacity price applies differentially to each generation unit depending on the start year of its commercial operation, and ranges from 9.15 won to 10.07 won per kilowatt hour, subject to: the reserve capacity factor relating to the requirement to maintain a standard capacity reserve margin range of 15 per cent to prevent excessive capacity build-up and to induce optimal capacity investment at the regional level; hourly and seasonal adjustments in order to incentivise power producers to operate their generation facilities at full capacity during periods of peak demand; the transmission loss per generation unit in order to favour transmission of electricity from a nearby generation unit; and the fuel switching factor in order to promote environmental sensitivities to climate change and to encourage reduced carbon emissions by penalising generation units for excessive carbon emissions, especially thermal units.

Vesting contract system

The Electricity Business Act introduced a vesting contract system effective from November 2014, under which the difference between strike prices and market prices of traded electricity are settled for specified quantities. The vesting contract system's primary objective was to prevent windfall profit-taking by low-cost power producers (such as nuclear, coal, hydro and by-product gas-based power producers), and to replace the adjusted coefficient as the basis for determining the guaranteed return to generation companies. The system was also expected to provide more transactional certainties, economic dispatch of electricity and efficient operation to the parties relative to market trading, by requiring long-term contractual arrangements and providing incentives and penalties depending on the extent to which generation companies could supply electricity at costs below the contracted electricity prices. The contractual terms were subject to approval by the MOTIE in order to ensure fair and standardised application of the system to all power producers. In order to minimise disruptions to the electricity trading market in Korea, the vesting contract system was to be implemented in phases starting with by-product gas-based electricity in 2015, which accounted for 1.8 per cent of electricity purchased by KEPCO during that year. Owing to the recent backlash against coal-fired power plants and changes in the electricity business environment, however, the government has opted to apply the electricity pricing adjustment mechanism to independent coal-fired power plants instead of the vesting contract system. Under the electricity pricing adjustment mechanism, independent coal-fired power producers are entitled to recover associated investment costs and a fair rate of return on their investment.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Electricity Business Act specifically provides for electricity utilities' obligations to contribute to universal supply of electricity. In this respect, a power producer or retail seller may not refuse to supply electricity to a customer without justifiable reasons. To date, the presidential decree of the Act has failed to provide for universal supply of electricity in detail. However, the MOTIE's regulated retail electricity rate gives relative benefits to certain customers by way of cross-subsidies. No supplier of last resort has been appointed, as KEPCO, having effective monopoly over retail sales, assumes the de facto burden as supplier of last resort.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The MOTIE is primarily responsible for determination of regulatory policy in the electricity sector. The Electric Policy Council of the MOTIE is also involved in reviewing the draft Basic Plan, etc.

Update and trends

Renewable Energy 3020
The MOTIE released the Renewable Energy 3020 Implementation Plan on 20 December 2017, that declared that it will aim to expand the share of renewable energy in electricity generation from 7 per cent in 2016 to 20 per cent in 2030 by newly providing 48.7GW in renewable generating capacity (30.8GW in solar power and 16.5GW in wind power). In order to achieve this goal, the MOTIE intends to expand solar energy for personal use in urban areas and farmland, and plans to introduce a feed-in tariff system for solar power generation facilities with a capacity of less than 100kW owned by cooperatives or farmers or with a capacity of less than 30kW owned by private business operators for up to five years.

In addition, the MOTIE plans to set up large-scale offshore wind farms as part of its Renewable Energy 3020 Implementation Plan. According to the amended Guidelines on the Management and Operation of Obligatory Renewable Energy Supply Programme and Renewable Fuel Standard Programme announced on 25 June 2018, the REC weighted ratio applicable to offshore wind farms has been increased from a range of 1.5 to 2.0 to a range of 2.0 to 3.5.

Northeast Asia Super-Grid
The 8th Basic Plan suggests overcoming some limitations of independent grid systems by obtaining supply of electricity and peak demand relief in the Northeast Asia area through the Northeast Asia Super Grid (China-Korea-Japan line and Korea-Russia line). According to the 8th Basic Plan, some sections are targeted to be constructed by 2022.

23 Scope of authority

What is the scope of each regulator's authority?

The MOTIE has primary regulatory responsibility over the electricity sector in South Korea, including, among other things:
- granting of electricity business licences;
- registration of small-scale electricity brokerage businesses and electric vehicle charging businesses;
- approval of business transfers, mergers, split-offs and changes in control of electricity business enterprises;
- cancellation of business licences, suspension of operations, and imposition of sanctions or other disciplinary measures;
- approval of various tariffs relating to transmission lines, distribution networks and retail sales;
- setting ceiling amounts on wholesale electricity prices;
- approval of the Market Rules;
- approval of vesting contracts between power producers and retail sellers; and
- restructuring of the electricity industry, including introduction of a competitive system.

The Electricity Business Act requires the ERC to review the foregoing agendas before the MOTIE takes action.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ERC is a statutory regulatory body established pursuant to the Electricity Business Act and comprises qualified professionals and experts. However, the ERC is not an entirely independent body, as the MOTIE is known to have substantial influence over the ERC.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Any legal stakeholder may file an administrative appeal or lawsuit to invalidate decisions rendered by the MOTIE. Grounds for challenge include violations of constitutional principles (fundamental human rights, equal treatment, due process and so on) or laws.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The MOTIE has authority to approve mergers, split-offs, business transfers or changes in control of electric business enterprises. The ERC will review proposed transactions beforehand, but the final decision rests with the MOTIE.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Regulators will look to a number of high-level considerations, such as whether the transferee, assignee or successor can satisfy the criteria required for the issuance of a generation business licence, and whether there are any concerns that the transaction in question may adversely impact national electricity demand and supply or lessen the quality of electricity.

There is no statutory limit on the review period, and cases are very few so far in terms of thermal power plants.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The MOTIE has primary oversight responsibility over the electricity sector in South Korea, and has authority to implement sanctions or other disciplinary measures in respect of illegal activities. In addition, the Korean Fair Trade Commission (KFTC) is empowered under the Monopoly Regulation and Fair Trade Act (MRFTA) to regulate anti-competitive practices across all sectors.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The Electricity Business Act prohibits:
- a power producer from providing false information to the KPX for the purpose of price manipulation;
- a transmission or distribution service provider from:
- unduly discriminating among its customers;
- failing to perform its transmission or distribution obligations; and
- utilising another electricity business enterprise's information to harm such other enterprise or a third-party;
- a retail electricity seller from unduly calculating electricity tariffs; and
- an electricity business enterprise from harming the benefits of end users, and not complying with instructions from the KPX relating to its power grid operation.

Furthermore, the MRFTA prohibits various types of anticompetitive activities including, inter alia, price-fixing, market or customer sharing arrangements, bid collusion and abuse of market dominance. However, because the domestic transmission, distribution and retail markets are permitted to exist as virtual monopolies, instances of the KFTC's enforcement of the anticompetitive laws in the sector have been historically low in number.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

See questions 28 and 29.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Yes. Under the Electricity Business Act and the Foreign Investment Promotion Act and its subordinated regulation, foreign investments into a nuclear power generation sector are prohibited. Foreign investments into other power generation sector are permissible only where the total amount of installed capacities acquired by foreign investors from KEPCO or its subsidiaries is 30 per cent or less of the total installed domestic capacity.

In terms of transmission and distribution sectors (currently applicable only to KEPCO), foreign investments are permissible only where the total shareholding ratio of foreign investors is below 50 per cent and voting shares owned by foreign investors do not outnumber those owned by the largest domestic shareholder (as of the end of March 2018, the largest domestic shareholder of KEPCO was Korea Development Bank with a 32.9 per cent stake and Korean Government owns a 18.2 per cent stake). In this connection, the Korea Electric Power Corporation Act requires the government to directly or indirectly own at least 51 per cent of KEPCO's shares.

In addition to the foregoing restriction on foreign ownership of KEPCO's shares, the Financial Investment Services and Capital Markets Act and KEPCO's articles of incorporation set a 3 per cent ceiling on acquisition of KEPCO's common stock by a single investor, whether domestic or foreign.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Cross-border electricity trades are not possible in South Korea as its power grid is isolated owing to its geography (being a peninsula) and having North Korea (with which South Korea is still technically in conflict) as its neighbour.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

See question 32.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The Electricity Business Act does not specifically restrict transactions between an electricity utility company and its affiliates. However, the Market Rules, which strictly regulate wholesale electricity trades, apply to trades between KEPCO and its subsidiary companies (ie, GenCos). Meanwhile, the MRFTA and its subordinate presidential decree and regulations strictly prohibit 'unfair' transactions between affiliates in general.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The KFTC is responsible for the enforcement of anticompetitive laws and regulations governing restrictions on affiliate transactions. Typical sanctions imposed for non-compliance are administrative measures such as correction orders and monetary penalties.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Until 2013, the generation, transmission, distribution and marketing of electric power for public utility service purposes in Mexico was exclusively reserved to the federal government, through the Federal Electricity Commission (CFE), a public body of the federal government operating as a vertically integrated monopoly. Private participation was allowed only in the generation and transmission of power not intended to provide public utility services, under six types of permit. However, as a result of the lack of sufficient government funds to meet the significant increase in energy demand during the past decade and as part of the package of structural reforms that Mexico has enacted during the administration of President Enrique Peña Nieto, the Mexican energy sector is now subject to a completely new legal framework, enacted on 11 August 2014, following a historic Constitutional reform passed and enacted in December 2013, that opened almost all areas of the oil, gas and power industries to private participation and competition, with no foreign investment restrictions.

Over the past 20 years, the federal government fostered the participation of private companies in the electricity sector, particularly in power generation. Though its independent power production programme proved successful (private independent power producers have a generation capacity of more than 12,000MW, which currently represents 17.5 per cent of the current installed capacity, a considerable portion of the growing demand) and self-use power generation projects also gained a presence, the rapid growth in energy demand – between 2018 and 2032, the increase in electricity demand is expected to entail an additional 66,912MW of generation capacity (requiring investments of approximately US$90 billion), 50 transmission projects representing 1,196km-c, 18 transformation projects representing 3, 716.4MVA, and 39 compensation projects representing 923.2MVAr (requiring investments of approximately US$772 million)) – the limited governmental resources and high debt levels that were being reached, the need to provide clearer rules and opportunities to continue receiving private investment and increase competition in the electricity industry, the lack of scrutiny and transparency of the CFE rates and service conditions, and the lack of reliability and excessive costs of power for industrial processes (which affects the competitiveness of Mexican industries in a global economy), led the Mexican government to include the regulation of the electricity industry in a major package of legal reforms comprised of a Constitutional reform, amendments to 12 existing laws and the promulgation of nine new laws (known as the 'Energy Reform').

The first important change resulting from the Energy Reform is that the oil and gas industry and the electric power industry (previously vertically integrated and exclusively reserved to Pemex and the CFE under the Constitution) are no longer considered strategic activities, and accordingly, all parties are free to participate except in those activities that have been expressly reserved to the state under the new article 27 of the Constitution (namely, nuclear power, power transmission and distribution as a utility service, and the dispatch and operation of Mexico's National Electric System to be controlled by an independent system operator). Pemex and the CFE are no longer considered public instrumentalities of the federal government and were transformed into 'state productive enterprises', a new form of state-owned commercially oriented companies, each managed by a board of directors and subject to corporate governance principles.

Moreover, for the electric power sector, the Energy Reform contemplated the creation of a completely new industry model based on a competitive wholesale electricity market operated by the new independent system operator (ISO), while keeping the state's control and ownership of the National Grid and its exclusivity with respect to power transmission and distribution activities, but with the express possibility of entering into contracts with private parties assisting the Mexican state in the development of such activities (including public-private partnership (PPP) arrangements). The Energy Reform opened the market to merchant power plants that sell their power in bulk, where the ISO dispatches the system on the basis of cost efficiencies, providing market participants with non-discriminatory access to the grid, which is expected to affect the cost of power to the end user, thereby reducing the price differentials that the industrial and residential sectors currently have with respect to other economies. The wholesale electricity market commenced operations back in January 2016, with a short term market, which includes a day ahead market, and a real time market.

The Energy Regulatory Commission (CRE) became the regulator of the midstream and downstream oil and gas industry, and all areas of the electricity industry, which turned the CRE into a powerful and critical part of the Mexican government.

The main legal framework for the electric power industry resulting from the Energy Reform included the following four federal statutes:

- the Law of Coordinated Regulatory Agencies, governing the organisation and authority of both the National Hydrocarbons Commission as upstream regulator, and the CRE for midstream and downstream activities, including Mexico's electricity industry;
- the Electricity Industry Law, which liberalises and provides the new organisation of the electricity industry, from generation to distribution and marketing, including the creation of a wholesale electricity market;
- the Law of the Federal Electricity Commission, which reorganises the existing power utility, the CFE, and defines its new role in the market, as well as its contracting methods; and
- the Geothermal Energy Law providing for the terms of exploitation of geothermal resources.

In parallel, various federal statutes were amended, including the Foreign Investment Law, the PPP Law and government procurement laws, among others.

Initially, no new statutes were enacted to regulate specifically renewable energy sources; however, in December 2015, the Energy Transition Law was enacted (and the previous Law for the Use of Renewable Energies and the Financing of the Energy Transition was repealed). This statute is aimed at promoting the diversification of the energy sources used to generate electricity through the use of renewable energies, and promoting the sustainable utilisation of energy and the reduction of polluting emissions from Mexico's electric power industry.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Commercially speaking, the Mexican electricity sector is still divided into two main areas: the electric power public utility service and the activities in which private participation is allowed. The generation, transmission, distribution and sale of power for public utility service purposes, previously reserved to the federal government through the CFE, is yet controlled by the CFE. However, as one of the most important and first changes resulting from the Energy Reform, the operational control of the National Electric System (SEN, which encompasses the generation, transmission and distribution facilities used in the provision of electric power public utility services) has already been assumed by the National Centre for Energy Control (CENACE), a governmental instrumentality created as a spin-off of the CFE, in charge of operating the SEN and dispatching all of the power output generated by the CFE and private generators interconnected with this system, and provide open access to all market participants.

Private participation, on the other hand, is still concentrated in those activities where private participation was already allowed prior to the Energy Reform, particularly independent power production (IPP) (private generation facilities aimed at supplying all of their capacity and power output to the CFE) and self-supply generation (private generation facilities aimed at supplying power for self-supply purposes to the holder of the relevant self-supply power generation permit and its shareholders).

The total installed capacity in the country in 2017 was over 75,685MW, of which 70.5 per cent corresponds to conventional power plants and 29.5 per cent to clean energy plants. Since 1997, most of the CFE's capacity additions have been successfully installed through IPPs (with an installed generation capacity of more than 13,247MW in 21 years). As a result of the Energy Reform, no additional IPP projects have been launched by the Mexican government, but similar schemes could be implemented in the future.

Nevertheless, private participation has grown consistently in all areas of the electricity industry, now that the wholesale electricity market has initiated operations, allowing private companies to participate in new areas such as power marketing and even public utility services. The new design of the sector, as contemplated in the Electricity Industry Law, includes:

- private and government-owned generators;
- CENACE, as the independent operator of the SEN and the wholesale electricity market;
- government-owned transporters and distributors, in charge of providing public utility transmission and distribution services through the national transmission grid and the general distribution grids, all to be spun off from the CFE;
- private entities participating in transmission and distribution activities as contractors to the government-owned transporters and distributors, under PPP schemes;
- private and government-owned marketers, who may participate in the wholesale market and represent generators and qualified offtakers;
- private and government-owned suppliers, which are load serving entities who hold a permit authorising them to provide power supply services (classified as basic supply service, qualified supply service or last resource supply services);
- qualified offtakers, which are large offtakers entitled to acquire energy directly from the wholesale market, or from a marketer or a supplier; and
- non-qualified offtakers receiving basic supply services from an authorised supplier.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The main permit required to construct and operate generation facilities is the power generation permit granted by the CRE.

In addition, power generation facilities require a federal environmental, safety and health impact authorisation granted by the Ministry of the Environment and Natural Resources (SEMARNAT) and if the use of national waters is involved, a concession or a permit granted by the National Waters Commission (hydroelectric projects with a generation capacity of 30MW or less that do not affect the flow or quality of water do not require a water concession). A critical authorisation in terms of costs and timing, when applicable, is the change of forest land use authorisation, which is granted by SEMARNAT and may be subject to the payment of governmental fees if relevant flora reallocation works are required. Land use and local environmental permits must also be obtained from the state and municipal authorities where the project is located. Likewise, in certain areas of the country, the archaeological clearance should be obtained in a timely manner in order to verify the project's feasibility.

Moreover, the new Electricity Industry Law requires those intending to obtain a generation permit to file with the Ministry of Energy (Sener) a social impact assessment; Sener shall then evaluate such assessment and issue the corresponding resolution and recommendations. The regulations establishing details about the scope and effects of this new requirement were issued on 1 June 2018.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Although power transmission and distribution services are reserved to the state, CENACE, as independent operator of the SEN, is the entity in charge of guarantying open access to the SEN. The general technical requirements to permit the interconnection of generation facilities to the SEN are issued by CENACE and approved by the CRE, who is also the authority in charge of approving the model Interconnection Agreements, approving the charges payable for the studies required to determine the specific infrastructure required to permit each interconnection and other aspects of the interconnection process, and resolving disputes concerning access to the SEN.

In turn, transporters and distributors are obligated to permit, on a non-discriminatory basis, the interconnection of all generation facilities that request such interconnection, whenever the interconnection is technically feasible. For that purpose, CENACE shall instruct the relevant transporter or distributor to enter into the required interconnection agreement, once the characteristics of the specific infrastructure have been determined. The transporter or distributor and the relevant generator shall then enter into the corresponding interconnection agreement within 10 business days following the notification of CENACE's instructions. Upon conclusion of the required infrastructure, a verification unit authorised by the CRE shall certify that the interconnection facilities comply with the characteristics established by CENACE and all applicable standards; in that case, CENACE shall instruct the transporter or distributor to carry out the physical interconnection within the 72 hours following such instruction.

The Market Rules (which are the rules and procedures regulating the operation of the wholesale electricity market) regulate the criteria that CENACE shall use to determine the specific infrastructure requirements, the priority granted to each interconnection request and the procedures to jointly evaluate requests affecting a single region.

Instead of installing the required infrastructure at their cost (either through the execution of the relevant works or the contribution of the required funds), generators may choose to request CENACE or the distributor to include it in the expansion and modernisation programmes of the National Transmission Grid and the General Distribution Grids, as applicable, provided such infrastructure brings specific benefits to the SEN (such benefits being evaluated pursuant to the general criteria issued by the CRE). In that case, the generator may be required to guarantee the development of the proposed generation facility.

If the generator chooses to execute the necessary works or contribute the necessary funds, the generator has the option to acquire the corresponding financial transmission rights, or otherwise receive the proceeds of their sale, pursuant to the Market Rules.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

During 2017 , power in Mexico was produced from these sources in the following proportions:

- 13 per cent conventional thermoelectric;
- 10 per cent hydro;
- 50.21 per cent combined cycle;
- 7 per cent steam, turbogas and internal combustion;
- 9 per cent coal;
- 3 per cent nuclear;
- 3 per cent wind;
- 2 per cent geothermal, solar, distributed generation and others; and
- 3 per cent bioenergy and efficient cogeneration.

For over a decade, the government encouraged combined-cycle gas-fired power plants, making this type of technology a requirement in most of the IPP projects called by the CFE, but in 2010 the CFE began undertaking international public tenders for the award of long-term contracts for renewable energy projects (particularly, wind farm projects), owing to Mexico's climate change laws and policies. These power plants and renewable energy facilities were developed by private companies under the IPP scheme contemplated in the previous legal framework.

The IPP bids were very successful, not only because of the number and diversity of reputable power companies participating in such international tenders, but also because of the rates and competitiveness of the offers. All of the payments under the contracts awarded were financed by resources of the federal government. Key issues affecting IPPs for combined cycle power plants, however, included the lack of infrastructure to supply natural gas to the power plants under development; the increasing scarcity of natural gas in Mexico and the inconsistency between the terms of the natural gas supply services offered by Pemex and the fuel supply terms required to make these projects suitable for project finance purposes. As a result, liquefied natural gas (LNG) supply became an important part of the supply of natural gas in Mexico and the CFE included long-term supply arrangements with LNG suppliers as part of its fuel supply strategy. Likewise, the CFE anchored a large number of natural gas pipeline projects that allow the CFE to have access to several supply sources of gas imported from the United States. As a result of the energy reform, however, the IPP programme has been superseded by the power and energy auctions that CENACE has been organising periodically. Nonetheless, there are no legal restrictions impeding CFE's marketing and supply divisions from entering into long-term contracts with generators in order to anchor large-scale generation projects under schemes that could resemble IPPs.

In 2008, the Law for the Use of Renewable Energies and the Financing of the Energy Transition (the Renewable Energies Law) was enacted, precisely to regulate and promote power generation based on renewable energy sources, and in September 2009 the implementing regulations of the Renewable Energies Law were published. Following the global need to reduce the emission of greenhouse gases and global warming, the Renewable Energies Law was aimed at strengthening the competitiveness of the Mexican energy sector, reducing the use of fossil fuels and promoting the use of renewable energy. Moreover, as part of the CFE's programme to encourage the development of renewable energy projects in Mexico, in 2009 and 2010 it awarded four long-term power purchase agreements to private independent power producers developing wind power projects in Oaxaca, each with a generation capacity of 100MW.

The Mexican authorities developed and implemented the mechanisms necessary to allow renewable energy projects in Mexico to qualify for obtaining of certified emission reductions under the Kyoto–Bonn–Marrakesh Protocol and other similar programmes. Moreover, in June 2012, the General Climate Change Law was enacted, setting forth the basic framework to permit the creation of a domestic market for certified emissions reductions intended to survive the Kyoto Protocol or other mechanisms that may supersede such international instrument. The General Climate Change Law contemplates:

- the creation of the National Environmental and Climate Change Institute, intended to generate and consolidate all technical information for monitoring greenhouse gas emissions and the effects of climate change;
- a Green Fund, administered by the federal government to support and encourage initiatives towards emissions reduction;
- the requirement of implementing economic incentives to foster the development of clean energy sourced facilities, efficient cogeneration and renewable energies;
- the gradual development of a subsidies programme to promote the use of non-fossil fuels, energy efficiency and sustainable public transport; and
- the promotion of electricity generation from clean energy sources, with the expectation of reaching 35 per cent by 2024.

Some of the incentives for renewables that the Mexican government had already implemented under the previous legal framework (including accelerated tax depreciation rates and financing programmes) are still in play, but not all of them have been retained in the new regime.

Instead, the new statutes provide for different incentives, mostly intended to:

- promote open access to transmission and distribution infrastructure, and allow an adequate interaction of firm and intermittent power resources in the grid;
- support the development of new generation capacity through clean energy auctions resulting in long-term and medium-term agreements ('clean energy' includes renewable energy, nuclear and efficient cogeneration); and
- increase the involvement of offtakers in supporting clean energy projects, through the imposition of clean energy requirements reflected in a number of clean energy certificates (CELs) that load-serving entities will be required to obtain on an annual basis.

Pursuant to the Electricity Industry Law and subsequent resolutions by the Ministry of Energy, qualified offtakers and power suppliers are required to acquire CELs for at least 5 per cent of their total energy consumption during 2018, 5.8 per cent for 2019, 7.4 per cent for 2020, 10.9 per cent for 2021 and 13.9 per cent for 2022. CELs are granted to clean energy generators based on their power output, and are part of the products that may be traded in the wholesale electricity market. Moreover, the Energy Reform included a new Geothermal Energy Law, aimed at creating a new framework to develop Mexico's vast geothermal resources, which have been underused for decades, mainly owing to the absence of adequate regulations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Government policy with respect to climate change is mainly focused on, and related to, the incorporation of renewable energy sources on a larger scale. As a result, the federal government has so far promoted the development of renewable energy projects anchored by long-term power purchase agreements awarded through public bidding processes to sell power to the CFE, which in turn is used to provide electric power utility services. The effects of the new mechanisms that are contemplated in the Electricity Industry Law (which consist mainly of requiring qualified offtakers and power suppliers to acquire a certain number of clean energy certificates) are yet to be seen. In line with the promotion activities being developed by the federal government, a number of instruments have been issued to provide developers with details and information to generally assess the availability of renewable resources in Mexico, as well as to identify potential challenges and barriers for each type of technology. Moreover, CENACE is expected to continue launching long-term auctions for the purchase of energy and CELs from renewable energy generators, as a way to further promote renewable energy sources.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Although the Market Rules contain references to electricity storage, the laws and regulation do not provide yet an adequate regulatory framework to promote or support the development of storage solutions. The Ministry of Energy and the CRE are working on developing that legal framework. Specifically, the Energy Transition Strategy to Promote the Use of Clean Technologies and Fuels provides, as part of the government's strategies, the creation of a group of entities supporting the development of new storage technologies.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The generation of nuclear power is exclusively reserved to the Mexican state, through the CFE and therefore no private nuclear power plants are allowed in Mexico. Mexico has only one nuclear power plant, with an installed capacity of 1,610MW, representing 3 per cent of the aggregate installed capacity in Mexico.

While no commitments or formal announcements have been made, the Mexican government has indicated in a number of official documents that it is, at present, evaluating the possibility of increasing the generation of nuclear power as one of the strategies to reduce greenhouse gas emissions.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Public utility transmission services are exclusively reserved to the state; however, the participation of private entities through different types of contracts is allowed in order to finance, install, maintain, administer, operate or expand the infrastructure necessary to provide transmission and distribution of public utility services. The associations and contracts entered into between the Mexican state and private parties for these purposes shall be awarded through competitive processes where any interested party is entitled to participate. The aforementioned processes may be launched either by CFE as the existing transmission entity, or directly by the federal government through SENER. Although the Electricity Industry Law is generally flexible with the type of mechanism that may be implemented to contract the construction and operation of transmission networks from third parties, there are certain minimum standards and requirements to be considered to proceed with the award and execution of the relevant contract. In addition, if the competitive process is launched by CFE, the process shall abide by the general contracting provisions for acquisitions, leases, services and works of CFE and its subsidiaries. The private entity awarded with the contract to develop, construct, maintain and operate transmission infrastructure shall, in addition, enter into an agreement with CENACE, as the entity operating the wholesale electricity market and dispatching the SEN.

The state productive enterprises providing transmission and distribution services will not require any specific permit for that purpose; however, the terms and conditions for the provision of such services are subject to CRE approval. In any case, the construction of transmission lines requires environmental and municipal authorisations, as well as authorisations to cross lands, lakes, rivers or other infrastructure facilities under the jurisdiction of governmental agencies or bodies, in which case rights of way and crossing permits must be obtained. In addition, in the case of transmission or distribution lines for public utility services, a social impact assessment shall be filed with Sener, for approval of the proposed impact mitigation and management measures.

Transmission lines constructed and owned by private power generation, export or import permit-holders may be used to transmit the power generated, exported or imported only by such permit-holders, who are not allowed to provide transmission services to third parties.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

At present, the only common carrier allowed to provide public utility transmission services in Mexico is the CFE (through its separate subsidiary enterprise in charge of transmission services), under terms, conditions and rates approved by the CRE; however, the participation of private entities is expected once certain ongoing projects are awarded, developed, constructed and in operation. Although specific regulations have not yet been issued, it is understood that only those eligible to participate in the wholesale market are eligible to receive power transmission or distribution services, and those power projects that were grandfathered under the Electricity Industry Law.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

In the past, there were no government incentives specifically intended to encourage the expansion of the transmission grid. The CRE made important efforts to anchor grid expansion through open-season procedures for the reservation of transmission capacity, where participants wishing to reserve capacity were required to financially guarantee their commitments with respect to the reserved capacity they requested. These efforts resulted in some successful expansions of the grid; however, in light of the new alternatives and incentives that are now available under the current legal regime, it is unlikely that similar schemes will continue being used to promote further expansion. As mentioned above, the Electricity Industry Law provides new opportunities to allow private parties to assist the CFE in the financing, installation, maintenance, management, operation and expansion of the national transmission grid and the general distribution grids, through contracts entered with transporters and distributors (the PPP scheme may be used for these type of projects). Moreover, pursuant to the recently issued Market Guidelines (which regulate the wholesale electricity market) and related Manuals, financial transmission rights (FTRs) are granted to market participants who pay for the expansion of the transmission and distribution grids. These FTRs, which may also be traded in the wholesale electricity market, have a term of 30 years and are determined based on a calculation of the improvements that the relevant expansion grants to the SEN. The Development Programme of the national Electric System (PRODESEN), includes the planning strategy of the federal government for a period of 14 years. As part of such programme, SENER includes the Expansion and Modernisation Programme of the National Transmission Grid and the General Distribution Grids, which identifies those expansion projects that shall be developed and promoted by the transporters, distributors or by the federal government, as well as the general guidelines and specifications that such projects shall consider.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates payable for power transmission services through the national electric grid and the general distribution grids are approved and supervised by the CRE, under methodologies intended to promote an efficient use of the grids, while allowing the carrier to recover adequate costs incurred in the provision of the services.

As one of the mechanisms to promote renewable energy projects, in April 2010, the CRE issued a methodology specifically applicable to determine transmission rates for projects based on renewable energy sources and efficient cogeneration projects. That methodology was aimed at promoting the use of clean technologies in the generation of power and was based on a post stamp scheme, where a fixed charge (denominated in pesos per kWh) was applicable to each level of transmission services (depending on the applicable voltage) subject to monthly inflation adjustments. However, those preferential rates will remain applicable only to those power projects that were grandfathered under the Electricity Industry Law. All other generators, importers, exporters, suppliers and offtakers contracting transmission

and distribution services shall pay for those services at rates determined pursuant to the new methodology that the CRE approved on 7 September 2015. The new methodology became effective on January 2016 and is expected to remain in effect until December 2018. It is based on a post-stamp concept, with rates subject to adjustment based on inflation, exchange rate variations and the implementation of new transmission infrastructure. On 22 January 2018, CFE's transmission subsidiary published in the Federal Register the latest update on the rates to be applied for the provision of the transmission services from 1 January 2018 to 31 December 2018. These rates are charged by CENACE as part of the settlements performed within the wholesale electricity market and paid by CENACE to CFE.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The CRE is responsible for the development and surveillance of the legal framework regarding reliability matters. As part of these activities, the CRE issues on an annual basis a Reliability Report that informs the SEN's development and level of compliance. CENACE is entrusted by law with the dispatch and control of the SEN pursuant to the dispatch regulations and market rules, but transporters and distributors (which are separate state-owned enterprises) are the entities actually in charge of providing transmission and distribution services. CENACE is now independent from the CFE and other market participants, and is required to comply with the Net Code, which was issued by the CRE to determine the efficiency, quality, reliability, continuity safety and sustainability criteria applicable to the SEN's operation.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Under Mexican law, no private power distribution networks are allowed, except in the case of small electric systems (which are systems that are not interconnected to the national electric grid but provide power utility services). Distribution grids held by state-owned enterprises (mainly CFE subsidiary enterprises) do not require a permit from the CRE), but the terms and conditions of their services are subject to CRE approval; on the other hand, the construction of power distribution grids is subject to the obtainment of environmental permits and local construction permits.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In essence, access to the general distribution grids is regulated the same way as access to the national transmission grid. See question 10.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Not yet. Until now, only a few private entities have obtained power distribution permits, mainly for small delimitated areas, and CFE continues to be the largest, and almost only, distributor. However, distribution services are subject to the principles of open access and universal coverage, which would require expansions, if they are economically feasible. The PRODESEN also includes as part of the expansion projects, some projects related to distribution networks.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The applicable rates are approved by the CRE, under methodologies intended to promote an efficient use of the grids, while allowing the distributor to recover adequate costs incurred in the provision of the services. The CRE issued on 31 January 2015 the rates that CFE's distribution entity should apply during the period running from January 2016 to December 2018. Recently, on 18 January 2018, CFE Distribución published in the Federal Register the latest update on the rates to be applied for the provision of the distribution services from 1 January 2018 to 31 December 2018. These rates are charged by CENACE as part of the settlements performed within the wholesale electricity market and paid by CENACE to CFE in consistency with certain agreements executed between such entities.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The provision of power supply services to end users requires a permit from the CRE. Power supply services are classified as either: basic supply services (supply of power to small consumers), qualified supply services (supply of power to qualified (large) offtakers) and last resource supply services (back-up supply services).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

As a result of the Energy Reform, the CRE is now the agency in charge of issuing and applying the regulation of the rates for basic supply services, and approving the applicable service terms and conditions. The rates published by the CRE considered certain methodology based on the costs of each segment of the electricity industry value chain, as well as a transition process to allow end users to understand the new applicable rates. The Ministry of Finance and Public Credit, Sener and the CFE participated in the creation of the aforementioned methodology. Last resource supply services, on the other hand, are subject to maximum rates, also determined pursuant to the methodologies approved by the CRE.

Qualified supply services are subject to free competition, and are not subject to regulated rates.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Pursuant to the Electricity Industry Law, the prices for all transactions undertaken through the wholesale electricity market shall be determined by CENACE, based on the Market Rules and the offers received from the market participants. Moreover, local marginal prices (LMPs) shall be determined for each node and period, in accordance with the Market Rules, and those prices shall be applicable to the energy transactions on the wholesale electricity market.

Since the wholesale electricity market commenced its operations, CENACE has been reporting hourly LMPs for more than 2,400 nodes, identifying those in each of the three existing systems.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Yes. Suppliers are subject to public and universal service obligations that require them to: offer their services to anyone that requests them, to the extent it is technically feasible, under efficiency, quality, reliability, continuity, safety and sustainability conditions; comply with the provisions of the Electricity Industry Law concerning social impact and sustainable development; contribute to the Electricity Universal Service Fund; and comply with the applicable clean energy and polluting emissions reduction obligations, among others.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The CRE, Sener and Hacienda determine the regulatory policy with respect to the electricity sector. However, there are also a number of consultation councils that have been created, with the participation of representatives of industry stakeholders, to opine on and participate in the determination of regulatory policies affecting the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

The main powers given to the CRE are:

- the granting and enforcement of permits for the generation and supply of power;
- the approval of the terms and conditions for the provision of transmission and distribution services;
- the issuance of the methodology for the calculation of the rates payable for transmission and distribution services, as well as basic supply and last resource supply services; and
- approval of the Market Rules for the operation of wholesale market (except for the initial set of Market Rules, which was issued by Sener).

Sener is in charge of national energy policy and the overall planning for the SEN. Likewise, Sener is in charge of establishing the requirements and procedures related to clean energy certificates, authorising the expansion and modernisation programmes for the national electric grid and the general distribution grids and instruct transporters and distributors to execute the projects contemplated in such programmes, as well as establishing coverage obligations for the supply of power to rural communities and underdeveloped urban areas, and implement the mechanisms to direct funds to those purposes.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The CRE was created by administrative action, but was later strengthened by the promulgation of the Law of the Energy Regulatory Commission, enacted by Congress in 1995. Thereafter, as part of the Energy Reform, the scope of authority and independence of the CRE was enhanced under the Law of Coordinated Regulatory Agencies for the Energy Sector, which now governs the organisation and authority of both the National Hydrocarbons Commission, as upstream regulator, and the CRE for midstream and downstream activities, including Mexico's electric power industry.

The CRE is considered to be a quasi-independent agency of Sener. It is a federal commission with revolving membership of seven commissioners appointed by the President and ratified by the Senate, subject to transparency laws.

In general terms, the CRE's resolutions, directives, norms and permits are independent and do not require the supervision or approval of a third-party.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

CRE decisions are subject to judicial review only through an *amparo* proceeding. This is a special type of court proceeding wherein any person or entity in Mexico (national or foreign) may ask for judicial review in respect of acts or omissions of the government in violation of the petitioner's 'bill of rights'. An *amparo* proceeding is a combination of the common law injunction and writs of certiorari, mandamus and habeas corpus. In this type of *amparo* proceeding, the petitioner typically requests an injunction against certain governmental acts, or a mandamus (a request to the court to command the defendants, namely, the government agencies involved in the challenged act) to redress the government acts in question, because such acts were performed in violation of the petitioner's bill of rights (normally, due process of law violations). Normally, the injunction granted may be either provisional (during the *amparo* proceeding) or definitive (if the final determination of the court is that the relevant act or omission was unconstitutional). However, the CRE's resolutions are not subject to provisional injunctive relief, except in the case of resolutions whereby fines are being imposed.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

An acquisition of private generation or transmission facilities that entails the direct transfer of the assets and the relevant power generation or import permit requires the approval of the CRE and, if the transaction surpasses the monetary thresholds established under the Federal Law of Economic Competition to qualify as a reportable transaction, the approval of the Federal Economic Competition Commission (CoFeCe).

If there is no direct transfer of assets or permits, normally there are no changes to the control rules specifically applicable to businesses in the electricity sector in Mexico; thus, the main authorisation required for a change in control performed at a mezzanine level (ie, a change in control implemented through the acquisition of a participation in the company holding the relevant permit and owning the assets) would be CoFeCe's approval, which is applicable to all economic activities in general. Nevertheless, the CRE may include in its permits and authorisations provisions requiring its approval for any change in control of the permit holder. Owing to its market presence, the CFE's transfers are generally subject to CoFeCe approval.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The current legal framework does not specifically require the authority to approve a transaction that involves a change in control over businesses in the sector. However, as a result of the change in the vehicle's upstream corporate structure some critical permits may need to be amended, which then may be considered as an indirect request for approval of the transaction. The permits that may be subject to amendments are those obtained from the CRE to perform the power or supply activities. For purposes of such amendment, the new owner needs to prove that it satisfies all legal, financial and technical capabilities required to own a project. On the other hand, the approval by the CRE to transfer power generation or transmission assets and the related power generation, supply or import permit is aimed at ensuring that the new permit-holder meets all the requirements established under the applicable laws, from a legal and technical perspective, rather than an analysis of the antitrust or competitive aspects of the transaction. Accordingly, the procedure is similar in essence to that undertaken to grant a power generation, supply or import permit in which the CRE evaluates compliance with the applicable legal requirements to hold the requested permit, the technical qualifications of the facilities' operator in order to assure safety and conformity with the power generation or supply schemes in which private participation is permitted. The Market Manuals include a number of informing and reporting obligations to CENACE that, although not directly related to the change of corporate structure, may be required to be made (eg, changes in the organisational structure notified to CENACE).

The CoFeCe's review of a reportable transaction is, on the other hand, aimed at analysing the possible anticompetitive effects that the transaction may have in the relevant market. Obtaining CoFeCe approval entails the filing of a data-intensive pre-merger notification report to be analysed by the CoFeCe, which normally requests the production and filing of additional information and documentation. Based on its analysis of the transaction, the CoFeCe may approve the transaction as described in the pre-merger notification report, approve the transaction subject to compliance with certain conditions, or prohibit the transaction. Based on the applicable waiting periods, the process

Update and trends

In July 2018, Andres Manuel Lopez Obrador, a left-wing politician and former major of Mexico City, was elected as new President in Mexico. In connection with the electricity sector, Mr Lopez Obrador has anticipated that his administration will endeavour to strengthen and modernise CFE, increasing its generation capacity with particular emphasis pn the modernisation of its hydroelectric generation facilities. Moreover, Mr Lopez Obrador has reiterated the need to increase the development and operation of renewable projects in order to mitigate climate change and comply with Mexico's obligations under the Paris Agreement. For instance, he has proposed the creation of a National Programme for Climate Change Adjustment and has mentioned his support to the transition to a renewable market. No clear guidelines or parameters have been released on how the aforementioned goals will be implemented by Mr Lopez Obrador's government, but no significant changes in the electricity sector are expected within the short term.

For the rest of the energy sector, Mr. Lopez Obrador has anticipated important policy changes for the oil and gas industry, intended to increase the production and refining capabilities of Pemex, and make the country less dependent on imports.

may take up to nine months in complex cases; however, these types of authorisations are normally obtained in approximately two to four months.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CoFeCe is the Mexican federal agency empowered to prevent and prosecute anticompetitive practices in all economic sectors, including the electricity sector. The CoFeCe may impose sanctions on the economic agents involved upon determining the existence of a punishable conduct (such as tie-in sales, bid rigging or other sorts of monopolistic practices) that causes harm to other economic agents vertically or horizontally located.

Since its creation in 1993, the CoFeCe has been gradually developing an understanding of the energy sector and the important role this federal agency has to play in enforcing antitrust laws and regulations in a market that is, by its very nature, monopolistic, particularly with regard to the unparalleled situation of the Mexican energy industry, which involved for decades two vertically integrated monopolies controlled by the government: Pemex, in the oil, gas and basic petrochemicals sectors; and the CFE, in the electricity sector. The restructure of the energy sector calls for a more active role for the CoFeCe, assisting the regulators in the development of new competitive markets. As a result of another constitutional reform in 2013, CoFeCe has become fully independent and has a very broad authority. Moreover, as a result of the Energy Reform, Sener has been vested with very broad powers in order to ensure the separation of activities, with the authority to order the divestiture of assets and companies.

The Electricity Industry Law further provides for CoFeCe with broad authority to sanction price fixing and market manipulation, including the authority to restrict the participation of government entities (eg, CFE entities) acting against competition.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

As in other jurisdictions, Mexican law establishes a list of conducts considered to be anticompetitive per se. Under a 'rule of reason' analysis, however, the CoFeCe is empowered to prosecute and punish any anti-competitive or manipulative conduct aimed at or having the effect of damaging or impeding the competition process or free concurrence in the production, processing, distribution and marketing of products or services in the relevant market, provided the party undertaking such conduct is proven to have substantial power over the relevant market.

Sener and CRE, on the other hand, have been vested with broad powers aimed at assuring competition in the industry.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The main tool is the imposition of substantial fines by the CoFeCe. Also, the CoFeCe may require the relevant economic agent to cease any anti-competitive practice and even order the divestment of assets. Sener has also the same power (except for ordering divestments), and once such penalties have been conclusively established by the CoFeCe or Sener, the relevant injured party may use such resolution for a prima facie case for the payment of actual damages and lost profits before a Mexican court.

End users, on the other hand, are entitled to cumulatively pursue a claim before the Federal Consumer Protection Agency if power suppliers violate the Federal Law of Consumer Protection.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

As a general rule, there are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies except for the CFE, in which direct private participation (national or foreign) is legally barred, since this entity is exclusively controlled by the federal government; However, if the foreign investor intends to acquire more than 49 per cent of the capital of a Mexican company and such company has more than 3.6 billion pesos in assets, the prior approval of the National Commission on Foreign Investments may be required.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There are no specific authorisations for the construction and operation of international interconnections or ties, and therefore, the authorisations are the same as the ones required to develop any transmission line; however, the Grid Code issued by the CRE provides that CENACE shall be the one determining the need to develop or reinforce international asynchronous ties between the SEN and other systems. Moreover, if they facilities cross the US-Mexico border, their construction shall be authorised by the Mexico–US International Boundaries and Waters Commission. Likewise, an authorisation by the Ministry of Finance is required in connection with the metering devices that will be used to determine the amounts of electricity being imported or exported.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There are no cross-border fees applicable to cross-border electricity supply. The export and import of power by private parties requires either a permit or an authorisation by the CRE. The Imports and Exports Manual establishes the rules applicable to Market Participants interested in performing import or export activities in the wholesale electricity market using the existing cross-border ties and the SEN's infrastructure. In terms of the aforementioned Manual, there are two main types of import and export activities, those performed for commercial issues and those required for emergency or reliability issues. Even though, as a general rule, the first-come-first-served principle applies to access to the existing ties, the import and export activities required for emergency or reliability purposes (those activities have been entrusted to CENACE), have certain preference. In addition, the import or export of power requires a special permit granted by the customs authorities in connection with the metering facilities used to measure the imported or exported power. Foreign power plants exclusively connected to the SEN may interconnect and inject power to the SEN under specific interconnection and dispatch rules that are different from those applicable to other foreign power plants.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

As a result of the Energy Reform, the clear separation of activities has become a predominant principle in the laws regulating the electricity industry (and the energy sector in general). The CRE and CoFeCe are required to oversee the adequate development of the market, and are granted with the authority to approve the participation of affiliates in related business activities. Moreover, the CRE has been vested with the authority to issue rules and limitations for transactions among affiliates (particularly transactions between generators and affiliate power marketing companies), and rules regulating the participation of power generators (or their shareholders) in natural gas transportation or storage companies (in the understanding that such participation shall be approved by the CRE and CoFeCe). Those functional separation rules have not yet been issued, but the CRE and CoFeCe are currently working on them, along with the separation rules that will be applicable to the oil and gas midstream sector.

In addition to the foregoing, certain terms for CFE's legal separation were issued by SENER on 11 January 2016. Such separation rules seek to further regulate CFE's participation in the market, as well as to set the guidelines that will apply for all transactions between CFE's subsidiaries and affiliates. A breach of any of the separation rules by CFE's holding entity, a subsidiary or an affiliate, grants SENER the right to impose certain penalties, that will apply in addition to other procedures or sanctions imposed by CoFeCe, if applicable.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Sener, the CRE and CoFeCe have concurrent jurisdiction to enforce and penalise non-compliance on vertical integration rules and other types of affiliated-marketing transactions.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The legislative framework for the electricity sector in the Netherlands is based mainly on European regulations and directives. The European directives contain certain goals that should be achieved by the individual member states; however, each member state is free to decide how such goals can be achieved. The European regulations have a direct effect in the Netherlands, which means that individuals may immediately invoke a European provision at a national or European court. It also has effects the other way around, as individuals have to perform their activities in, for example, the electricity sector in accordance with the provisions of the European legislation.

The first European Directives, specifically the Electricity Directive implemented in 1997, have been amended twice, most recently by the third Electricity Directive 2009. The package of directives is better known as the Third Energy Package Directives and Regulations. The European legislative framework has been the basis for the development of energy law in the Netherlands. With the implementation of the first line of European directives in 1998 in the Dutch Electricity Act, the first energy law in the Netherlands became a fact.

The Electricity Act is still the main source of energy regulation in the Netherlands. The Act was amended by the Act of 12 July 2012 to implement the Third Energy Package Directives and Regulations. The Authority for Consumers and Markets (ACM) has been appointed as the national regulatory authority to supervise compliance with the Act.

In addition to the Electricity Act, subordinate regulation has been developed and implemented to regulate the implementation of the Electricity Act (eg, the network codes). The codes contain provisions regarding tariffs, measuring services, system operation and technical conditions and procedures.

The EU has set targets for renewable energy generation, the reduction of carbon dioxide emissions and measures to halt global warming. By 2020, the Netherlands should generate 14 per cent of its energy from renewable sources, up to 16 per cent in 2023. The Dutch renewable energy goals have become even more ambitious as a result of a successful liability case brought against the state by Dutch citizens and the Urgenda Foundation. The District Court of The Hague decided in its ruling to order the state to increase its target for the reduction of carbon dioxide emissions from 14–17 per cent to 25 per cent in 2020.

In 2017, the Rutte III government presented its energy policy for the next four years in the Coalition Agreement. The main goal of the Dutch government is to achieve a reduction of 49 per cent in carbon dioxide emissions, compared to 1990. In 2013, 47 organisations signed the Agreement on Energy for Sustainable Growth (the 'Energy Agreement'). The signatories of the Agreement have a shared responsibility and commit themselves to achieve four goals (eg, a 14 per cent share of renewable energy in the Netherlands by 2020, and a 16 per cent share by 2023, an average energy efficiency saving of 1.5 per cent per year and creating at least 15,000 additional jobs by 2020, compared to 2013.). In addition to the previous Energy Agreement, the government aims to conclude a Climate Act and Climate Agreement to achieve the long-term goal of a decrease of 95 per cent in carbon dioxide emissions by 2050, (again) compared to 1990. The first proposals for the introduction of a Climate Act and Climate Agreement were presented mid-2018. The Climate Act does, in its current format, not contain any concrete measures to achieve the objective, nor does it contain any sanctions if the target cannot be achieved. The Climate Agreement contains some concrete measures that are very promising at first sight, although the measures have to be further specified before they can be implemented and enforced by other parties.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The market for supply of power has been liberalised since 2004. Since the liberalisation, households, companies and other consumers are entitled to choose their own supplier rather than being supplied by their local supplier. The supply market for companies is fully liberalised; however, a supplier that supplies to households and small consumers is still required to obtain a licence. There are currently over 50 active suppliers of electricity in the Netherlands.

The Electricity Act regulates the production, transportation and supply of electricity. The Dutch electricity grid is divided in the high-voltage grid, which is regulated by the transmission system operator (TSO) TenneT, and the low-voltage distribution grid, which is regulated by distribution system operators (DSOs). Since the introduction of the Unbundling Act in 2008, the management of the grid and the generation, transmission, distribution and sale of power should be carried out by different entities (see questions 9 and 14).

The transmission grid is operated by TenneT, the Dutch TSO. TenneT is the transmission grid operator and manages the high-voltage grid, with a voltage of 110kV or more. The electricity is directly transmitted by TenneT from the source to the regional distributors, who then supply the electricity to households and companies. The low-voltage grids are managed by DSOs. There are currently seven DSOs for electricity in the Netherlands.

Besides managing and maintaining the national grid, TenneT is also responsible for collaborating with regional grid operators and neighbouring countries. Via the NorNED cable and the BritNED cable, interconnections were created in 2008 and 2011 with the transmission grids of Norway and the United Kingdom, respectively. The COBRAcable shall link the national power transmission grid to Denmark and is scheduled to be completed in 2019.

The trading of electricity takes place on several markets, such as the forward market, day-ahead market, intra-day market, balancing market and the imbalance market. The day-ahead market in the Netherlands is organised by power exchange APX. Households, companies and any other party who is connected to the grid in the Netherlands has a Programme Responsibility, which means that any connected party is obliged to secure that their input and output programme is in equilibrium before the start of each 15-minute period. All of the connected parties are obliged to inform the grid operators regarding their production, consumption and any needs for transportation. Based on the received information, the grid operators shall manage the grid. If the actual production, consumption or transportation needs differ from the information provided to the grid operators, imbalances occurs and imbalance penalties shall apply. The amount of such imbalance penalties is determined on the imbalance market, where prices are set for upward as well as downward regulation to safeguard the balance of the grid.

The grid should be in balance. That is, it should have a standard frequency range, at all times. To keep the grid balanced, programme responsible parties are appointed by TenneT. All parties, including small consumers connected to the grid, are in principle responsible to conduct programme responsibility tasks to safeguard the balance. It is crucial for TenneT and the regional grid operators to receive reliable metering data of the production, transmission and consumption to guarantee the standard frequency range. The Electricity Act and System Code set out the obligations for the recognised programme responsible parties, parties that are recognised to perform the programme responsibility. Recognised parties may be the Balance Responsible Parties (BRP) that are published on the website of TenneT. If a connected party does not appoint a BRP, such party may ask TenneT for its own recognition.

TenneT publishes the recognised parties on its website, in a register of recognised parties with balance responsibility and a register of recognised parties with metering responsibility. The BRP is obliged to submit an E-Programme to the TSO on the day prior to delivery. Such E-Programme includes all relevant information to determine how much electricity shall be fed into the grid or consumed from the grid, within 15-minute intervals on the day of delivery. If parties deviate from the E-Programme, electricity shall be purchased from the imbalance market.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

In principle, a permit procedure and a spatial planning procedure should be followed prior to the construction of a generation facility. Various permits and authorisations are required to construct new projects in the Netherlands. Some examples of required permits are an environmental permit, a water permit, a permit in accordance with the Nature Conservancy Act and an authorisation based on the Flora and Fauna Act. In some cases it might be necessary for the (local) authorities to issue a new destination plan or integration plan. Whether the municipality is entitled to determine a new destination plan, or the province or Minister of Economic Affairs and Climate is entitled to set a new integration plan, depends on the expected production of the generation facility to be built.

In order to enhance the development of renewable energy production facilities and achieve the renewable targets, the government adopted the National Coordination Regulation. The National Coordination Regulation combines and simplifies the application for permits and licences. The coordination regulation streamlines the various procedures for permit applications to foresee in a parallel application procedure for permits and consents, which shortens the application periods to an absolute minimum. For smaller generation facilities, either the provinces or the municipalities are the responsible authority to grant the required permits and licences.

In addition to the above, permission from landowners or infrastructure operators can be required if someone else is the owner of the intended location of the generation facility. To apply for a contribution under the Stimulation of Sustainable Energy Production (SDE+) subsidy scheme, it is necessary to obtain a formal declaration from the land owner – at the latest at the moment of filing of the application. Any arrangements in regard to the land, such as the establishment of a right of superficies or a land lease right to secure the ownership of the generation facility, can be finalised after the application for the SDE+ subsidy.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Following the provisions of the Electricity Act, TSOs and DSOs are legally obliged to provide a grid connection to each producer that applies for one. The Electricity Act prescribes that a connection should be provided based upon objective, transparent and non-discriminatory criteria and tariffs taking into account the costs and benefits of different technics for renewable energy and decentral production. Depending on the actual size of the grid connection certain costs apply. Upon the receipt of an application for a grid connection, the relevant grid operator will provide the customer with a detailed and complete overview of the works to be carried out and the related costs to establish such a connection. The grid connection should be realised within a reasonable time, which for renewable energy and connection up to a maximum of 10MVA lapses 18 weeks after the application for a grid connection is submitted, unless this can reasonably not be expected from the grid operator.

If the refusal to connect a customer relates to the production of renewable energy, the grid operator should notify the producer and the regulator of the Electricity Act, the ACM, and provide to the ACM an overview of all relevant measures that the grid operator will undertake to prevent any further refusals to connect for the future.

Alternatively, a producer may also launch a tender to establish a grid connection if the connection is larger than 10MVA. In such case, the Electricity Act does set certain criteria for third parties to establish the grid connection.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The transition to renewable energy in the Netherlands started with the Energy Agreement for Sustainable Growth, which was concluded in 2013 between representatives of (local) governments, nature conservation and environmental organisations, financial institutions and civil-society organisations. The Energy Agreement expresses the aim of the Dutch government to achieve a fully sustainable energy supply system in 2050. To achieve this long-term goal, the parties who have signed the Energy Agreement have committed to achieve some short-term goals, such as an increase in the proportion of energy generated from renewable energy sources to 14 per cent in 2020 and 16 per cent in 2023. For each of the sectors of the renewable energy sources, such as wind and solar, certain targets have been described in the Energy Agreement.

Last year, the Rutte III government presented its energy policy for the next four years in the Coalition Agreement. The main goal of the Dutch government is to achieve a reduction of 49 per cent in carbon dioxide emissions, compared to 1990. In addition to the previous Energy Agreement, the government wishes to conclude a Climate Act and Climate Agreement to achieve the long-term goal of a decrease of 95 per cent in carbon dioxide emissions by 2050, again compared to 1990.

The production of renewable energy is mainly supported via the SDE+ subsidy scheme. The SDE+ subsidy is a feed-in-tariff for producers of renewable energy to compensate them for the non-profitable portion of the costs of renewable energy. Each year there are two rounds of application for SDE+ subsidy divided into three phases, each subject to a maximum phase amount. The project developers who are granted a SDE+ subsidy receive the subsidy for 15 years (except for developers of biomass, biogas and sewage gas projects, who are granted a subsidy for 12 years). As soon as the SDE+ subsidy has been granted, the project developer shall be obliged to ensure that the project is operational within three years after the receipt of the grant from the Dutch Enterprise Agency.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Traditionally, the Netherlands relied for many years on its natural gas production. On a European level, specific targets have been set for 2020 and 2030 to reduce the carbon dioxide emissions, and to halt global warming. The Dutch government however is lagging behind achieving its renewable targets. A lot of renewable energy generation facilities are still to be built. The government supports the development of renewable energy projects through subsidy schemes and simplifying the process of requesting the required licences and authorisations for the construction of renewable energy projects. In addition, the Dutch government aims to introduce support mechanisms for project that reduce carbon dioxide emissions which currently fall outside the SDE+ subsidy scheme, such as carbon capture and storage projects. The government also proposed to close the five remaining coal plants in the Netherlands by 2030.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The current Dutch regulatory framework does not contain any specific provisions relating to energy storage and therefore does not specifically support the investment in storage solutions. Under Dutch regulations, Dutch consumers have the possibility to use the net metering scheme. The consumers can offset an energy surplus of their power production, which will be fed into the grid, with the electricity that it consumes from the electricity supplier. The net metering scheme will be replaced in 2023 by a new support mechanism, the feed-in subsidy, which can be defined as compensation for the electricity which has been fed back into the grid. The consumers are exempted from the payment of the sustainable energy surcharge and energy taxes. Owing to the current format of the net metering scheme, consumers are not encouraged to invest in energy storage as the whole surplus can be set off.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Only 3.5 per cent of the total energy supply in the Netherlands is being produced by nuclear power. The reactor in Borssele is the only active nuclear power plant at the moment.

The rules regarding the use of nuclear materials in the Netherlands are set out in the Nuclear Energy Act 1963. There have not been any major amendments to the act since the implementation in 1963. In 2006, the government had an initiative to update the provisions of the Nuclear Energy Act. The revision would grant more control over the nuclear business to the Ministry of Economic Affairs and Climate. The licences for nuclear plants would be limited to 40 years and reprocessing agreement would be made subject to a licensing system. To date, the initiative and forthcoming proposal to amend the act, has not resulted in a definitive amendment of the act. In the meantime, the Authority for Nuclear Safety and Radiation Protection has been established, which focusses on the development of regulations, licensing systems and supervision to ensure that the highest standards of nuclear safety and radiation protection are being met.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In the Netherlands, one single transmission network operator, TenneT, has been appointed to operate the transmission grid. Based on the provisions of the Electricity Act, it is the responsibility of the TSO to construct, maintain and expand the high-voltage grid of more than 110kV and the cross-border grid. Furthermore, the TSO is obliged to build new grids, secure the transport of electricity in a safe, reliable and efficient manner, expedite the safety of the use of generation facilities and is responsible for the execution of programme responsibility.

The appointment of a grid operator for the transmission system is subject to the consent of the Minister for Economic Affairs and Climate. If the grid operator does not perform its tasks as grid operator to the full satisfaction of the Minister, the Minister is entitled to replace the current grid operator by a different legal entity that shall be able to operate the grid. Under the Electricity Act, several regulatory duties have been granted to the Minister, such as the duty to adopt secondary legislation, such as the Codes, by decree and consent. The Authority for Consumers and Markets shall supervise the appointment of the grid operator and has been designated to define the Tariff Code and subsequent Codes with a technical nature.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Third-party access to the transmission grid is arranged by the provisions of the Electricity Act. One of the statutory duties of the grid operator under the Electricity Act is to provide a connection to the grid to each producer which applies for one. The Electricity Act prescribes that a connection should be provided based upon objective, transparent and non-discriminatory criteria and tariffs taking into account the costs and benefits of different technics for renewable energy and decentral production. The connection shall be realised in accordance with the secondary legislation and the tariffs and conditions set herein by the ACM. In all cases, applications from producers of renewable energy shall have priority compared to other applications (see also question 4).

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

In the past, an application for a connection may be rejected or delayed by the grid operator if the requested connection endangered the technical capacity of the grid. The grid operator was allowed to delay the connection until the necessary amendments to the grid were implemented or the capacity has been created in any other way. The Minister of Economic Affairs described this approach of the TSO as discriminatory towards new producers who would like to enter the grid. As a consequence hereof, the Minister amended the Electricity Act to oblige the grid operator to provide a connection to the grid, if the capacity is not sufficient. When the technical capacity of the grid is endangered, the grid operator shall be obliged to perform congestion management, a method to maintain the stability of the transmission grid in a period during which the power supply exceeds the point that the grid is balanced.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates and terms for the provision of transmission services are set by the ACM. The rates have to be non-discriminatory. Each year, the ACM announces the maximum tariffs for next year. Parties have to pay a connection fee to the TSO to get connected to the grid. Such connection fee is built out of two components, being an initial connection tariff and a periodic connection tariff. On top of the connection fee, parties have to pay a transmission fee that covers the costs of the transmission service. The rates are announced by the ACM in a method decision, in which the formula to calculate the maximum tariffs is explained in further detail. The formula includes an x-factor. The x-factor is determined by the ACM in a separate method decision for a regulatory period of three to five years and reflects the discount owing to efficiency.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

TenneT has been appointed as the Dutch TSO, and is therefore responsible for managing the high-voltage grid. As designated TSO, TenneT does have some additional obligations based on the Electricity Act, such as the transportation and distribution of electricity in an efficient and safeguard manner. Furthermore, the TSO should ensure that connection points are created and maintained with other (international) grids or consumers and should provide system services; that is, to maintain the balance between the supply and demand of electricity.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

DSOs are appointed by the Minister of Economic Affairs and Climate. Access of third parties to DSOs is regulated by and under supervision of the ACM.

The requirement of unbundling under the Electricity Act does not only apply to the TSO but is also applicable for DSOs. The provisions of the Electricity Act form an outlier in the European Union, where in general only a TSO is obliged to unbundle its grid management activities from its entities engaged in the production, trade or supply

of electricity. In accordance with the provisions of the Electricity Act, Nuon and Essent have separated their grid management activities from its production, trade and supply of electricity. However, Eneco and Delta filed a case to argue that the unbundling requirements are, among other grounds, in violation with European law, as the unbundling provisions would be contrary to the principle of free movement of capital. After several stages in court, and after the Supreme Court filed a request for a preliminary ruling at the European Court of Justice, the Supreme Court decided that the provisions regarding unbundling are not contrary to the provisions of European law. Following this court ruling, the unbundling provisions could be enforced by the ACM, which resulted in the unbundling of Eneco and Delta prior to the deadlines as set by ACM of 1 February 2017 and 1 July 2017, respectively.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Equally to the access of third parties to the transmission grid, third-party access to the distribution grid is arranged by the provisions of the Electricity Act. One of the statutory duties of the grid operator under the Electricity Act is to provide a connection to the grid to each producer that applies for one. The Electricity Act prescribes that a connection should be provided based upon objective, transparent and non-discriminatory criteria and tariffs taking into account the cost and benefit of different technics for renewable energy and decentral production. The connection shall be realised in accordance with the secondary legislation and the tariffs and conditions set herein by the ACM. In all cases, applications from producers of renewable energy shall have priority compared to other applications.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The TSO, TenneT, is owned by the Dutch government and shall therefore be encouraged to expand the grid in such way that it will be sufficient to transport all of the electricity generated in the Netherlands. The increase of renewable energy, and therefore the uncertainty about the actual generation at a certain point in time, increases the risk of an imbalance on the grid or a shortage on the capacity of the grid. To ensure that the capacity of the grid suffices, TenneT started to expand the grid, as well onshore and offshore. The TSO started with the construction of an offshore high-voltage grid along the Dutch coast, which is able to transport 3.500MW. The high voltage grid along the coast facilitates the connection between the offshore wind farms and the onshore grid. This expansion is expected to be finished by 2023.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

ACM regulates the rates as the grid operators do not have any competitors in their region. As there is a lack of competition to ensure that the prices are kept at a reasonable level, the ACM publishes maximum tariffs to stimulate the regional grid operators to ensure that electricity is distributed in an efficient manner and at a reasonable price. Before the start of each regulatory period, which may vary between three and five years (to be decided by the ACM), the ACM publishes a method decision that describes the calculation method that will be used to calculate the maximum tariffs that a grid operator is allowed to charge to their customers. During a regulatory period, the ACM will publish an annual tariff decision, which is based on the formula as set out in the method decision. In the tariff decision, the maximum tariff of each individual grid operator is determined, based on the method decision and the Dutch Tariff Code. The method and tariff decisions are published on the website of the ACM. The last method decision covers a period of five years, from 2017 to 2021.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The supply and sale of electricity to small-consumers, with a total maximum transmission value of less than or equal to 3x80A, is subject to a licence and certain terms and conditions as set out in the Electricity Act. The licence to supply to small-consumers is granted by the Minister of Economic Affairs and Climate. The Minister may attach certain conditions to the licence, and is allowed to revoke the licence if the supplier is not able to provide the electricity in a reliable manner to the small-consumer and on reasonable tariffs and terms and conditions. To protect the small-consumers, the conditions of the connection and transport agreement should be transparent, fair and known prior to the conclusion of the agreement. The suppliers are obliged to offer a model contract to the small-consumers. The sale of power to other types of consumers is not subject to a licence.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There are no boundaries to the tariffs for the supply of electricity. The prices of the supply are set by the market parties, based on the resultant of the electricity supply and electricity consumption. The market for electricity suppliers is fully liberalised, and the consumers are free to choose their own supplier. Owing to the competition that is created by liberalisation, energy suppliers have to keep their prices attractive, compared to the other suppliers. Based on the provisions of the Electricity Act, a supplier of electricity to small-consumers is obliged to set reasonable tariffs. The licence holder shall inform the ACM at least once per year regarding any changes to the tariffs.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The rates for sales of wholesale power, either on the day-ahead or intraday markets, are subject to market mechanisms. Owing to the fact that the number of producers and suppliers increased significantly over the past few years, the competition in the market has grown. This is a consequence of, among others, the investments in the development of generation facilities based on renewable energy sources. The increase in suppliers had a price lowering effect on the wholesale market.

The other side of the coin is that owing to an increase in the production of electricity, the costs relating to the management of the grid have risen, as grid enlargements are required to ensure reliable and safe transport of electricity. These additional costs are converted into the rates for the sale of wholesale power. Even price fluctuations on foreign markets, owing to the close link between the German and Dutch grid, may have influence on the rates.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Suppliers of electricity to small-consumers, with a total maximum transmission value of less than or equal to 3x80A, is subject to a licence and certain terms and conditions as set out in the Electricity Act. Based on the provisions of the Electricity Act, the suppliers are obliged to offer a model contract to small-consumers (see question 18).

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Authority for Consumers and Markets is responsible for the regulation of the electricity sector in the Netherlands, together with the Minister of Economic Affairs and Climate. The ACM is appointed as regulator under the Electricity Act, the Gas Act and the Heat Act. In its role as regulator, the ACM is also assigned to determine the Tariff Code

and Technical Codes, which include the maximum tariffs that can be charged by the grid operator for the connection to the grid and transport of electricity.

23 Scope of authority

What is the scope of each regulator's authority?

The Minister of Economic Affairs and Climate defines the energy policy in the Netherlands and is, together with the ACM, responsible for the correct implementation of the Electricity Act, as well as the publication of draft proposal to amend the current provisions of the Electricity Act. Under the Electricity Act, the Minister of Economic Affairs and Climate is obliged to present every four years an energy report that contains at least an analysis of the developments on the national and international electricity market, an analysis of the changes in the use of energy sources, an overview of the goals to be achieved to ensure trustworthy, sustainable, effective transport of energy.

The ACM is appointed as regulator under the Electricity Act. As regulator, the ACM is responsible to supervise whether the TSO, DSO, supplier and other relevant parties within the electricity sector, do comply with the provisions of the Electricity Act. In addition to its role as regulator, the ACM publishes the method decisions and tariff decisions as described in the Tariff Code and is responsible for keeping the Tariff Code and Technical Codes up to date to comply with the most recent developments in the electricity sector. If a party infringes any of the provisions of the Electricity Act, the ACM will have the power to sanction such party by imposing orders and fines.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ACM is an independent public regulatory entity that is responsible for monitoring competition and customer protection. Moreover, the ACM carries out sector-specific supervision, for example the electricity sector. The Minister of Economic Affairs and Climate may provide general guidelines to the ACM, but is not entitled to instruct the ACM on specific cases.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Any and all decisions taken by the ACM or the Minister of Economic Affairs and Climate, based on its responsibilities under the Electricity Act, are subject to the provisions of administrative law. Within six weeks after the decisions of the ACM, a party may object to the decision. If the objection is not accepted, the party may file an appeal against the decision. Such appeal can be filed to the court of Rotterdam. The ultimum remedium of the affected party shall be an appeal to a higher court, which should be filed with the Dutch Trade and Industry Appeals Tribunal.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

In all cases, parties who aim to merge or otherwise change its control, have to take into account the unbundling requirements as set out in the Electricity Act and the provisions of the Competition Act (see question 27). Based on the provisions of the Electricity Act, a grid operator shall not be able to merge with an entity that is engaged in the production, trade or supply of electricity.

In the event of a merger, demerger, dissolution or bankruptcy of the legal entity that is designated as the grid operator by the Minister of Economic Affairs and Climate, such appointment shall automatically lapse. After such event, the Minister shall appoint a new grid operator in accordance with the provisions of the Electricity Act. It is possible to appoint the same legal entity as grid operator, if such legal entity still exists following the occurrence of such event.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The criteria and procedure with respect to the review of a merger is set out in the Dutch Competition Act. To safeguard a certain level of competition in the electricity market, the ACM should be notified in regard to a merger, acquisition or any other transfer of control in the event that certain conditions are met. Merger control of the ACM applies to mergers and acquisitions whereby the combined worldwide turnover of the entities involved is at least €150 million and whereby at least two of the merging entities do separately have an annual turnover of at least €30 million in the Netherlands. The notification is not required if the involved entities only comply with one of the two aforementioned terms.

To file a request, the parties have to, on the website of the ACM, complete a form that focuses on certain aspects of the merger to determine whether a merger could result in the creation or strengthening of a dominant position. The ACM shall review both the notification phase and the application for a licence. The ACM shall decide within four weeks whether an application for a licence can be filed. The entities are allowed to implement the merger only after the ACM decided to grant the licence. Such decision should be made within 13 weeks after the application for a licence has been filed. If the ACM rejects to grant a licence, the involved entities can file a request to the Minister of Economic Affairs and Climate to overrule the ACM and to grant a licence.

In some cases, the European Commission (EC) shall have competence based on the provisions of the EC Merger Regulation. This shall be the case if the entities involved in the merger have realised a combined worldwide turnover exceeding €5 billion and at least two of the merging entities do separately realise an annual turnover within the European Union of at least €250 million.

The administrative fines for infringement with the provisions of the Dutch Competition Act shall be a maximum of €900,000 or a maximum of 10 per cent of the worldwide turnover of the entity, whichever is higher.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Articles 101 and 102 of the Treaty on the Functioning of the European Union are considered to be the cornerstones of competition law in the Netherlands. Individuals may invoke articles 101 and 102 of the Treaty on the Functioning of the European Union at a national or a European court.

As set out in question 27, the ACM is the regulatory authority that is authorised to enforce the provisions of the Dutch Competition Act. Besides the authority to review mergers or acquisitions, the ACM focuses on abuse of a dominant position by an entity and the cartel prohibition as set out in article 6 of the Dutch Competition Act. The cartel prohibition prohibits that agreements are being made between entities that aim or effect to prevent, restrict or distort the competition on the Dutch (electricity) market.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

The cartel prohibition of article 6 of the Dutch Competition Act contains a general prohibition to conclude restrictive agreement or conduct restrictive practices, either of a vertical or a horizontal nature. Article 6 includes certain thresholds. If the involved entities stay under these thresholds (the minimus-exception), the agreements are considered as of minor importance. If the agreements do not involve more than eight companies, and its combined annual turnover is not higher than €5.5

Update and trends

The Netherlands relied for many years on its natural gas production. Owing to (the increasing danger of) earthquakes in the northern provinces of the Netherlands, the Minister of Economic Affairs and Climate decided that the gas generation facilities have to be decommissioned before 2030. Following this decision and to achieve the European targets to generate 14 per cent of its energy from renewable energy, the energy mix in the Netherlands has to change significantly. Climate change and the stimulation of the development of renewable energy generation facilities are important subjects in the Coalition Agreement of the newly formed Dutch government. In addition to the targets set out in the Energy Agreement of 2013, the government aims to conclude a Climate Act and Climate Agreement to achieve the long-term goal of a decrease of 95 per cent in carbon dioxide emissions by 2050. The first proposals for the introduction of a Climate Act and Climate Agreement were presented mid-2018. The proposals are still to be finalised, but the targets and first drafts of the measurement to be taken are very promising.

The expectation is that there will be a huge rise in the development of solar photovoltaics (PV), as many solar PV projects have been granted with a SDE+ subsidy in the 2017 spring round. These projects have to be constructed and connected to the grid within three years after the SDE+ subsidy has been granted to the project companies. Not only had more project companies than expected applied for SDE+ subsidies, but the capacity of the projects that applied for the subsidy also increased. More large ground-based and rooftop solar projects are therefore expected to be realised within the upcoming years.

The first subsidy-free offshore wind farm bids were awarded in 2017. A consortium of Vattenfall, Statoil, Innogy and WitWind was awarded in a tender to develop wind farm Holland Kust Zuid without any public subsidy. The wind farm is to be built by 2022, and will be the first zero subsidy offshore wind farm in the world. (As of mid-2017, no subsidy tenders had been awarded in Germany, but the commissioning of wind farms is planned for 2024 or 2025, so after the scheduled commissioning date of Hollandse Kust Zuid.)

The energy transition is not only a hot topic on a governmental level, but there is also an increasing interest from corporates to provide an alternative way for project developers to attract cheaper finance and meet its bankability requirements. During the development phase of the renewable energy project, the project company will not gain any revenues. As project finance has to be concluded before the start of construction, projects can be made more bankable-ready by concluding power purchase agreements (PPAs) with corporates or utilities. The power purchase agreement secures steady revenues for a project to repay its debts and may be the difference between a bankable and a non-bankable project. Not only onshore wind projects, but also solar and other renewable energy projects can take advantage of such PPA structures.

million (supply agreements) or €1.1 million (for other agreements), the cartel prohibition does not apply. If an agreement is concerned to be restrictive for the competition in the market, the agreement will partly or wholly be null and void.

Contrary to the articles 101 and 102 of the Treaty on the Functioning of the European Union, article 24 of the Dutch Competition Act does not specify any categories which are considered to be an abuse of a dominant position.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The ACM can sanction each entity that infringes any of the provisions of the Competition Act with a maximum fine of €900,000 or 10 per cent of the worldwide turnover of the entity, whichever is higher. For infringements of the cartel prohibition, the maximum fine will be multiplied by the duration of the cartel, which is subject to a maximum of four years. In case of recidivism within five years, the maximum fine can be doubled.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no limitations or restrictions in the Electricity Act for the acquisition of interests in the electricity sector by foreign companies (other than the group prohibition clause).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The interconnector operator is appointed by the Minister of Economic Affairs and Climate, under the same terms and conditions as the appointment of a TSO or DSO. It is not required that the interconnector operator is a public company or private company with limited liability. The aim of the European policy is to increase the interconnection capacity to create one single integrated electricity market across Europe. A new interconnection with Denmark is currently under construction, and the existing interconnections with Belgium, Germany, Norway and the United Kingdom are being expanded and optimised.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

In addition to its role as TSO, TenneT is also responsible for the operation and realisation of cross-border interconnections. TenneT is responsible for the publication of transmission data on imports and exports. The terms and conditions for such publication are set out in the Dutch Grid Code. The capacity of import and export depends on the amount of electricity that can be transmitted safely. The cooperation between the TSOs on a European level improves the security of the supply and enhances the stability of the grid. Management of the interconnections includes the responsibility to transfer the capacity in a non-discriminatory and transparent manner to interested market parties, as prescribed by EC Electricity Regulations, the Electricity Act and the Grid Code. The capacity of the interconnections is being made available to market parties through an auction, the TSO auction. The Joint Allocation Office (JAO) is a joint service company that consists of 22 TSOs in 19 countries, and facilitates the yearly, monthly and daily auctions of transmission rights.

The funds received by TenneT in its role as TSO are allocated by a foundation called the Foundation for the Management of Allocated Funds from the National High-Voltage Grid. The funds are received as a result of imbalance settlements and market-based allocation of cross-border electricity transfers. The revenues resulting from the allocation of interconnections shall be used to ensure that the actual availability of the allocated capacity can be guaranteed and to maintain or increase the capacity of old and new interconnections. Any surplus revenues shall be used to reduce the current tariffs as set out in the Tariff Code for the connection to the grid and the transport of electricity.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The current group prohibition-clause in the Electricity Act requires that the grid operator of the high-voltage grid should separate its grid management entities from its production, trade and supply entities. This legal requirement has been implemented by the Unbundling Act (Wet onafhankelijk netbeheer), which entered into force in 2008.

The implementation of the Unbundling Act removes the incentive and possibility to discriminate the access of third parties to the grid. Grid operators that also have an interest in the supply of electricity may have the incentive (and the ability) to offer preferential treatment to a related supplier, which results in discrimination of other suppliers.

To avoid such discrimination, the group prohibition-clause has been implemented in the Electricity Act.

The group prohibition-clause does not only apply to TSOs, but also to DSOs, which makes this group prohibition-clause more restrictive than the unbundling requirements as set out in the European directives.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The provisions of the Unbundling Act are enforced by the ACM. As set out in question 14, following a ruling of the Supreme Court, the ACM ordered Eneco and Delta to unbundle its grid management activities from its non-DSO activities prior to 1 February 2017 and 1 July 2017, respectively.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The National Electric Power Policy 2001 (the Policy) laid out the policy framework for the reform and liberalisation of the Nigerian Electricity Supply Industry (NESI). The critical goal of the Policy is to ensure that the NESI meets current and future electricity demand in Nigeria in an efficient and economically viable manner. The Policy provided the framework for the restructuring of the erstwhile state-owned utility which led to its unbundling into several successor companies.

The Electric Power Sector Reform Act (the Act) was enacted in 2005 to provide the legal framework for the achievement of the reform objectives of the Policy. It was enacted with a view to, in the words of the Policy, 'create efficient market structures, within clear regulatory frameworks, that encourage more competitive markets for electricity generation and sales (marketing), which, at the same time, are able to attract private investors and ensure economically sound development of the system'.

The Act essentially provides for the following, among others:

- the vertical unbundling of the Nigeria Electric Power Authority along functional lines of generation, transmission and distribution and retailing and the incorporation of the various business segments as successor companies; and a method for the transfer of assets, liabilities and personnel to these successor companies, which are to be subsequently privatised.;
- the trading arrangements that will allow for competition in the wholesale electricity market. The IPPs are also allowed to compete with distributors for the patronage of large consumers;
- the establishment of the Nigerian Electricity Regulatory Commission (NERC) as a transparent and an independent regulator of the sector and a definition of its functions and powers;
- the establishment of a regulatory regime including the granting of licences to the successor companies and new entrants in electricity undertakings of generation, transmission marketing and distribution companies, the determination of tariffs of regulated activities and the prevention of abuse of market power. Economic regulation of the power market will be applied independently by NERC. In the wholesale market the focus of the regulation will be to prevent abuse of market power. In the retail market, the focus will be on balancing the interests of successor companies and IPPs as suppliers with the interests of customers; and
- the establishment of the Rural Electrification Agency to provide rural communities with access to electricity; the establishment of the Rural Electrification Fund to promote, support and provide rural electrification programmes through public and private sector participation; and the establishment of the Power Consumer Assistance Fund to subsidise underprivileged power consumers.

The Act conferred on NERC the powers to make regulations necessary to give effect to the provisions of the Act. Some key regulations that have been made are:

- Regulations for the Investment in Electricity Networks 2015 – provides for the procedure for investing in electricity networks in Nigeria. The objectives of these Regulations are mainly to create strong incentives to encourage the Transmission Company of Nigeria (TCN) and the distribution companies (DisCos) to make appropriate and sustainable investments in capacity expansion;
- Nigerian Electricity Supply and Installation Standards Regulations 2015 – these are a compendium of standards for the design, construction and commissioning of electrical infrastructure in the Nigerian Electricity Supply Industry;
- Regulations on National Content Development for the Power Sector 2014 – the objective of the Regulations is to promote the deliberate utilisation of Nigerian human and material resources, goods, works and services in the industry as well as building capabilities in Nigeria to support increased investment in the industry;
- NERC Regulation for the Procurement of Generation Capacity 2014 – provides for the process to be used by a buyer in procuring additional electricity generation capacity;
- NERC (Embedded Generation) Regulation 2012 – provides for a legal and regulatory framework for the issuance of licences to qualified operators to engage in embedded generation of electricity in Nigeria, and to ensure compliance with set standards;
- NERC (Independent Electricity Distribution Networks) Regulations 2012 – these provide a legal and regulatory framework for the issuance of licences to qualified operators to engage in electricity distribution, independent of the already existing successor distribution companies, and to ensure compliance with set standards;
- NERC Permit for Captive Power Generation Regulation 2008 – provides for a legal and regulatory framework for the granting of permits to qualified operators to engage in captive power generation in Nigeria, and to ensure compliance with set standards;
- NERC Mini Grid Regulation 2016 – governs the development of integrated electricity generation and distribution supply systems of under 1MW either in isolation from the DisCos or interconnected to the DisCos' existing network infrastructure;
- Nigerian Electricity Smart Metering Regulation 2015 – this is a technical regulation that applies to all licensees who deploy smart metering; it sets out the requirements for a smart metering system in the Nigerian Electricity Supply Industry;
- Feed in Tariff for Renewable Energy Sourced Electricity in Nigeria 2015 – this is the regulation that gauges the tariff for renewable energy and permits the energy capacity to be bought by the offtaker and placed on the grid;
- NERC Metering Asset Provider (MAP) Regulations 2018 – provides for a new class of market participants (meter asset providers) who are charged with the responsibility of providing metering services. The objective of the Regulations is to close the national metering gap through accelerated meter roll out to customers, eliminate estimated billing and attract private investment in the meter services provision in the Nigerian Electricity Supply Industry (NESI) among others; and
- NERC Eligible Customer Regulations 2017 – outlines the terms that would guide the direct purchase of electricity by end-users from power generation companies.

The Market Rules 2009 were approved by the president in 2009 pursuant to section 26(2) of the Act. The Rules provide a framework for an efficient, competitive, transparent and wholesale electricity market in Nigeria. They set out the responsibilities of the market operator, system

operator, transmission service provider (all housed within the TCN), bulk trader and other participants in the market in relation to trading, coordination, dispatch and contract nomination, pricing of imbalances and ancillary services, metering, settlements and payments.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

NERC as the market regulator issues each of the market participants a licence in accordance with its activities. Electric power produced by the generation companies (GenCos) is transmitted to the DisCos through the transmission network of TCN and delivered to the consumers.

GenCos can sell electricity to the bulk trader, Nigeria Bulk Electricity Trading Company (NBET), DisCos and eligible customers. For on-grid electric power and ancillary services, NBET enters a power purchase agreement (PPA) for bulk procurement from the GenCos and resale to the DisCos through a vesting contract. Transmission from the GenCos to the DisCos is done by TCN who executes grid connection agreements with GenCos and transmission use of systems agreements with DisCos. Upon distribution, payment is made by consumers and DisCos remit to the market operator for further distribution along the value chain to the market participants.

Generation

Prior to privatisation of the sector, generation of electricity was controlled mainly by the government. In this regard, the government owned and managed three hydropower plants and seven thermal power generating stations. The need to ramp up generation capacity led to the government's quest for privatisation of its assets, which were unbundled as successor generation companies. Under the National Integrated Power Project (NIPP) programme, the government also constructed 10 thermal power plants. The government commenced the privatisation of the NIPP plants in 2013. Private investors are also encouraged to apply for generation licences under the Act and set up independent power plants with guaranteed offtake by NBET for on-grid power subject to execution of a PPA.

Transmission

The transmission network is under the control of the government-owned entity TCN. It is one of the successor companies that arose from the Act resulting in the unbundling of the state utility provider. TCN has licences for the following activities: as a transmission service provider (TSP) for the maintenance and operation of the transmission infrastructure; as a system operator (SO) for system operations and administration of the wholesale electricity market under its functions; and as a market operator (MO).

Distribution

The unbundling of the government-owned utility provider led to the formation of 11 DisCos for its distribution assets and liabilities. Each DisCo may hold a dual licence for distribution and trading; the distribution licence entitles it to construct, operate and maintain a distribution network for connection of consumers, and installation and maintenance of meters, among others; the trading licence enables it to procure electric power from another trading licensee and, with the permission of NERC, from other sources.

Bulk trader

The Act provides for the licencing of a bulk trader (NBET) for the bulk procurement of electric power and ancillary services through a PPA from GenCos and the resale to DisCos by vesting contracts. NBET was created primarily for payment guarantee assurance to GenCos for the bulk procurement of electric power and ancillary services. It also ensures through the vesting contracts that a minimum capacity from the available MW is provided to each of the DisCos.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

To construct and operate a generation facility, the developer must apply to obtain a generation licence from NERC. In addition to the licence, the following authorisations are required:

- certificate of incorporation and memorandum and articles of the company duly registered in Nigeria;
- evidence of registered title for the land acquired for the project;
- environmental impact assessment performed by the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the relevant state agency where the plant is located;
- environmental and social impact assessment, especially for projects seeking funding from international lenders and DFIs;
- development or building permit for the construction of the power project – this is issued by the relevant state building control agency in the state where the power plant is being constructed; other state-specific approvals may be required depending on the location of the power plant;
- Evacuation Certificate from the TCN for on-grid projects;
- Permit for Storage of Chemicals and Petroleum Products issued by NESREA;
- Permit for Disposal of Petrochemical Effluent issued by NESREA;
- Permit for Waste Disposal issued by NESREA;
- Air Quality Permit issued by NESREA;
- Ground Water Licence issued by NESREA;
- water licence for hydroelectric projects;
- permit to survey pipelines route for thermal generation facilities granted by the Minster of Petroleum Resources and processed by the Department of Petroleum Resources;
- oil pipeline licence for thermal generation facilities granted by the Minster of Petroleum Resources and processed by the Department of Petroleum Resources;
- business permit (where developer has foreign participation) issued by the Federal Ministry of Interior;
- pioneer status certificate and foreign investment approvals issued by the Nigerian Investment Promotion Commission where the project involves foreign participation;
- financing agreements or letters of intent to fund the project from a reputable bank;
- work permit and expatriate quota from the Nigerian Immigration Service where expatriates will be employed;
- certificate of capital importation from an approved finance institution (where the investors are non-Nigerians) to satisfy NERC that the applicant is capable of meeting the project's capital requirements;
- certificate from the National Office for Technology Acquisition and Promotion, certifying registration in respect of transfer of technology contracts;
- compliance with the Market Rules, Grid Code, Metering Code, health and safety regulations and other regulatory instruments issued by NERC; and
- annual compliance audits on the activities of the generation company and reports to be filed with NERC.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

GenCos connect to the transmission grid subject to the Grid Code. The Code contains the day-to-day management operating procedures and principles governing the development, maintenance and operation of an effective, well coordinated and economic transmission system for the electricity sector.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The government sees renewable energy as an important part of diversifying the country's energy mix. A number of policies have been developed over the years which have enhanced government's pursuit of renewable energy as an additional means to solve the electricity challenge the country faces. Some of the policies that have been passed by the government to encourage alternative energy sources such as renewables are:

- Electric Power Sector Reform Act 2005 – the Act provides the legal and regulatory framework for the sector. It is the principal law for the regulation of the sector;
- Roadmap for Power Sector Reform 2013 – the Roadmap's targets for renewable energy technologies which contribute to the overall target to achieve 18 per cent of electricity generated from renewables by 2025 and 20 per cent by 2030 are: small-hydro: 2,000MW (600MW in 2015); solar photovoltaics: 500MW; biomass-based power plants: 400MW (50MW in 2015); wind: 40MW and electrification level of 75 per cent in 2025 (60 per cent in 2015);
- National Renewable Energy and Energy Efficiency Policy – the policy consolidates the objectives of previous policies. The policy was developed by the Federal Ministry of Power in 2013 and 2014 and was approved by the Federal Executive Council in 2015 with an objective to develop power generation through renewables and energy efficiency capacity by 2020;
- National Renewable Energy Action Plan – the National Action Plan presents the expected development and expansion of renewable energies in Nigeria in order to achieve the national target under the Economic Community of West African States (ECOWAS) Renewable Energy Policy, thus Nigeria's contribution to the overall ECOWAS target of 23 per cent and 31 per cent renewable energy in 2020 and 2030 respectively. It contains existing and currently planned measures with which the national target is to be achieved; and
- Rural Electrification Strategy and Implementation Plan – this is a follow-up to the Nigerian Rural Electrification Policy. The primary objective is to expand access to electricity as rapidly as possible in a cost-effective manner through the use of grid and off-grid approaches from renewable and thermal sources in rural areas.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Nigeria is a signatory to the Kyoto protocol and has in place a National Policy on Climate Change and Response Strategy for implementing climate change activities in the country. The Policy is a framework for tackling environmental challenges occasioned by global changes in climate. It is expected that this Policy will enhance Nigeria's abilities to meet her obligations towards reduction of emission of noxious substances in the environment. The policy envisages a shift away from fossil fuel or coal-generated energy towards renewables as the resources to meet the local growing energy demand using clean technologies.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There are no specific regulations to support electricity storage, including research and development of storage solutions. However, the regulatory framework does not discourage it.

Several pilot projects, surveys and studies have been undertaken under the supervision of the Energy Commission of Nigeria (ECN), which has registered five energy research centres. Centres dedicated to renewable energy and energy efficiency include:

- National Centre for Energy Research and Development at the University of Nigeria, Nsukka (responsible for research in solar and renewable energy);
- Sokoto Energy Research Centre at Usman Danfodiyo University, Sokoto (also responsible for research in solar and renewable energy); and
- National Centre for Hydropower Research and Development at the University of Ilorin (responsible for research in hydropower).

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The government has taken steps to encourage nuclear power plants in Nigeria. Towards this, the Nigeria Atomic Energy Commission (NAEC), which was initially created in 1976, was reactivated in 2006 with the mandate to develop the framework and technical pathway to explore, exploit and harness atomic energy for peaceful application in all ramifications for the socio-economic development of Nigeria. The objective of NAEC is to fast-track and act as a catalyst in the process of development and deployment of nuclear power plants for electricity generation.

The Commission has also developed a National Nuclear Power Development Program. Through the Program the Commission developed a National Nuclear Power Road Map which was adopted by the Federal Executive Council. The Road Map entails generating at least 1,000MW by 2017 and 4,000MW by 2027.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

To construct and operate a transmission network, a transmission licence is required from NERC. TCN, which is a wholly government-owned company, is the only entity that has a transmission licence and is empowered to provide transmission services in Nigeria. Other authorisations include:

- approval from the National Environmental Standards Regulations Enforcement Agency (NESREA);
- environmental impact assessment certificate; and
- authorisations from the Federal Ministry of Land, Housing and Urban Development, including for right of way.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Transmission services can be obtained by users who according to the Grid Code are any persons or a party using the transmission system as agreed and permitted by the TSP and NBET. Users who are eligible to obtain transmission services must make an application to the TSP for connection to a new substation or an existing one. This is done through an application form that contains, among other things:

- description of plant or apparatus to be connected to the transmission system;
- confirmation that the user's plant and apparatus at the connection point will meet the required technical standards in the Grid Code and will be agreed with the TSP where appropriate;
- confirmation that the user's plant, apparatus and procedures will meet the safety provisions in the Grid Code;
- technical data specifying the load characteristics and other data of the plant or apparatus;
- the desired connection date and operational date of the proposed user's development; and
- a proposed commissioning schedule, including commissioning tests, for the final approval of the system operator and TSP.

The underpinning agreements for obtaining transmission services are:

- grid connection agreement: this defines how a user is to be connected to the transmission system;
- ancillary services agreement: this is for the provision of defined ancillary services by the GenCo to TCN; and
- transmission use of system (TUOS) agreement: this sets out the commercial terms for the transmission and delivery of electricity by TCN from the generation facility to the distribution system.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

TCN is responsible for the transmission grid. Currently, the government provides funds for the development and expansion of the grid. Owing to the enormous costs involved in grid expansion and the competing demands on funds from the government, TCN is on a fundraising drive from development finance institutions to enable a fast-track expansion of the grid system. It developed a five-year transmission system expansion plan that covers the period 2016–2022 and the plan is meant to bring wheeling capacity of 5,300MW to 20,000MW by 2022 and to urgently address the shortfall in transmission.

The government recently launched the power sector recovery progamme. One of the expected outcomes from the intervention programme is the stability and expansion of the transmission grid. Under the Nigerian Electricity Transmission Project, the World Bank approved in February 2018 funds for the rehabilitation and upgrading of electricity transmission substations and lines in Nigeria.

Tax relief in the form of import duty exemption is granted by the government to contractors importing equipment for the expansion of the grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

NERC determines the rates for the provision of transmission services. As part of this role, NERC introduced the multi-year tariff order (MYTO) for the determination of the cost cf electricity transmission the payment of institutional charges. The tariff order is based on a set of principles designed to provide tariffs for each sector in the Nigerian Electricity Supply Industry. The MYTO for transmission is applied to transmission services.

The MYTO incentivises and assumes a steady continuous reduction in transmission and distribution or retail losses. Revenue earned by operators is made dependent on achieving these performance improvements. NERC establishes the regulated TUOS charge to be paid to the TCN by DisCos in the transmission of electric power from GenCos to the DisCos.

TCN determines the terms for the provision of the services. It has developed a standard form that also sets out the obligations of GenCos, DisCos and TCN in relation to the operation and maintenance of the connection to the grid. These terms must comply with the Grid Code, Market Rules and NERC regulations.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The TCN is responsible for the transmission grid and houses three operations; TSPs, SOs and MOs.

The TSP is responsible for the construction, operation and maintenance of transmission facilities to secure reliable evacuation of power and new interconnection points.

The SO is focused on procurement and scheduling of ancillary services and system planning, administration and grid discipline. Its responsibilities, among others, include implementing and enforcing the Grid Code and Market Rules, and drafting and implementation of operating procedures as may be required for the proper functioning of the SO-controlled grid and market operations.

The MO is charged with the responsibility of administering the wholesale electricity market, plus promoting efficiency and, where possible, competition.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

To construct and operate a distribution network, the following authorisations are required:

- distribution licence issued by NERC;
- environmental impact assessment certificate;
- building or development plan approval;
- governor's consent for use of the project site;
- compliance with the requirements of the Distribution Code issued by NERC;
- compliance with the Market Rules, Grid Code, Metering Code, health and safety regulations and other regulatory instruments issued by NERC;
- annual compliance audits on the activities of the DisCo and reports to be filed with NERC; and
- regular environmental audits based on directives from the NESREA.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

End-use consumers, eligible customers, embedded generators and Embedded Independent Electricity Distribution Network (IEDN) operators can obtain access to the distribution network if they meet the requirements. Each user must comply with the provisions of the Distribution Code.

The procedure for end-use consumers who are customers eligible to obtain access to the distribution network under the Connection and Disconnection Procedures for Electricity Services, 2007 is detailed below. Customers are defined as persons or organisations who are supplied with electricity by the distribution licensee for personal use.

For customers to obtain access, they need to:

- submit an application for connection to the distribution network and electricity supply in a format provided by the DisCo and approved by NERC;
- provide a declaration of supply requirements completed by an appropriate authority in a format provided by the DIsCo and approved by NERC;
- provide acceptable identification and necessary information to enable electricity supply to the address; and
- pay the capital contribution, connection charge and security deposit requested by the DisCo and approved by NERC.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The 11 DisCos were privatised through a 60 per cent share sale and are under private sector management, with the exception of Yola DisCo, where the core investor had declared force majeure on the basis of the insurgency in parts of northern Nigeria under its network. Currently, most of the DisCos are faced with huge operational challenges owing to poor revenue arising from high technical, commercial and collection losses as well as constraints in funding for capital projects. The DisCos opine that the lack of a cost-reflective tariff and legacy debts have made difficult the task of carrying out necessary capital projects. To address these as well as other issues in the value chain, the government launched the Power Sector Recovery Program in conjunction with major development finance institutions so as to raise the necessary funding and devise processes to be made available as well as timely process flow. The intervention of the government through the NIPP has also led to the expansion of the distribution network. The distribution projects under the NIPP cover upgrades and expansion of the 11 distribution zones across the country.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

NERC determines the rates for the provision of distribution services based on the projections given by each DisCo for the reduction of its aggregate technical, commercial and collection losses. The Act empowers NERC to establish methodologies for regulating electricity prices. To regulate the tariff for distribution NERC introduced the MYTO for the determination of the cost of electricity sold by distribution or retail companies. The tariff design in place for DisCos is intended to ensure that a distinction is made among the users with regards to electricity pricing and is dependent on the customer's class, including residential, commercial, industrial, special class and streetlights. Each DisCo's tariff reflects its uniqueness in terms of cost, location and customer profile.

The building blocks approach was used as a regulatory method to set tariff. It is simply a way of bringing together all the industry's cost in a consistent accounting framework. The MYTO methodology combines the positive attributes of regulating the rate of return and a price cap, which changes by region and type of electricity customer. The regulators factor three modules into the calculation: the allowed return on investment, the allowed return on capital, and efficient operating costs and overheads. Rates differ because costs factored into the prices are assessed individually for power generation, transmission, distribution and retail.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

In the Nigerian Electricity Supply Industry, a licence issued by NERC is required for the sale of power. Trading licensees such as the DisCos and NBET require their licences for the sale of power. To obtain the licence an application is made to NERC:

- in a prescribed form and manner;
- accompanied by the prescribed fee; and
- accompanied by such information and documentation as NERC may prescribe.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The tariff that governs the sale of power by the distribution companies is the MYTO.

The feed-in tariff for renewable energy sourced electricity provides the tariff framework for renewables at a threshold.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

NERC determines the rates for wholesale power using the MYTO methodology. The MYTO is a calculation tool set up for the sole purpose of determining rates in the electricity sector, and consists of cost assumptions (ie, installed capacity, capital cost, O & M cost (fixed), O & M cost (variable), capacity factor, auxiliary requirement, economic life, construction period, sent out efficiency, availability and fuel cost). In 2008, at MYTO's first application in Nigeria, it was restructured to meet the electricity market; domestic parameters were also factored into it before arriving at the current standard it is at today. Currently MYTO 2015 is structured such that a major review is carried out every five years and minor reviews of the indices are expected to be done every six months.

Stakeholder consultation initiated by NERC on the review of the MYTO methodology is ongoing.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The unbundling of the electric power sector under the Act was intended to encourage private sector investment. Currently there are no public service obligations on the electricity utility companies although at the transition stage NBET, through the vesting contract, ensures that each DisCo gets a minimum MW from the available capacity procured from the GenCos.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

NERC is an independent regulatory agency with authority to regulate the electric power sector. Other authorities that determine regulatory policies in the sector include:

- Federal Ministry of Power, Works and Housing;
- Nigerian Electricity Management Services Authority; and
- ECN.

23 Scope of authority

What is the scope of each regulator's authority?

Nigerian Electricity Regulatory Commission

As a sector regulator NERC undertakes technical and economic regulation of the power sector, such as: tariff regulation and fair pricing; promoting competition and private sector participation; establishing or approving appropriate operating codes and standards regulation; licencing and regulating entities engaged in generation, transmission, distribution and trading; approval of amendments to the Market Rules and monitoring the operation of the electricity market. The Act is the major instrument of regulatory control adopted by NERC in carrying out its regulatory functions.

Federal Ministry of Power, Works and Housing

The Federal Ministry of Power, Works and Housing (FMOPWH) provides general direction to other agencies involved in the power sector. The key objective of the Ministry is to develop and facilitate the implementation of broad policies and programmes for the provision of adequate and reliable power supply from all sources of energy in the country.

Nigerian Electricity Management Services Authority

The Nigerian Electricity Management Services Authority (NEMSA) regulates and enforces technical standards in the power sector. It inspects, tests and certifies electrical materials, equipment, power systems and electrical installations of the Nigerian power industry. Installations are tested for their adherence to technical standards and regulations.

Furthermore, NEMSA provides advanced training for technicians as well as licencing of technical personnel.

Energy Commission of Nigeria

The ECN was established with the statutory mandate of the strategic planning and coordination of national policies in the field of energy. ECN is empowered to carry out overall energy sector planning and policy implementation and promote the diversification of energy resources through the development and optimal utilisation of all resources, including the introduction of new and alternative energy resources. ECN, among other roles: serves as a centre for gathering and dissemination of information relating to national policy in the field of energy; inquires into and advises the government of the federation or the state on adequate funding of the energy sector including research and development, production and distribution; and monitors the performance of the energy sector in the execution of government policies on energy.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

NERC was established as an independent regulator of the power sector under the provisions of the Act. The Act is designed in such a manner so as to reduce the influence and interference of the federal government

in the regulation of the power sector. To ensure regulatory certainty, it provides: defined regulatory functions and objects of NERC which are backed by law; a clear process of appointment and removal of commissioners and chairmen of NERC outside of the normal civil service appointments; isolation from civil service rules, including in relation to reporting structure, compensation structure and retirement benefits of commissioners and staff; and autonomous funding with direct appropriations by the National Assembly, outside of appropriations to the Ministry of Power.

Despite the above provisions of the Act, NERC still has some form of dependence on the government. Section 51 of the Act requires NERC to submit its annual budget with proposed expenditure to the Minister of Power, while section 28 provides for the issuance of further directives by the Minister under some circumstances for certain competition transition charges to be made arising from the declaration of eligible customers under section 27, if the Minister so determines after consultation with the President.

The Federal Ministry of Power, Works and Housing
The FMOPWH is an administrative arm of the federal government of Nigeria.

Nigerian Electricity Management Services Authority
The NEMSA was established by virtue of the Nigerian Electricity Management Services Authority (NEMSA) Bill 2014, which was passed by the National Assembly to take over the functions of Electricity Management Services Limited, one of the successor companies created by the Act.

NEMSA, as a government agency, is not independent or devoid of government interference.

Energy Commission of Nigeria
The ECN was established by Act No. 62 of 1979, as amended by Act No. 32 of 1988 and Act No. 19 of 1989. The agency is not independent of government interference.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Section 50 of the Act provides generally for instances where a person aggrieved by the decision of NERC may apply to NERC to review the decision or order.

In addition to the provisions of the Act, nothing precludes an aggrieved person from seeking redress in court. An aggrieved person can challenge the decision of the regulator by commencing an action at the Federal High Court by filing originating processes.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

NERC approves any merger or change in control over businesses in the power sector. By the provisions of section 69(1) of the Act, a licensee shall not assign his or her licence or transfer his or her undertaking by way of sale, mortgage or lease without the consent of NERC.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

NERC Order on the Procedure for Obtaining Approval of the Commission for Assignment or Ceding of Licences, Transfer of Undertakings, and Changes in the Shareholdings of Licensed Entities (Order No. NERC: LLE/ACT127) provides the procedure for transfer of licence or assignment or ceding of an undertaking and change in shareholding of a licensed entity.

The applicant must submit an application to NERC for approval, attaching the following:

- board resolutions of the board of the licensee and the new entity;
- an undertaking by the directors of the new entity against service disruption, to honour all existing contracts executed by the licensee and comply with the terms and conditions of the licence;
- certificate of incorporation of the new entity;
- profile of the new entity and its directors highlighting their experience, in line with the KYL forms for directors or shareholders of NERC licensees;
- proposed changes to senior management, if any (prior approval must be obtained from NERC for any changes in senior management);
- resume form containing employment history of heads of division or senior management staff (Curriculum Vitae, NERC form 2b);
- asset and liability register (Declaration Form, Appendix 1);
- the duly executed share sale agreement; and
- payment of processing fees.

NERC will conduct due diligence on the new entity. If the new entity meets the required conditions, the approval will be granted. The licensee shall within 30 days submit to NERC the Certified True Copy of CAC2 (Statement of Share Capital and Return on Allotment) and a brief profile of the new shareholding structure of the applicant.

There is no specific timeframe for obtaining an approval or refusal for a merger, acquisition and other transfer of control.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Under the Act, NERC has the responsibility to continue to monitor the Nigerian Electricity Supply Industry to determine its potential for additional competition. NERC is required to send a report on this to the minister annually, and also after the declaration of a competitive market by the minister.

NERC also has the powers to determine whether to restrict the introduction of competition to certain geographical areas or to certain licensees or customers, and the basis for such restriction. Any proposals in this area should reflect the principle that competition is more likely to produce a more efficient result than regulation.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

There is currently no legislation that is dedicated solely to anti-competition issues in Nigeria. However, the Act empowers NERC to ensure continuous competition and prevent the abuse of power under section 82. There are no specific standards to determine conduct that is so classified under section 82(1)–(5) and the Act fails to state what standard will be used to determine what constitutes an anticompetitive or manipulative practice.

The licence terms and conditions issued to licensees in the electricity sector by NERC contain provisions prohibiting discrimination and anticompetitive practice.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

In respect of services in competitive markets, the Act gives NERC a continuing power to prevent or mitigate abuses of market power in its decisions and orders, for example in relation to: licence applications and the grant of licences; licence terms and conditions; the setting of prices and tariffs; and whether or not to approve a merger, acquisition or affiliation. In addition to the above, NERC has powers to levy fines on any licensee engaged in such practices.

Update and trends

Meter Asset Provider Regulations 2018
Prior to the enactment of the MAP Regulations, there was a major metering gap that led to the DisCos' use of estimated billing on unmetered customers. The liquidity challenge in the sector has been flagged as one of the challenges affecting the ability of DisCos to meter all customers.

The NERC recently issued the MAP Regulations, which came into force on 3 April 2018. The MAP Regulations aims to encourage the development of independent and competitive metering services, eliminate estimated billing practices, attract private investment to the provision of metering services, close the metering gap through accelerated meter roll-out and ultimately enhance revenue assurance and improved customer service in NESI.

The Regulations make provision for a meter asset provider, who will be responsible for providing the meter and carrying out all meter-related services. The creation of the meter asset provider relieves the financial and operational burden of metering from the DisCos. It is expected that the Regulations will reduce the metering gap, improve revenue generation for the DisCos, eliminate estimated billing and reduce commercial losses for the DisCos.

Azura-Edo IPP
Nigeria's first project-financed independent power plant, the Azura-Edo IPP, completed construction of the 450MW independent power plant in early 2018. The power plant is expected to reflect significantly in the power supply across the nation when it begins to function at its full capacity of 459MW for the first phase of implementation of the project. The Azura-Edo IPP is also the first Nigerian power project to benefit from the World Bank's Partial Risk Guarantee structure and the political risk insurance supplied by the Multilateral Investment Guarantee Agency.

Eligible customer regulations
Following the Eligible Customer Declaration on 19 May 2017 by the Minister for Power, Works and Housing, the NERC issued the Eligible Customer Regulations 2017 (The Regulations). The Regulations outline the terms that would guide the direct purchase of electricity by end-users from power generation companies.

The Regulations provide standard rules to facilitate competition in the quality and supply of electricity, and promote rapid expansion of generation capacity. Through the Regulations, NERC seeks to improve the overall financial liquidity of the electricity industry by allowing GenCos with uncontracted capacity to access unserved and underserved consumers, with the aim of improving financial liquidity in the sector and encouraging third-party access to transmission and distribution infrastructure, as a precursor to full retail competition in the NESI.

Implementation of the Power Sector Recovery Programme – Nigerian Electricity Transmission Project
On 22 March 2017, the Federal Executive Council approved a Power Sector Recovery and Implementation Plan that was prepared in consultation with the World Bank Group. The plan is a set of policy actions, operational and financial interventions to be implemented by the federal government of Nigeria to attain financial viability of the power sector.

Under the Power Sector Recovery Programme, the World Bank approved, in 2018, an international development Association credit and a scale-up facility credit in the total amount of US$486 million for the rehabilitation and upgrading of electricity transmission substations and lines, in Nigeria.

The investments under the Nigeria Electricity Transmission Project will increase the power transfer capacity of the transmission network and enable distribution companies to supply consumers with additional power. In addition to other investments and policy measures, the project will contribute to ensure adequate and reliable electricity supply that is necessary for Nigeria's continued economic development. It will also support private sector participation, capacity development and better governance in the TCN.

Rural electrification fund grant
The federal government of Nigeria, through the Rural Electrification Agency (REA), is set to partly fund capital grants to be provided to private investors through the rural electrification fund. The fund was set up as a scheme to incentivise investors interested in developing mini-grids in rural areas. This is the first grant that will be provided in order to support the deployment of hybrid mini-grids and solar home systems towards accelerating access to electricity to rural and underserved areas across Nigeria.

On 3 September 2018, a workshop on access to finance was conducted by the REA in collaboration with the German Cooperation, GIZ, for the qualified developers who had been selected through a public bid process.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no limitations on acquisition of interests in the electricity sector by foreign companies. However, a foreign company which invests in a company must obtain certain approvals prior to commencing business. They include the following:

- business registration – any company with foreign participation must register with the Nigerian Investment Promotion Council after incorporation of the company, before commencing business, and obtain a Certificate of Registration; and
- business permit – companies with foreign participation in Nigeria are required to obtain a business permit from the Federal Ministry of Interior before they can carry on business in Nigeria. This permit is a further prerequisite for the processing of work and residential permits that entitle expatriates that may be employed by the company to work and live in Nigeria.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Currently, interconnectors are operated and handled by the MOs under the TCN, which is wholly owned by the government. The authorisation to construct and operate interconnectors still lies within the purview of the government.

There are ongoing discussions with the government, NERC and NBET on defining required authorisations and regulating the tariff for interconnectors.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The Market Rules and Grid Code apply for interconnectors and cross-border electricity supply. The cross-border country is also required to enter into an interconnection agreement with the TCN. There are ongoing plans to ensure that PPAs are executed between the cross-border countries and NBET.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Currently, the licence terms and conditions issued by NERC to electricity utilities restrict them from entering into agreements for the supply of goods or services or dealing with any of their affiliate businesses except where they can demonstrate that they will not receive any material gain from such transaction or unduly discriminate in favour of their affiliate business.

They are also restricted from giving cross-subsidies to their affiliates at the expense of the licensed business or receiving cross-subsidies from their affiliates. They are required to ensure that their affiliates do not use any information in the electricity utilities' possession to gain a competitive advantage and shall ensure that they do not disclose

information to affiliates that will give the affiliates some kind of commercial advantage.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

NERC enforces the restrictions on deals between electricity utilities and their affiliates in the NESI. Where NERC determines that there has been an abuse of market power, section 82(7) of the Act empowers NERC to issue cease orders as may be required and levy fines on the electricity utilities.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

In 1998 Panama restructured its electricity sector. A year later, the state-owned electricity entity (IRHE), which controlled the generation, transmission and distribution of electricity in Panama, was privatised. As part of the restructuring process, the state invited private investment participation in the areas of generation and distribution, but retained full control of the transmission infrastructure and services. The state also created a regulatory entity to supervise the operation of the sector. Policymaking authorities for the electricity sector were assigned to the National Secretariat of Energy, a quasi-executive cabinet office created in 2006.

The legal framework of the electricity sector comprises:

- Law No. 26 of 29 January 1996, as amended, that created the regulatory entity, the National Authority of Public Services (ASEP);
- Law No. 6 of 3 February 1997, as amended, that created the regulatory and institutional framework for the electricity market and the rules for generating, transmitting and distributing electricity (Law No. 6); and
- Executive-Decree No. 279 of 14 November 2006, and Law No. 43 of 25 April 2011 as amended, that created and reorganised the National Secretariat of Energy, an office under the executive branch responsible for designing and implementing the government's policies and strategies for the electricity and oil and gas sectors.

ASEP supervises the electricity market and primarily:

- issues concessions, licences and other authorisations to generation companies (generators) and distribution companies (discos);
- registers self-generators and co-generators;
- develops rules and principles for generating, transmitting, distributing and selling electricity; and
- ensures sector compliance.

The energy generation market is divided in terms of installed capacity as follows: 52 per cent corresponding to hydro generation plants, 37 per cent corresponding to thermo generation plants, and the remaining percentage corresponding to wind and solar generation plants.

The existing regulatory framework, in particular the Commercial Rules that regulate the wholesale market and the Purchasing Rules, regulate competitive auctions to purchase capacity and energy from generators (auctions) and allow special auctions:

- based on the type of technology of the generator;
- for new projects only; or
- based on other special characteristics.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Panama has organised its electricity sector into three main areas: generation, distribution and transmission.

Generation

Generators must enter the market through a concession, a licence or a registration process before being granted by ASEP.

Hydro and geothermal generators must obtain a concession. Thermal, wind and solar generators must obtain a licence. And self-generators and co-generators must complete a registration process before ASEP. Generators that enter the market through a concession or licence can sell their power through:

- power purchase agreements (PPAs) that are subscribed with discos after being awarded through auctions;
- PPAs freely negotiated with other generators or large unregulated consumers (LUCs). An LUC is a consumer that exceeds 100kW per month and can purchase its power directly from generators, discos or the large consumer basket (LCB);
- the LCB, a collection of all electricity requirements from LUCs managed by the state-owned transmission company (ETESA); or
- the spot market.

The state retains a non-controlling participation in two hydro generators, and three thermal generators, and full control of one hydro, one thermal, and one solar generator.

Self-generators and co-generators that enter the market through a registration process before ASEP, produce energy for their own consumption, and sell their surplus in the electricity market. Moreover, self-generators can also enter PPAs and participate in auctions.

Distribution

Discos must operate under a concession granted by ASEP. Discos operate by selling power to regulated consumers and LUCs. In Panama, there are three discos that must keep open access to their grids for all generators and LUCs, subject only to payment of tolls and connection charges. Discos participate in the National Interconnected System (NIS). The NIS requires discos to enter into PPAs to supply 100 per cent of their estimated maximum regulated demand. After the privatisation process of 1998, the state has retained a non-controlling participation in the three discos operating in Panama.

Transmission

ETESA owns all transmission assets as well as the concession for transmission of electricity throughout Panama. ETESA is also responsible for the NIS. In 2005, ASEP granted another transmission concession to Empresa Propietaria de la Red (EPR). EPR is a company incorporated under the laws of Panama to interconnect the Central American electricity market pursuant to the tenets of the Central American Electrical Interconnection System (SIEPAC) treaty. Interconexión Eléctrica Colombia-Panama (IECA), a company incorporated under the laws of Panama to interconnect the Panamanian and Colombian electricity markets, has also requested a transmission concession to ASEP, which is pending approval of ASEP since 2017. ETESA has 12.5 per cent ownership in EPR and 50 per cent ownership in IECA.

Only discos licensed by ASEP may advertise the provision of electricity to consumers. Any other intermediary is forbidden from buying and reselling electricity to consumers. The exceptions are generators that market and sell electricity to LUCs.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

According to Law No. 6, generation facilities may operate under a concession, a licence or a registration before ASEP.

Concession
ASEP awards concessions after completing an auction process. When ASEP identifies a possible hydro or geothermal project or a third-party requests a concession, ASEP must start an auction process to allow all interested parties to participate. After completing the auction process, ASEP awards the concession to the candidate with the highest bid and for a period that may not exceed 50 years. After expiry, the concession may be renewed once for another 50-year term.

Licence
A generator requires a licence to construct and exploit any generation plant other than those subject to a concession regime. Applicants must file a licence application with ASEP. If the licence application is approved, ASEP will issue the licence for a maximum term of 40 years. After expiry, the licence may be renewed for another 40-year term.

Registry of self-generators and co-generators
Entities that, as part of their industrial or commercial operations, own generation plants that generate electricity for their own consumption, may register such generation capacity before ASEP. Once ASEP approves the registration of these companies, these companies may sell their surplus energy into the electricity market. Self-generators may also enter into PPAs and participate in auctions. These registers are usually granted for 5 year renewable terms.

Companies competing for a concession or applying for a licence or registry must also have an environmental impact study of the project duly approved by the Ministry of Environment (MoE), a Water Concession issued by the MoE, for hydro projects, an interconnection approval from ETESA and must also have successfully completed a test run of the plant directed by the National Dispatch Centre (CND). The CND is a division within ETESA that plans, supervises and controls the integrated operation of the NIS and ensures the NIS's safe, integrated and reliable operation.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Law No. 6 promotes a policy of free access to the NIS. Access to the NIS requires each generator to subscribe to a transmission contract with ETESA. The transmission contract will govern the relationship between the generator and ETESA and affords the generator the right to connect to the transmission grid and facilities owned and operated by ETESA for a fee.

Connection to the NIS requires the generator to accept and comply with NIS Operating Rules and the Technical Service Quality Rules, including all system fees charged by ETESA, which are set and vary according to the area.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Approximately 72 per cent of the electricity consumed in Panama is generated by hydroelectric plants. Some of these plants were built before 1997, when the electricity sector was still owned and operated exclusively by the government, and in the absence of any special incentives. Rather, their construction was predicated on a government policy directed at using water resources that are abundant almost year round and that are not subject to cost surges or variations.

After 1998, when the government designed and implemented a privatisation programme for the electricity sector, private capital played a leading role in the development and construction of new thermoelectric plants. Though the electricity sector underwent significant legislative changes in 1997 and 1998, very few provisions dealt with or encouraged the development and use of renewable generation sources. Among those few was a provision of Law No. 6 that concedes a 5 per cent price differential over the price offered in auctions by generators that use a renewable and alternative energy source.

The first integrated and notable effort to promote generation of clean and renewable energy came to life with the adoption of Law No. 45 of 2004 (Law No. 45). Law No. 45 and its regulations target hydro, wind, biofuel and solar energy development. Law No. 45 is primarily a tax-laden body of benefits that exempts generators from:

- import tax, custom duties, fees, contributions, encumbrances, VAT on the importation of equipment, machinery, materials, spare parts, as well as on the tools and equipment to construct, operate and maintain a generation plant; and
- up to 25 per cent of income tax for new project developments or for increasing the generation capacity of an extant plant. The amount of income tax that may be credited will be measured by the amount of carbon dioxide emissions that are reduced annually. The income tax benefit is effective for the first 10 years, counted from the time the project commences commercial operations.

After Law No. 45, the government has enacted the following regulations regarding renewable energies:

Law No. 44 of 5 April 2011 (Law No. 44), as regulated, which creates special auctions for wind generators only, as well as tax exemptions for all wind generation companies, as follows:

- import tax, custom duties, fees, contributions, encumbrances, VAT on the importation of equipment, machinery, materials, spare parts, as well as on the tools and equipment to construct, operate and maintain a wind generation plant. This exemption also applies when importing wind generation equipment to be sold in Panama; and
- 15 years of exemption from all national taxes to companies manufacturing equipment in Panama for wind generation plants.

Owing to these incentives and government policies allowing for specific auctions for wind power PPAs, wind projects now account for 2.8 per cent of energy generation.

Law No. 42 of 20 April 2011 (Law No. 42) that establishes the national bio fuels policy, regulates the biomass-based energy generation, and grants fiscal credits to companies that purchase bio ethanol and bio diesel made with local products.

Law No. 43 of 9 August 2012 that amends Law No. 6 and creates special auctions:

- based on the type of technology;
- for future projects only; or
- based on special characteristics that respond to the government's energy policy.

Law No. 41 of 2 August 2012 (Law No. 41):

- promotes the development of generation projects using natural gas; and
- creates the following tax exemptions for projects using natural gas:
  - exemption of import tax regarding equipment and spare parts to construct, operate and maintain a power plant using natural gas; and
  - application of the accelerated depreciation method to the equipment of power plants using natural gas.

Law No. 37 of 10 June 2013 (Law No. 37) establishes incentives for the construction, operation and maintenance of solar power generation plants. Law No. 37 creates the following tax exemptions for companies involved in the construction, operation or maintenance of solar power generation plants:

- import tax, custom duties, VAT on the importation of equipment, machinery, materials, spare parts, tools and equipment to construct, operate and maintain a solar power generation plant;
- tax credit up to 5 per cent applicable to income tax in connection with the total direct investment on solar power generation plants already built or under construction; and
- application of an accelerated depreciation method to the equipment of power plants using solar energy.

Finally, through Resolution AN-10206 of 2016, ASEP issued rules allowing distributed generation for clients to set up self-generation facilities for their own consumption, which can be connected to the distribution grid, following simple procedures, and an agreement with the distribution company. These regulations facilitate the establishment, among others, of substantial solar capacity to allow clients to significantly reduce the amount of power required from the grid.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As outlined in the preceding question, Law No. 6, Law No. 45, Law No. 44, Law No. 42, Law No. 41 and Law No. 37 make up the entire body of legislative efforts aimed at promoting electricity generation from renewable and alternative sources.

Despite these initiatives, energy consumption levels have not experienced a significant variation, with a new single-day consumption record set at 1,661MW of capacity in April 2018. Current generation capacity in Panama stands at 3,251.52MW.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

No. The Panamanian government has not issued rules supporting electricity storage, or research and development of storage solutions.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

No. Panama has not implemented provisions or measures to encourage or discourage development of nuclear power plants. There are no nuclear power plants in operation in Panama at present.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In Panama, ETESA, a government-owned and run entity, has full ownership and management of the NIS. Only ETESA can operate the national transmission network.

As mentioned in question 2, and as part of SIEPAC, ASEP granted a transmission concession to EPR to develop, operate and maintain a transmission line that will interconnect Central America. ETESA owns 12.5 per cent of the shares in EPR.

Similarly, on 1 August 2008, the Panamanian government signed a Memorandum of Understanding with Colombia to develop the technical and regulatory framework that will govern electrical interconnection between both countries. ETESA and the transmission company of Colombia, Interconexión Electrica SA (ISA), formed IECA to develop the Panama–Colombia interconnection project. In 2012, Panama and Colombia agreed on, and approved, the operation rules and dispatch rules that will regulate the exchanges of energy between both countries. Panama and Colombia scheduled the auction to assign the economic rights of the transmission line for June 2012; however, the said auction was cancelled and a new date has not been set yet. In July 2014, the government announced that Panama was going to continue with the interconnection project with Colombia; and that the interconnection project will transport up to 400MW, reducing the capacity of the line from 600MW as originally envisaged. In September 2015, Panama and Colombia commenced environmental consultations and reviews in connection with the interconnection project; and set June 2016 as the deadline to solve all environmental matters. IECA put in a request to ASEP, and ASEP authorised the extension of the term to solve the environmental matters until September 2018. However, and as of 9 August 2018, Panama and Colombia have not reached an agreement regarding the environmental matters, and IECA has not requested ASEP for a new extension to solve said matters.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Law No. 6 provides for open access to the transmission grid subject only to the payment of a connection fee and a use fee to ETESA. To connect to the transmission grid, the applicant must file a request with ETESA.

The request must include:

- a technical description of the interconnection structure;
- the estimated start-up date;
- how much energy the applicant expects to use or generate for the four-year period following interconnection;
- a technical report on the effect of the new interconnection over the transmission grid; and
- the applicable environmental study.

Generators and discos must comply with Transmission Regulations and pay a tariff that covers interconnection and transmission charges. ASEP formulates the criteria to set and adjust the transmission tariffs.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

As mentioned in question 9, the transmission grid is currently controlled by ETESA, a company wholly owned by the government; hence, the expansion of the transmission grid rests primarily on government development plans and sponsorship.

The Transmission Regulations adopted by ASEP in 2009 as amended, requires ETESA to elaborate a plan for the expansion of the NIS. The expansion plan needs the approval of the National Secretariat of Energy. In December 2017, ASEP approved the latest plan filed by ETESA.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

ASEP is the authority that fixes the terms and rates for the provision of transmission services. Resolution No. JD-5216 of 14 April 2005 as amended, adopted the extant transmission regulations.

Transmission regulations that, among other principles, set the current transmission rates will remain in force until 2021. Rates associated with the access and use of transmission lines must cover the investment, operation and maintenance costs of the NIS and allow for reasonable profit. ASEP has defined as reasonable profit a profit that does not differ by more than two points from the annual interest rate of a US Treasury 30-year bond, plus a seven-point business-risk premium. Rates must also attend the foreseeable growth in transmission traffic, and ensure the reliable, continuous and outstanding development of the NIS. The government has rejected a proposal to change the concept of reasonable profit and reduce it to a profit that does not differ by more than two points from the annual interest rate of a US Treasury 30-year bond, plus a five-point business-risk premium.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

ETESA is the entity that controls the transmission grid. The CND, as explained in question 3, is a unit of ETESA, responsible for planning, supervising and managing the NIS and for ensuring its safe, integrated and reliable operation. Generators must comply with the transmission schedules set by the CND. Generators may deviate from transmission schedules only in cases of unforeseeable maintenance or repair work to transmission lines or interconnection units or when there is an event of clear and conclusive force majeure. The CND may request

authorisation to ASEP for the compulsory disconnection of any generator or disco that does not comply with CND guidelines.

The Planning Unit, an administrative department within ETESA, is responsible for researching, studying and forecasting the power requirements of the entire country. The Planning Unit is also responsible for recommending options and alternatives to satisfy such power requirements, including the development of alternative sources of energy and for designing and implementing programmes to conserve and optimise the use of energy.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

To construct and operate a distribution network, a company must apply for a distribution concession. ASEP grants concessions to distribute electricity and the Comptroller General must approve said concessions. ASEP can grant distribution concessions for a maximum of 15 years.

Further, as outlined in question 3, companies applying for any concession, including a distribution concession, must have an environmental impact study duly approved by the MoE.

According to Resolution AN No. 6457-Elec the current distribution concessions will expire in October 2028.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Law No. 6 requires discos to provide open access to the distribution grid. Access to the grid is governed by the applicable laws, regulations and resolutions of ASEP and by an agreement subscribed to by the discos.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Yes. Every four years, ASEP approves a tariff regime prepared by discos that includes, the investment that discos estimate will make to maintain and expand the distribution grid, provide public lighting services, and meet energy supply needs that clients may have, including rural electrification in certain areas of the country. This provides, with efficient costs, the basis to determine the tariffs that discos charge to regulated customers.

ASEP also includes in the tariff regime certain expansion projects that must be executed by discos and included as part of its tariffs. If discos do not execute said projects, ASEP may fine them, and reduce the distribution tariffs that discos charge to their clients in the following tariff period.

And finally, Law No. 6 and concession contracts require discos to provide service and extend the grid to serve clients that are within 100 meters of existing distribution infrastructure.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Resolution No. JD-5863 of 2006, as amended, sets the terms for the distribution and sale of electricity. Said resolution also provides the formula used to determine distribution rates. The government issued new procedures to determine rates applicable for the distribution and commercialisation of electricity for the period 2014–2018.

Discos must submit to ASEP a list of rates that are applicable to regulated consumers and the rates charged for the use of distribution networks. ASEP must approve those rates. When approving the proposed rates, ASEP considers the real costs of the service and the area of distribution.

Discos must obtain long-term contracts to cover 100 per cent of the capacity and power requirements of their regulated consumer base.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

As outlined in question 3, generators require either a concession, a licence or a registration before or issued by ASEP, to build and operate a generation facility.

Generators with a concession or licence, can participate in the wholesale market in Panama by selling their output through:

- PPAs. PPAs must be awarded through auctions summoned and presided over by ETESA. ETESA establishes reference prices for each auction and generators compete for the long-term or short-term contract on the basis of capacity and prices. ETESA awards the PPA to the bidders offering the lowest monomic price. Monomic price is defined as the combination of the prices for energy and capacity, expressed in terms of dollars per MW. Once ETESA selects the winning bid, ASEP must approve the selection. The auction process is completed with the subscription of a PPA between the disco and the generator that submits the lowest conforming bid. As indicated in question 5, ETESA can organise special auctions based on the type of technology;
- PPAs freely negotiated with other generators;
- PPAS freely negotiated with LUCs. According to rules issued in 2012, generators may also sell capacity and energy to LUCs using the LCB. The LCB is an auction system that promotes a basket of energy from generators to LUCs managed by ETESA; or
- the spot market, on an hourly basis. The spot market allows generators to sell to discos, LUCs, other generators and foreign markets. Rules issued in 2012 allow generators to sell into the spot market only if the generators have complied with their obligations to participate in all auctions called by ASEP to purchase and sell power or energy, with their available capacity. The price of energy in the spot market will be calculated based on the last generator called to dispatch energy, without considering the fuel source or any security restrictions.

Self-generators and co-generators can participate in the wholesale market in Panama by selling the energy that they do not consume in the spot market. Moreover, self-generators can also negotiate PPAs with other generators and LUCs.

As discussed in question 2, discos require a concession issued by ASEP to operate and to sell power to consumers. Additionally, discos must subscribe long-term PPAs to cover 100 per cent of the capacity and energy requirements of regulated consumers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In Panama, ASEP has the authority to enact and amend the rules that govern power sales from generators to the wholesale market. The CND is responsible for implementing these rules. Said rules set the market criteria for the exchange and sale of power, including the criteria for setting tariffs. These rules and tariff criteria are reviewed every four years.

Tariffs charged by discos to final consumers are classified according to consumption and voltage. Discos must set tariffs based on a formula fixed by ASEP that allows for a reasonable return on investment after distribution costs are covered. Accepted distribution costs are management, operation and maintenance expenses, as well as standard losses and the depreciation that an efficient disco would incur within the respective concession area.

Tariffs to final consumers at present include a fuel differential subsidy that is paid by the government to discos to compensate for higher fuel prices.

Other requirements regarding power sales are outlined in question 16.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Question 18 outlines the options that generators have to sell power. The applicable rates will be contingent on the particular option, as follows:

- competitive PPAs – the rates in PPAs are the result of the auction. ETESA formulates reference prices for each auction and generators compete for the long-term or short-term PPAs on the basis of capacity and prices;
- PPAs with other generators or LUCs – rates in these PPAs are freely negotiated between the parties;
- the spot market – the CND calculates the price with the marginal cost of short-term generation; and
- LCB – ETESA calculates power rates in the LCB from the average of all the power offered by generators and each generator's price. The total average will be the power rate in the LCB. After ETESA calculates the price for the LCB, the LUC can decide if they will purchase electricity from the LCB or if they prefer to purchase directly from discos or generators.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity is considered a public service obligation in Panama. Extant legislation provides that power generation, transmission, distribution and commercialisation of electricity must satisfy basic collective needs on a permanent basis. However, Panama's electricity regulatory system also considers financial viability and free competition as basic elements of the electricity market.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The National Secretariat of Energy is the authority that sets and oversees policy within the electricity sector. Similarly, ASEP develops rules and principles applicable to the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

The following entities have authority over the Panamanian electricity market:

- the National Secretariat of Energy, primarily responsible for setting policy and developing electricity sector strategy and planning, supervising and ensuring policy compliance, and recommending sector legislation to the legislative branch and to ASEP;
- ASEP is the market regulator and enforcement agent. ASEP is primarily entrusted with issuing concessions, licences and other authorisations to generators and discos; developing rules and principles for the generation, transmission, distribution and sale of electricity; and ensuring sector compliance;
- the CND, a department of the state-owned transmission company ETESA, which is responsible for planning, supervising and controlling the integrated operation of the NIS and managing the wholesale electricity market;
- ETESA, a government-owned entity that publishes, prepares and oversees auctions and evaluates and adjudicates PPAs following ASEP regulations;
- the ETESA Planning Unit, an administrative unit of ETESA, which prepares the national electricity plan and the national reference expansion plan; and
- the MoE, the environmental authority that approves environmental impact studies for generators and discos, grants water concessions for certain electricity projects, and ensures compliance with environmental rules in the electricity market.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

Market regulators in Panama are:

- the National Secretariat of Energy – Law No. 43 of 5 April 2011, reorganised the National Secretariat of Energy. It is a quasi-cabinet office connected and answerable to the executive branch. It has indirect connection to the regulated business, since the National Secretariat of Energy has power to advise and suggest changes and regulations to ASEP and to the National Assembly. The President appoints the Secretary presiding over the National Secretariat of Energy;
- ASEP – Law No. 26 of 29 January 1996, as amended, created ASEP as an independent entity, to regulate and oversee the electricity market, the telecommunications market and the water sector. Though the executive branch appoints the regulator, its appointment requires the approval of the legislative branch. However, from 1997, when ASEP was created, each government elected to serve a five-year term on the executive branch has enjoyed concurrent majority and control of the legislative branch, limiting the amount of independence that ASEP was intended to have from the executive branch;
- CND and ETESA – as explained in question 3, the CND is a unit of ETESA, which is the state-owned transmission company. As a state-owned entity, the CND and ETESA answer to the executive branch and the National Secretariat of Energy; and
- the MoE – Law No. 41 of 1998 created the National Environmental Authority as an independent government entity; it was amended by Law No. 8 of 2015, which reorganised ANAM into the MoE. The MoE is not under the supervision of ASEP or the Secretary of Energy. It is a ministry that is part of the executive branch, with its minister being appointed by the President.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

ASEP is presided over by its administrator. ASEP also has three directors – one for the electricity and water sector, another for the telecoms, radio and television sectors and one for customer service – who oversee their respective areas and are answerable to the administrator. Any decision issued by an ASEP officer may be challenged through two administrative actions: reconsideration and appeal. Both proceedings must be filed and resolved within ASEP as follows:

- resolutions of any of ASEP's directors may be challenged by filing a reconsideration request with the specific director or an appeal with the administrator, or both; and
- resolutions issued by the administrator of ASEP may be challenged by filing a reconsideration request with the administrator.

All the foregoing reconsiderations or appeals may be challenged further by filing an extraordinary action with the Third Chamber of the Supreme Court.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Antitrust and Consumer Protection Authority (ACODECO) has the authority to approve or block mergers, changes in control, or acquisition of assets involving the electricity sector. It may also block a merger while in progress or after it has been completed if considered against Law No. 45 of 31 October 2007 governing antitrust and consumer protection (Law No. 45).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In Panama, parties intending to engage in a merger or acquisition are not required to obtain an authorisation from ACODECO prior to or after said acquisition. However, the parties may voluntarily submit the terms of the merger or acquisition to ACODECO for prior verification, so that ACODECO can: confirm if the transaction would cause a

Update and trends

Panamanian authorities are making efforts to improve the regulations of the energy market and Panama's transmission infrastructure.

On 10 October 2017 the Executive Branch filed before the National Assembly a draft bill to amend Law No. 6 of 3 February 1997 that regulates the wholesale energy market (the Bill).

The Bill:

- allows the commercialisation of energy by: market agents that are not distribution companies; distribution companies that sell energy to their large customers and regulated clients; and generators that sell energy to large consumers that do not purchase energy based on tariffs;
- limits to 30 per cent the generation capacity that a generator can directly or indirectly have in the market; and 40 per cent the energy or capacity that a generator may have of the total PPAs market;
- eliminates auctions designed for specific technologies;
- establishes rules benefitting renewable projects such as:
  - allowing renewable projects with a maximum capacity of 10MW to sign PPAs directly with distribution companies as long as such direct PPAs do not exceed 15 per cent of the maximum demand of the distribution company in its concession area, without affecting the distribution company's self-generation capacity;
  - penalising fossil fuels generators, for bid evaluation purposes, depending on the CO_2 emissions of the offeror fossil fuels generator; and
- changes the administrative and public contracting principles of Empresa de Transmisión Eléctrica, SA (ETESA), and other state companies.

The National Assembly must approve the Bill in three different debates, for the Bill to become a Law. The National Assembly has not continued discussing the Bill since the sessions of the National Assembly started on July 2018.

Fourth Transmission Line

ETESA launched Panama's fourth transmission line project under a build-operate-transfer format. ETESA published terms of reference to prequalify possible participants for the auction to construct and operate Panama's 4thtransmission line. Interested participants filed proposals for the prequalification process on 6 August 2018. ETESA is evaluating the proposals filed to determine if the participants comply with the requirements included in the terms of reference, and continue to the next stage of the auction process. According to the published terms of reference the project will have a capacity of 1,400MW and an extension of 317km. ETESA expects the company that will execute the project, to have the fourth transmission line operating in 2022.

negative effect in the corresponding market and therefore result in a prohibited economic concentration; and recommend adjustments to the transaction to avoid becoming a prohibited economic concentration. ACODECO has 60 working days to issue its opinion.

If the 60-day period has lapsed without ACODECO's decision, the proposed merger or acquisition may be completed. If ACODECO decides that the acquisition is not a prohibited economic concentration, the acquisition cannot be challenged or objected to after the closing, unless the opinion of ACODECO its issued based on false information filed by the parties to the transaction.

Similarly, if the parties to the transaction decide not to complete a prior verification with ACODECO, ACODECO has the authority to initiate an investigation regarding the legality of the transaction within three years after the closing of the transaction. Third parties may also request ACODECO to review a transaction within said three-year period.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

ACODECO is the institution with authority to prevent and prosecute anticompetitive practices. Antitrust cases are tried before commercial courts.

However, Law No. 6 entitles ASEP to prevent potential anticompetitive practices within the electricity sector. Accordingly, ASEP has discretion to issue directives and regulations to maintain fair competition within the electricity sector. Nonetheless, ASEP must seek the opinion of ACODECO before adopting or issuing any antitrust or discriminatory directives or regulations. ASEP may also commence antitrust investigations by notifying ACODECO of any violations, and may assist ACODECO when investigating and verifying anticompetitive practices within the electricity sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Law No. 45 forbids any act, contract or practice that may limit, diminish, damage, obstruct or harm competition and the free market in the production, processing, distribution, supply and commercialisation of goods and services.

Similarly, Law No. 6 empowers ASEP to intervene whenever it finds an abusive dominant position in the market that causes harm to regulated consumers or to any agents within the electricity market.

Law No. 6 also expressly outlines four types of antitrust behaviour:

- vertical or horizontal concentrations carried out in generation or distribution activities, causing the reduction or obstruction of competition and free concurrency of electricity market agents;
- any event or transaction that diminishes, affects or obstructs competition and the free market, such as company mergers, direct or indirect acquisition of control in another company or companies, acquisition of assets from any company carrying out activities in the electricity sector, or any other legal mechanism used to concentrate corporations, associations, shares or assets in general, between competitors, suppliers, clients, shareholders or any other economic agent;
- any event that hampers an LUC from negotiating a PPA; and
- any attempt at price fixing between generators and discos or among them.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

As outlined in question 28, ACODECO has the authority to prevent, prosecute and penalise anticompetitive practices. ACODECO may commence independent administrative proceedings or initiate an administrative review following a third-party request. Accordingly, ACODECO has the authority to impose administrative fines of up to US$1 million if ACODECO finds that consumer rights or antitrust laws have been breached.

ACODECO may also file claims in the courts of commerce to prevent or remedy economic concentrations, antitrust practices and violations of individual or collective consumer rights.

Consumers may also access commercial courts to seek redress for antitrust transgressions or to suspend antitrust practices. Commercial courts may in turn suspend any transaction or practice that may violate the rights of consumers and antitrust laws, impose precautionary measures, or award financial compensation and remedies to affected consumers.

Consumers may also seek retribution in criminal court, by filing a criminal complaint. The Attorney General's Office can also independently start criminal inquiries. Successful criminal actions for anticompetitive and manipulative practices may result in imprisonment of one to six years in the case of antitrust violations; and imprisonment of up to 18 months for unfair violations of competition laws.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There is no special requirement or limitation in the electricity sector for foreign companies in Panama. Law No. 6 establishes that local or foreign private companies, or companies of combined public and private capital, may participate in the electricity sector.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As mentioned in question 9, the transmission grid is currently controlled by ETESA, and its obligations include the construction and operation of interconnectors. However, market participants, such as generators and discos can construct and operate interconnection assets to the national grid. According to Resolution 1244 of 10 February 1999 (Resolution 1244), market participants interested in constructing and operating local interconnectors require a transmission concession issued by ASEP. ASEP requires the following to issue a transmission concession: a request document with a map showing the location and technical characteristics of the project, an NIS diagram, a list of generators in the market with their main characteristics, a copy of PPAs subscribed by the electricity market participants, a description of constituted and required easements for the project and the certification issued by MoE approving the project.

Once ASEP receives the transmission concession request, ASEP will prepare an auction, and publish the terms of reference of the auction in two national newspapers, for 30 calendar days. Interested bidders are able to file their proposals only during the publication period. If ASEP does not receive an offer from another bidder, ASEP will grant the transmission concession to the company that initially filed the transmission concession request. However, if ASEP receives an offer from one or more bidders, ASEP will grant the transmission concession to the bidder that filed the best offer.

The auction process does not only apply to transmission companies operating before the issuance of the Resolution 1244, or construction companies that are in charge of constructing the transmission line or substations on behalf of ETESA.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Cross-border electricity can be supplied via the NIS or any cross-border transmission networks through PPAs with foreign generators or discos, subject to ASEP's rules and regulations, or through short-term transfers undertaken by ETESA.

Any generator may export capacity, energy or both if it has available capacity or energy that has not been committed to other agents and if the CND does not require its capacity, energy or both for the local market.

International electricity transfers are exempted from all import and export taxes or fees.

The electricity system in Panama is interconnected with Central America, through SIEPAC. SIEPAC became fully operative in September 2015. As mentioned in question 9, Panama and Colombia are planning and developing an interconnection line between both countries.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Law No. 6 imposes certain limits on vertical and horizontal ownership within the electricity sector. These limitations are as follows:

- generators and their shareholders cannot participate, directly or indirectly, in the control of discos and cannot request new concessions if, by obtaining such concessions, they would account, directly or indirectly, for more than 25 per cent of the electric power consumption in the national market. The executive branch, with the prior favourable opinion of ASEP, may increase said percentage when it considers that such an increase is necessary based on market conditions; and
- discos and their shareholders cannot directly or indirectly control generators when the aggregate generation capacity of the respective disco exceeds 15 per cent of total demand within its respective concession area and cannot request new concessions if, on doing so, they would serve, directly or indirectly, more than 50 per cent of the total number of customers in the national market. The executive branch, with the prior favourable opinion of ASEP, may increase said percentage if it considers it necessary to allow the expansion of the zone of influence or the expansion of the electricity system as a whole.

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However, the following exceptions apply:

- if the same company can generate, transmit and distribute and if the company operates within an independent system. Law No. 6 defines independent systems as those that have a demand that does not exceed 50MW and, in the case of discos, a generation capacity that does not exceed 15 per cent of total generation within the distribution concession area;
- for co-generators and auto-generators that sell within the NIS; and
- for generators that sell their power directly to any LUCs.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ASEP has oversight and ACODECO has enforcement authority over generators or discos that fail to comply with the vertical and horizontal ownership restrictions listed in question 34.

Whenever a transaction or a company oversteps antitrust or consumer protection laws, ACODECO has sole enforcement authority either through administrative court proceedings or commercial and criminal court proceedings, as outlined in question 30.

Poland

Piotr Ciołkowski, Agnieszka Skorupińska and Adam Kędziora

CMS

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Government policy and its determinants

The main act indicating the government policy for the electricity sector is the Energy Policy 2030 adopted by the Council of Ministers in 2009. The Ministry of Energy is currently working on the new energy policy, covering the period until 2050, but it has not been adopted yet.

The Energy Policy 2030 focuses on the following six key objectives:

- improving energy efficiency;
- increasing security of fuel and energy supply;
- diversification of electricity generation through the introduction of nuclear energy;
- development of renewable energy sources (RES); and
- development of competitive energy and fuel markets; and
- reducing the energy sector's impact on the environment.

In line with EU regulations, Polish law provides for the obligation to limit pollutant emissions by energy generation facilities. With regard to large combustion plants, existing and planned facilities must meet stringent environmental standards set out in the best available techniques (BAT) conclusions. Poland is obliged to meet the EU requirements related to the reduction of greenhouse gases.

Legislative framework

The most important act concerning the electricity sector in Poland is the Energy Law, which implements EU energy regulations. The Energy Law sets out, among other things, the rules for supply (transmission, distribution and sales) of electricity and its generation, rules for operation of the energy installations, networks and equipment, the obligations and powers of the president of the Energy Regulatory Authority (ERA) as well as rules for licencing and for energy tariffs. There are also implementing regulations adopted under the Energy Law, which provide for, in particular, detailed rules for operation of the electricity system, as well as preparation and approval of the tariffs for electricity.

Other important acts for the electricity sector include the recently adopted Capacity Market Act, which is intended to address the generation adequacy concern and determines the rules for providing the service of availability to deliver capacity at times of system stress and rules for rewarding capacity market units (including generation, demand side response and storage units) for their availability.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The electricity market in Poland is dominated by state-owned companies in each of the market sectors of generation, transmission, distribution and sale. The four main capital groups active in the sector of generation, distribution and supply of electricity include PGE, Tauron, Enea and Energa.

The structure and mechanisms related to the functioning of the market are very similar to those in most European countries.

Generation

PGE capital group maintained the largest market share in the electricity generation sector in 2017, which amounted to 43.5 per cent. On the other hand, Tauron was the leader on the final sales market with a 10.8 per cent share.

The three largest producers (grouped in capital groups: PGE, Tauron, Enea) had in total almost two thirds of the installed capacity and were responsible for almost 70 per cent of electricity production in the country.

Transmission and distribution

In Poland, in accordance with the Energy Law, the electricity transmission grid is owned and operated by one transmission system operator – Polskie Sieci Elektroenergetyczne SA (PSE), a company 100 per cent owned by the State Treasury.

The transmission system operator (TSO) and in specified situations the distribution system operators (DSOs) are subject to the unbundling requirement (separation of the transmission and distribution activity from other operations including electricity generation and trading), with some more stringent rules applicable in this respect to the TSO.

At the end of 2017, 183 DSOs in Poland, which have been appointed under the decisions of the president of the ERA, were involved in electricity distribution.

Sale

In Poland, the domestic electricity consumption amounted to 168,139GWh in 2017 (an increase of 2.13 per cent as compared to 2016). In the same period, the import of electric energy to Poland amounted to 8 per cent of the total delivery of electric energy to the electricity system with the export amounting to 6.6 per cent of the total off-take of electricity.

The largest share in the sale of electricity to the final customers belongs to incumbent suppliers that emerged after the unbundling of the main distribution operators and currently act as the ex officio (last resort) sellers for all household customers that have not decided to change their electricity supplier. In 2017 there were five such last resort suppliers, as well as over 119 alternative trading companies actively involved in the sale of electricity to end users, including sellers operating on the household market.

In Poland, market participants have access to various electricity sale and purchase options and to information regarding volumes and prices at which electricity is sold.

Apart from concluding bilateral contracts, trading in electric energy in Poland may be performed on the commodities exchange run by Towarowa Giełda Energii SA – the Polish Power Exchange. The total volume of transactions concluded in 2017 on the Polish Power Exchange amounted to 111.7TWh, which means an 11.8 per cent decrease in comparison to 2016, in which the total transaction volume amounted to 126.7TWh.

The balancing market on the other hand is a specific area of the energy market, where differences between the transactions made by market participants and the actual demand for electricity are balanced.

The rules for price setting on the balancing market are – in some aspects – regulated in the Transmission Network Code. According to this document, the prices offered on the balancing market shall not be

lower than 70 Polish zloty per MWh and shall not exceed 1500 Polish zloty per MWh.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The construction of generation facilities may require a number of administrative decisions related to the investment process, including a decision on environmental conditions, water permits and building permits. The planned investment must be compliant with the binding local zoning plan, and in the absence thereof, a zoning permit needs to be obtained. After completion of the construction and before the operation of the facility, an occupancy permit is required. In order to operate generation facilities, an integrated permit or sectoral permits (such as air emission permits and waste management permits) may be necessary. Special legal requirements concern the construction of a nuclear power plant.

For the purposes of connecting the generation facility to the transmission or distribution grid, a grid connection agreement has to be concluded with, as the case may be, the TSO or the DSO. The conclusion of such agreement is preceded by the issuance of the grid connection terms by the TSO or the DSO which typically refer to more technical conditions of connecting to the grid.

The operation of the generation facility requires obtaining a licence to generate electricity issued by the president of the ERA. Exceptions to the licence obligation cover generating electricity in conventional facilities with the total installed capacity not exceeding 50MW, in certain small RES installations and from agricultural biogas, exclusively from agricultural biogas in cogeneration and exclusively from bio liquids.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The TSO is obliged to connect the customer to its grid, if such grid connection is technically feasible and economically viable and the customer complies with the terms and conditions for grid connection, which are determined by the TSO in accordance with the transmission network code. Connection to the transmission grid is performed on an equal treatment basis, however the RES installations benefit from the priority access to the grid.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In Poland, renewable energy generation is financially supported through various support schemes, namely: tradable certificates of origin systems (which include the green certificates system and the agricultural biogas certificates system), auctions support system, as well as feed-in-tariff (FIT) and feed-in premium (FIP) systems.

The auctions system is based on a reference price that constitutes the maximum price for energy generated in specified RES installations that producers may obtain. In accordance with the auctions system, RES operators should submit offers to sell energy generated in RES installations at a price lower than the reference price (bids exceeding the reference price are rejected). In general, the support consists in the right to cover the negative balance resulting from comparing the price included in the offer and the price actually applied in the sale transactions in the given period.

The recent amendment to the Act on RES also introduced FIT and FIP systems (ie, financial support mechanisms for small-capacity hydro and biogas installations). Under the feed-in-tariff system, generators can sell electricity introduced into the power grid at a fixed purchase price. The feed-in-premium mechanism is based on the right to cover negative balance on the principles analogous to those in the auction system.

The current combined heat and power (CHP) technologies support system, based on tradable certificates of origin, expires at the end of 2018. The new support system for CHP installations – to be determined in the prospective Act on promoting electricity from high-efficiency cogeneration – is in the public consultation phase. Most likely it will take the form of the auctions or premiums, depending on the type of the generating unit.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Poland participates in the EU system of reducing greenhouse gas emissions. The EU has set goals to reduce carbon dioxide by 20 per cent by 2020 and 40 per cent by 2030 (compared to 1990 levels). Poland is obliged to follow those goals. Owing to the fact that Polish power plants use mostly coal and lignite, and the share of other types of resources is small, the objectives of reducing emissions have an impact on the energy market. In the coming years, a growing number of generation facilities will have to purchase carbon dioxide emission allowances. An increase in the share of renewable energy sources in the energy mix and the modernisation of existing generation facilities to reduce emissions may be expected to deal with the increasing climate change costs.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Storage installation operators may participate in the capacity market in accordance with the Capacity Market Act. As a result of offering readiness to deliver specified capacity or volume of electric energy to the electricity grid and actually delivering specified volume of electric energy to the grid, such operator will be entitled to remuneration. Detailed rules of determining the remuneration have been set forth in the Capacity Market Act and the secondary legislation to it.

In addition, energy demand management installations, which include energy storage installations, are excluded from the obligation to pay the connection fee typically paid to the TSO or the DSO for connection of the installation to the electricity transmission or distribution system, provided that such energy demand management installations fulfil specific technical requirements determined by the TSO and the DSO in the relevant grid code.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Inter-ministerial discussions on nuclear power are currently underway in Poland. The Energy Policy 2030 envisages the construction of the first nuclear power plant and it also provides for the creation of favourable conditions for the development of the nuclear power sector. However, the Polish government is currently working on the Energy Policy 2050 which is supposed to replace the existing one and constitute a long-term plan for the development of the energy sector. The details of the Energy Policy 2050, including possible support schemes for nuclear power plants, have not yet been revealed.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The construction of strategic transmission networks is subject to special rules. The procedure requires, among others, the obtaining of a decision on environmental conditions, a water permit (if required) and a decision on the localisation of the strategic transmission network. The localisation decision replaces the necessity to divide plots of land and expropriate property. Before commencing construction works, it is necessary to obtain a building permit. After completion of the construction and before the operation of the facility, an occupancy permit is required. With respect to transmission networks that do not have the status of strategic networks, general requirements related to the investment process apply. That includes the need to ensure that the

investment complies with the zoning plan. If the given area does not have such a plan, it is required to obtain a decision on the localisation of a public purpose investment. It may also be required to obtain a decision regarding the division of properties as well as a decision regarding property expropriation. If no complete expropriation occurs, a decision to limit the use of the property shall be issued. In general terms, it may be required to obtain a decision on environmental conditions, building permit and occupancy permit.

To be able to operate a transmission network, a transmission licence has to be issued by the president of the ERA. Also, the president of the ERA has to appoint the relevant entity as the TSO (this step is in addition preceded by the issuance of an independence certificate confirming the fulfilment of the unbundling requirements by the prospective TSO). In accordance with the Energy Law, one transmission system operator (a joint-stock company – spółka akcyjna – 100 per cent owned by the State Treasury) shall operate the electricity transmission grid.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Under the Third Party Access (TPA) rule, the TSO is obliged to provide transmission services for all final customers and electricity traders or generators on an equal treatment basis. In order to obtain transmission services, the applicant must be connected to the grid and enter into a transmission services agreement.

A transmission services agreement is concluded upon a customer's application. If the customer is under an obligation to hold a licence for a given activity (trading in, or generating electricity), the TSO will require such customer to submit a valid licence before execution of the transmission services agreement. Under certain conditions, the TSO may also require financial collateral from the customer.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The TSO is required to draft a development plan for a period of 10 years, proposing how to cover existing and future demand for energy. Such plan must be submitted, negotiated with and approved by the president of the ERO and must be updated at least once every three years. The financing of the prospective investments included in the above development plan is mainly ensured in the tariffs for the transmission services, which are also approved by the president of the ERA. The TSO needs to consider the EU-wide development plans adopted by the European Network of Transmission System Operators for Electricity.

According to the Act on Preparation and Implementation of Strategic Investments in Transmission Networks, investments in transmission networks may be funded not only by the investors themselves, but also by the state and the EU. The above Act also sets forth the rules for simplifying the development of the transmission system.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The general rules and standards regarding the rates and terms for the provision of transmission services are set out in the Energy Law and implementing regulations. Those general rules are meant to ensure equal treatment of all system users and safety of both the grid and the system.

Specific rates for the provision of transmission services are determined in the tariff, which is prepared by the TSO on a cost-plus-margin basis and approved by the president of the ERA. Detailed terms for the provision of transmission services are set out in the transmission network code, which is prepared by the TSO and approved by the president of the ERA, as well as in transmission services agreements.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The TSO, acting under the supervision of the president of the ERA, is responsible for the reliability of the transmission grid and system. The TSO is obliged to ensure the proper functioning of the grid and its maintenance, as well as required grid development. The TSO is also responsible for, among other things, procurement of ancillary services, (re)dispatching of centrally dispatched generation units and operation of the balancing market.

If the security of electricity supply is threatened, the TSO, in cooperation with system users, will undertake all possible actions using available means to remove this threat and prevent its negative effects. Those actions may include issuing orders to system users. The TSO may also impose limitations in the supply and off-take of electricity for a period not longer than 72 hours.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Depending on the voltage of given distribution networks, a decision on environmental conditions may be required. The construction of distribution networks is considered a public purpose investment, which means that obtaining a decision on the localisation of such an investment takes place in a simplified procedure. This type of decision is obtained in cases when the zoning plan does not provide for the construction of a distribution network. In many cases a decision is issued to expropriate the property for the construction of a distribution network. A decision regarding the division of the properties may also be required. If no complete expropriation occurs, a decision to limit the use of the property shall be issued. Before commencing construction works, it is necessary to obtain a building permit. After completion of the construction and before the operation of the facility an occupancy permit is required.

To be able to operate the distribution network, a distribution licence has to be issued by the president of the ERA.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Under the TPA rule, DSOs are obliged to provide distribution services for all final customers and electricity traders or generators on an equal treatment basis. In order to obtain distribution services, the applicant must be connected to the distribution grid and enter into a distribution services agreement.

The DSO is obliged to connect the customer to its grid, if such grid connection is technically feasible and economically viable and the customer complies with the terms and conditions for grid connection, which are determined by the DSO in accordance with the distribution network code.

A distribution services agreement is concluded upon a customer's application. If the customer is under an obligation to hold a licence for a given activity (trading in, or generating electricity), the DSO will require such customer to submit a valid licence before execution of the distribution services agreement.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Distribution system operators are required to draft a development plan for a period of at least five years, proposing how to cover existing and future demand for energy. Such plan must be submitted, negotiated with and approved by the President of the ERA and must be updated at least once every three years. The financing of the prospective investments included in the above development plan is mainly ensured in the tariffs for the distribution services which are also approved by the president of the ERA.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The general rules and standards regarding the rates and terms for the provision of distribution services are set out in the Energy Law and implementing regulations. Those general rules are meant to ensure equal treatment of all system users and safety of both the grid and the system.

Specific rates for the provisions of distribution services are determined in the tariff, which is prepared by the DSO on a cost-plus-margin basis and approved by the president of the ERA. Detailed terms for the provision of distribution services are set out in the distribution network code, which is prepared by the DSO and approved by the president of the ERA, as well as in distribution services agreements.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

In general, the sale of electricity to customers (both household and commercial) requires an energy trading licence, or with regard to generators selling electricity produced in their own units – electricity generation licence. The energy licences are granted by the president of the ERA, upon verifying that the applicant meets the requirements set out in the Energy Law (ie, has its seat in the EU, Switzerland, a European Free Trade Association (EFTA) member country, or Turkey, and has technical and financial capacity to ensure proper performance of a given energy activity).

There are some exceptions from the obligation to hold an energy licence. An electricity trading licence is not required for trading in electricity through a less than 1kV installation owned by the energy customer, or trading on the Polish Power Exchange (PPE). However, if the entity intends to trade in electricity on the PPE on its own (ie, not through a broker), it is obliged to become a member of the PPE.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Licensed entities are obliged to apply tariffs approved by the president of the ERA, unless specifically exempted under the Energy Law or through an individual decision of the president of the ERA. However, under statements issued by the president of the ERA in 2001, 2007 and 2008, the obligation to submit tariffs for approval of the president of the ERA, generally does not apply to entities holding a licence for trading in electric energy. In accordance with those statements, the obligation to apply tariffs approved by the president of the ERA pertains only to the supply of electricity to household customers by entities that have the status of ex officio (last resort) suppliers. In light of the above, companies that do not hold the status of ex officio suppliers and do not deliver electricity to household customers, are not obliged to apply tariffs approved by the president of the ERA, and thus are free to determine the price at which they sell electricity to customers.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Wholesale trading in electricity has been exempted from the obligation to submit tariffs for approval of the president of the ERA. As regards wholesale trading on organised markets (eg, balancing market and PPE), the prices are determined on a market basis, but may be subject to some limitations in accordance with internal regulations. In particular, the rules for price setting on the balancing market are – in some aspects – regulated in the transmission network code.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The ex officio (last resort) sellers are obliged to render the universal service (which covers sale of electric energy and its delivery with the use of transmission or distribution services) on the equal treatment basis to all household customers that do not choose another supplier and are connected to the grid where the relevant electricity utility has been appointed the ex officio supplier. The last resort suppliers are appointed by the president of the ERA in a tender or appointed ex officio in the case of an unsuccessful tender.

In addition, electricity generators (with certain exceptions) are obliged to sell no less than 30 per cent of electricity generated through the PPE. Recently, plans to increase the above obligation to 100 per cent of generated electricity have been announced by the Minister of Energy.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

In Poland, the Minister of Energy and the president of the ERA are main authorities determining the regulatory policy and performing supervision with respect to the electricity sector, with the Council of Ministers responsible for adopting the energy policy for the state.

The Minister of Energy initiates the legislative process with respect to most of the acts pertaining to the energy sector and is responsible for adopting various legislative acts which constitute secondary legislation to the Energy Law and some other Acts. The Minister of Energy also actively participates in creation of the energy policy on the Polish and the European level.

The president of the ERA regulates the activity of the energy companies aiming at balancing the interests of the energy enterprises and the fuel and energy customers. The president of the ERA monitors entities active on the electricity market with the aim of verifying whether the relevant obligations resulting from the Polish and European Union law, as well as administrative decisions are fulfilled.

In addition, the Minister of Environment participates in preparing and developing climate policy or setting environmental standards that the energy companies have to obey.

23 Scope of authority

What is the scope of each regulator's authority?

The scope of rights and obligations of the president of the ERA are set forth mainly in the Energy Law. This authority is responsible, inter alia, for granting and withdrawing licences and monitoring the functioning of the electricity market. The president of the ERA approves and controls the application of tariffs, controls the fulfilment of obligations to sell electricity through the power exchange and is allowed to impose financial penalties.

For responsibilities of the Minister of Energy, refer to question 22.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Chairman of the Council of Ministers appoints the president of the ERA for a period of five years from not more than three candidates selected through an open and competitive recruitment. The relevant person can be re-appointed to this position only once.

The Energy Law guarantees the independence of the president of the ERA and ensures that it exercises its powers impartially and transparently. When carrying out the regulatory tasks it is legally distinct and functionally independent from any other public or private entity.

The Minister of Energy is a governmental authority. The relevant person holding the position of the Minister of Energy is nominated as part of the process of establishing the Polish government (Council of Ministers).

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of the president of the ERA may be appealed against to the District Court in Warsaw - the Court for Competition and Consumer Protection. In general, if the president of the ERA failed to apply the relevant legal provisions properly and this resulted in the improper determination of rights and obligations of the entity or their improper application in the particular case, the relevant decision of the president of the ERA can be appealed against.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Under Polish law, the relevant authority for the assessment of concentrations is the president of the Office of Competition and Consumer Protection (OCCP).

A concentration (ie, merger, acquisition of control, acquisition of assets or creation of a joint business entity) is subject to notification to the president of the OCCP, if the combined group turnover of the undertakings concerned in the year preceding the transaction exceeded €1 billion worldwide or €50 million in Poland. The obligation does not apply to insignificant concentrations, that is, concentrations where the turnover of the target or of any of the undertakings concerned (in case of merger or creation of a joint business entity) has not exceeded €10 million in Poland in either of the two years preceding the transaction. There are also certain case-specific exemptions from the obligation to notify.

If a concentration has a 'community dimension' (owing to very high turnovers or a significant overlapping presence in the European Union), it will normally be subject to review by the European Commission rather than by the president of the OCCP (or any other national merger control authorities in other member states).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In general, the president of the OCCP has one month to finish merger control proceedings and issue a decision (Phase I proceedings). However, in cases that are particularly complicated, the president may raise competition concerns, or require a market inquiry, in which case the deadline is extended by an additional four months to a total of five months (Phase II proceedings). The above-mentioned time limits start only after the complete merger notification is filed and the filing fee is paid.

The 'stop-the-clock rule' applies to both phases, meaning that the deadline is extended by the time taken by the applicants to provide the President of the OCCP with additional requested documents or information. According to the most recent (1H2018) data, the actual average time for issuing a decision in simple (Phase I) cases has been indeed one month. In complex (Phase II) matters the actual time for issuing a decision varies greatly from case to case, but on average it has been over eight months.

If no decision is issued by the statutory deadlines, the president of the OCCP is deemed to have cleared the concentration (although this has never happened in practice).

The president of the OCCP has the power to block a concentration if it is bound to significantly lessen competition on the relevant market, in particular by creating or strengthening a dominant position (which under Polish law is presumed at the level of 40 per cent market share). A concentration that raises competition concerns may still be cleared if it boosts economic or technical development, or has positive effects on the national economy. The president of the OCCP may also issue a conditional decision, if the competition concerns may be addressed by certain structural or (in exceptional cases) behavioural conditions.

The European Commission has its own set of merger control procedures for reviewing concentrations that have a 'community dimension'.

Update and trends

Recent adoption of the Capacity Market Act and the capacity market implementation, amendment to the Act on RES (which in particular introduced FIT and FIP support systems) plans to extend the support system for CHP installations after 2018, as well as plans to increase the obligation to sell 100 per cent of generated electricity on the commodities exchange remain hot topics in the electricity sector in Poland.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The president of the OCCP has the general authority to investigate and prosecute anticompetitive practices that have or may have an effect on the Polish market. Certain powers relating to the development of competition in the energy market are also vested in the president of the ERA. If the anticompetitive practice may affect trade between member states, it can also be investigated and prosecuted by the European Commission.

Refer to questions 34 and 35 for further information on manipulative practices.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

There are no sector-specific criteria for the energy sector under Polish or EU competition rules and therefore the general provisions apply.

Under both the national and the EU rules, the prohibited anticompetitive conduct includes: entering into anticompetitive agreements (ie, agreements between undertakings), the aim or effect of which is preventing, restricting or distorting competition; and any conduct that amounts to an abuse of a dominant position on the relevant market (which under Polish law is presumed at the level of 40 per cent market share).

Certain agreements that are prima facie anticompetitive, may be – in certain situations – exempt from the prohibition. Conduct of a dominant entity that is prima facie abusive, will not be considered as anticompetitive if it is objectively justified.

Under EU Regulation on Wholesale Energy Market Integrity and Transparency (REMIT), manipulation in general means entering into any transaction or issuing any order to trade in wholesale energy products which gives, or is likely to give, false or misleading signals as to the supply of, demand for, or price of wholesale energy products (which in certain situations may also include energy products sold to final customers).

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

If a business entity, even unintentionally, infringes competition law by entering into anticompetitive agreements or by abusing dominant position, the president of the OCCP has the power to: issue a decision ordering the business entity to cease or modify its conduct, as well as imposing structural or behavioural remedies proportionate to the anticompetitive behaviour; impose on the business entity a fine of up to 10 per cent of its annual turnover; and impose on each individual in a managerial function who intentionally, through his or her actions or omissions, allowed the execution of the anticompetitive agreement (but not the abuse of the dominant position) a fine of up to 2 million Polish zloty (approximately €470,000).

Agreements or other legal actions that are anticompetitive or abusive are null and void by law. There may also be other negative consequences of infringing competition law, in particular private

enforcement (ie, civil law claims of third parties that incurred a loss owing to the infringement).

The European Commission has its own set of powers with regard to anti-competitive practices that may affect trade between member states.

Refer to questions 34 and 35 for further information on manipulative practices.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Polish law places several restrictions relating to the ownership structure of energy companies. The Act on Control of Certain Investments enables the Minister of Energy to prohibit the acquisition of shares in an energy company if the transaction is deemed contrary to the interests of national security, human rights or environmental protection. Furthermore, the Act on Special Rights of the Minister of Energy includes provisions granting the minister similar powers, when the transaction is found to threaten the critical infrastructure. Also, the Act on Rules of Management of National Assets prohibits the government from selling state-owned shares in several companies listed in the act, including major energy companies.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Apart from general rules related to the construction of transmission network and described in question 9 above, it needs to be considered that the interconnectors combine two different national territories and thus a procedure related to the transboundary environmental impact may be required. Under this procedure, consultations are planned between the countries and local communities concerned.

Also, conclusion of the interoperating agreement with the neighbouring TSO will be necessary, to determine the principles of the prospective interconnector management.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Apart from the general rules related to electricity trading resulting mainly from the Energy Law and the secondary legislation to it, some specific provisions regarding cross-border supply have been set forth in the Transmission Grid Code (this includes specific settlements for the transmission services with the use of the interconnector). The TSO is obliged to ensure non-discriminatory access to interconnectors in accordance with the EU legislation and the TPA rule.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

In view of REMIT, Polish legal regulations on commodities exchange and on financial instruments, as well as in view of internal regulations of PPE, market manipulation – which in particular may cover transactions between electricity utilities and their affiliates – is prohibited.

In addition, energy utilities and their affiliates should refrain from any transactions that could result in the breach of the unbundling rules (separation of, eg, transmission or distribution activity from other types of activity on the energy market, such as trading).

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The president of the ERA is entitled to perform an inspection to establish whether a breach of the obligations determined for energy market participants in REMIT (this includes market manipulation restrictions) has occurred. Also, the Polish Financial Supervision Committee has similar authority with regard to transactions occurring on the commodities exchange (PPE).

Failure to observe market manipulation restrictions is subject to criminal prosecution and may result in a fine, limitation of liberty, or imprisonment. In addition, failure to observer the unbundling rules may result in financial penalty imposed by the President of the ERA in the amount up to 15 per cent of the revenue made under the relevant licence in the previous fiscal year.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Electricity legislation and policy in Portugal is defined at both a national level as well as the level of the European Union.

At the level of the European Union electricity policy is currently based on the 'Energy 2020' strategy, focusing on five priorities:

- achieving an energy efficient Europe;
- building a truly pan-European integrated energy market;
- empowering consumers and achieving the highest level of safety and security;
- extending Europe's leadership in energy technology and innovation; and
- strengthening the external dimension of the EU energy market.

Regarding European Union legislation, the main instruments are Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009, which sets out common rules for the internal market of electricity, and Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009, which promotes the use of energy from renewable sources. Also relevant is Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012, on energy efficiency.

In Portugal, government policy for the energy sector (including electricity) is set out under the National Plan of Action for Energy Efficiency 2013–2016 (PNAEE 2016) and the National Plan of Action for Renewable Energies 2013–2020 (PNAER 2020), both approved by Council Resolution No. 20/2013 of 10 April. These policy instruments aim to:

- comply with all commitments (on energy efficiency and renewable energy) assumed by Portugal in an efficient manner from an economic viewpoint;
- significantly reduce greenhouse gas emissions, within a framework of sustainability;
- buttress diversification of primary energy sources, resulting in the increase of Portugal's supply security;
- increase the economy's energy efficiency, in particular in the public sector, resulting in the decrease of public spending and efficient use of resources; and
- contribute to the increase in the economy's competitiveness, through reducing consumption and costs associated with the management of companies and home economics, freeing resources to stimulate internal demand and new investments.

The main legislative instruments for the electricity sector are Decree-Laws Nos. 29/2006 of 15 February (which establishes the general framework for the organisation and functioning of the Portuguese electricity system – SEN) and 172/2006 of 23 August (which regulates the legal regime applicable for pursuing the activities of generation, transmission, distribution and supply of electricity and for the organisation of electricity markets), which were last amended, respectively, by Law No. 42/2016 of 28 December and Decree-Law No. 114/2017 of 29 December.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Under the Portuguese electricity market framework, activities relating to generation, supply and management of organised markets are liberalised and only require previous compliance with a licensing or authorisation or registration process. Transmission, distribution and supply of last resort are regulated activities provided through the award of licences or concessions.

Furthermore, transmission and distribution of electricity are subject to an unbundling regime, whereby: the company that operates the electricity national transmission network (TSO) may not integrate any group of companies dedicated to the generation or supply of electricity or natural gas; and operators of distribution networks (DSO) must be independent from a legal, organisational and decision-making process standpoint from other activities unrelated to distribution. Distribution companies that serve fewer than 100,000 clients are not subject to the legal unbundling regime, but they must still implement accounting and functioning unbundling measures.

It is also worth noting that the wholesale of electricity in Portugal is organised through an Iberian (ie, comprising Portugal and Spain) integrated electricity market, MIBEL. MIBEL operates with an electricity spot market, which includes daily and intraday markets that are managed by a Spanish market operator, Mercado Ibérico de Energía - Polo Español, SA (OMEL), and an electricity forward market that is managed by a Portuguese market operator, Pólo Português, SGMR, SA (OMIP).

Wholesale of electricity may also be performed through other means, such as bilateral power purchase agreements and procurement of electricity or derivative electricity instruments in non-regulated platforms. Electricity generators can also participate in system service markets for the sale of electricity or electricity capacity (with the purposes of ensuring reliability and security in electricity supply).

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

In general terms, any person wishing to set up an electricity generation plant in Portugal will be subject to a prior control procedure, whether informing the licensing entity of such intention or requesting the attribution of a generation licence. The permit entitles the applicant to proceed with the construction of the power plant, provided that a construction licence is issued by the relevant municipality and all applicable legal regimes with regards to environmental impact, waste or hydric resources are complied with. The applicant is required to attach several documents to the communication or request, namely and when applicable, an environmental impact statement.

Following the successful obtainment of the relevant permit and the construction of the power plant, the owner shall request an inspection of the facilities and the attribution of an operation licence, which authorises the commencement of the power plant's industrial operation.

If generation is carried out under a 'special regime' of electricity generation (notably through renewable energy sources or

co-generation) with guaranteed remuneration (such as a feed-in tariff), the promoters must be selected upon the conclusion of a public tender procedure or a proceeding that allows any interested parties that comply with the applicable requirements to be established, as per fair and transparent criteria, determined by the ministry responsible for the energy sector. The promoter must then request a network interconnection point to be allocated by the network operator. Once the network interconnection point is secured (which may entail the provision of a bond), the aforementioned licensing formalities apply.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Access to transmission and distribution networks of electricity must be regulated through objective, transparent and non-discriminatory criteria, in order to ensure all market participants have the same opportunities and promote competition between the industry's players.

Access to regulated infrastructures is subject to the following key principles:

- safeguard of the public interest, including the maintenance of security of supply;
- equal treatment and opportunities for all users;
- reciprocity on the use of interconnections by the entities responsible for the management of the grids to which the national electricity system is connected; and
- payment of the applicable tariffs.

Despite the principle of equal treatment and opportunities for all users and for the purposes of ensuring an efficient use of energy sources available at each given moment, both the TSO and the DSOs are bound to grant priority access to the grid for electricity generated using renewable energy sources (RES) (except for electricity generated by hydropower plants with an installed capacity greater than 30MW). Also, network operators must implement adequate measures aiming to prevent or minimise limitations to the transmission and distribution of electricity generated using RES.

Additionally, in general terms, applicants who wish to install a power plant shall be granted a generation licence (and proceed with the plant's construction and operation) only if the relevant network operator confirms that there is enough grid capacity for such project. If the electricity is not purchased under the terms of a power purchase agreement entered into by and between the generator and the supplier of last resort, a grid use agreement must be executed between the generator and the relevant grid operator.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Following the enactment and transposition of several European Union directives on renewable energy, Portugal has been committed to the promotion of renewable energy through economic incentives attributed to renewable energy generation and the setting of mandatory national targets for the overall share of energy and for the share of energy from renewable sources in transportation.

Economic incentives to renewable energy generation were established through feed-in tariffs from which renewable generation plants were able to benefit, as per the provisions of Schedule II of Decree-Law No. 189/88 of 27 May (as amended). This statute set out a specific formula for calculating the tariffs to be paid to generators, for the electricity generated by power plants using renewable energy (excluding large hydropower plants), that initiated their licensing procedure prior to the entering into force of Decree-Law No. 215-B/2012 of 8 October. Co-generation (combined generation of heat and electricity) also benefits from a favourable remuneration regime although through other statutory provisions.

Renewable energy generators benefiting from feed-in tariffs also enjoy priority over conventional generators in dispatching their energy to the grid and the guarantee that electricity generated is purchased by an offtaker at the feed-in tariff rate.

Notwithstanding these feed-in tariffs still being in force for currently operating renewable energy plants:

- feed-in tariff periods were curbed for small hydro and wind power generators pursuant to Decree-Law No. 35/2013 of 28 February (although wind generators and the government were able to negotiate a 'net present value-neutral' payment to SEN to partially offset the effects of such reduction to the feed-in tariff period); and
- there is currently no applicable feed-in tariff for renewable generation plants with generation licence granted after 9 April 2013 (as the relevant legislation has not yet been enacted), with the exception of renewable co-generation and small scale generation.

Regarding, on the other hand, renewable energy targets, Decree-Law No. 141/2010 of 31 December, as amended by Decree-Law no. 68-A/2015, of 30 April (transposing Directive 2012/27/UE into national law) established national targets for renewable energy in gross final consumption of energy and for the share of energy from renewable sources in transportation.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The main policy instrument enacted for the purposes of fighting climate change is Resolution of the Council of Ministers No. 56/2015 of 30 July, which approved the Strategic Framework for Climate Policy, the Climate Change National Programme and the National Strategy for Climate Change Adjustment. This Resolution, among other things, also determined that Portugal must reduce its greenhouse gas emissions from 18 per cent to 23 per cent by 2020 and from 30 per cent to 40 per cent by 2030, both calculated on the basis of the 2005 levels, contingent on the results of European negotiations.

The Resolution also set the following targets, in line with the commitments assumed by Portugal and the European Union under the Kyoto Protocol: an increase in the proportion of renewable energies in final energy consumption of 40 per cent and an increase in energy efficiency through a reduction of 30 per cent over the baseline energy in 2030, which translates into an energy intensity ratio of 101 tep/per M€ of gross domestic product.

In addition, Portugal has transposed Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 concerning the greenhouse gas emission allowance trading scheme of the Community into law (Decree-Law No. 38/2013 of 15 March). Revenues from auctioning of said greenhouse gas emission allowances for the promotion of renewable energies are regulated by Ministerial Order No. 3-A/2014, and include compensation for renewable energy 'overcosts' in the tariff system and the funding of the Environmental Fund (a government-sponsored scheme that, among other things, has the ability to financially support renewable energy and energy efficiency projects).

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Although pumped hydro storage has existed in Portugal for several decades and battery storage is expected to gain traction in the near future, energy storage is not directly regulated under the main legislative bodies of electricity regulation (notably Directive 2009/72/EC and Decree-Law No. 29/2006 of 15 February).

Also, no specific research and development incentives for energy storage are attributed pursuant to the electricity regulatory framework in Portugal.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Portugal does not generate energy from nuclear energy sources and its only nuclear reactor has been built and is operating for investigation and education purposes only.

There has been an ongoing public debate in Portugal (notably in the 1970s and in the first decade of the third millennium) regarding the merits and disadvantages of having nuclear power and in particular in pursuing the construction of a nuclear power plant, but no project ever came to fruition and apparently no licences for such purposes were attributed.

Notwithstanding the multiple international treaties Portugal is a party to regarding the use of atomic energy (notably the EURATOM treaty), there is currently no specific government policy towards encouraging or discouraging the promotion of nuclear energy.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Electricity transmission is carried out through the national transmission network; rights to construct and operate the national transmission network are exercised under an exclusive concession granted by the Portuguese government for a 50-year period (currently until 2057). The incumbent TSO is REN – Rede Eléctrica Nacional, SA (REN), a subsidiary of REN – Redes Energéticas Nacionais, SGPS, SA.

Portuguese law establishes a certification procedure for the transmission system operator (in order to ensure compliance with unbundling obligations), which is carried out by the Portuguese Regulatory Authority for Energy Services (ERSE). On 9 September 2014, ERSE issued a decision certifying that REN complies with the relevant legal requirements to be considered a transmission system operator compliant with unbundling obligations, subject to the conditions set out therein.

In turn, layout and expansion of the national transmission network is based on a 10-year plan (reviewed every two years) for development and investment of the network (PDIRT), which takes into account:

- the supply safety monitoring report prepared by the government;
- technical characteristics of the network and electricity supply and demand; and
- coordination with the planning of the networks which are interconnected with the national transmission network (including neighbouring networks).

PDIRT must be submitted to the Directorate General of Energy and Geology (DGEG) and contain, at least:

- information on infrastructure to be constructed or modernised in the following 10-year period, including indication of the investment decided by the TSO (and, among these, those projects that are to be executed within the next three years), and respective execution calendar;
- obligations arising from MIBEL and objectives set out under Regulation 714/2009 of the European Parliament and of the Council of 13 July 2009; and
- joint measures adopted by the Agency for the Cooperation of Energy Regulators and European Network of Transmission System Operators for Electricity, notably the non-binding 10-year plan for a European-wide transmission network.

PDIRT is subject to public consultation, prior opinion of ERSE, discussion by the Parliament and approval by the member of government responsible for energy affairs.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The TSO must provide non-discriminatory and transparent access to the transmission network. In fact, the legal unbundling criteria approved by Portuguese law eliminate and prevent the risk of discrimination with regards to transmission network access.

Access to the networks and interconnections is automatically recognised for any interested entity upon completion of the connection of the relevant installation to the network, which in itself may be subject to licensing procedures.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

At the moment there are no such government policies to encourage or require expansion of the transmission grid. As a matter of fact, taking into account the economic and financial constraints the country faced at the start of the decade coupled with efforts made to reduce the tariff deficit of the SEN, government policy has been working the other way around (ie, curbing expansion in the transmission network) for the purposes of keeping network access tariffs down.

This effort to curb expansion in the transmission network in order to restrict increases in network access tariffs is evident in the opinions of ERSE regarding the latest PDIRTs.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Transmission activity is subject to ERSE's regulation, which determines the tariffs applicable to the provision of such services by the TSO. The determination of such tariffs must comply with certain legal principles that, in particular, aim at guaranteeing transparent and efficiency-driven pricing, as well as the protection of electricity consumers and equality of treatment. The methodology for the calculation of the mentioned tariffs is approved by ERSE's Tariff Regulation of the electricity sector.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The entity responsible for ensuring grid reliability is the TSO. To achieve this goal the TSO uses its attributions as the global manager of SEN, notably through its functions of system technical management, system services procurement and market-making, energy planning and transmission network planning.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution occurs through the national distribution network, consisting of a medium- and high-voltage network, and through the low-voltage distribution networks.

Currently, the national distribution network is operated through an exclusive concession granted by the Portuguese state. This exclusive concession for the activity of electricity distribution in high and medium voltage levels is held by EDP Distribuição, a subsidiary of EDP – Energias de Portugal, SA, pursuant to article 70 of Decree-Law No. 29/2006 of 15 February, as a result of converting the licence held by EDP Distribuição under the former regime into a concession agreement, which was signed on 25 February 2009, for a 35-year term. The terms of the concession are set forth in Decree-Law No. 172/2006 of 23 August.

The low-voltage distribution networks continue to be operated under concession agreements granted by the municipalities.

Layout and expansion of the national distribution network is based on a five-year plan (reviewed every two years) for development and investment of the network, which takes into account and facilitates measures of demand management and electricity distributed generation.

PDIRD must be submitted to the DGEG and contain, at least:

- technical characteristics of the distribution network (notably substation installed capacity);
- the supply safety monitoring report prepared by the government;
- safety standards for the planning of the distribution network; and
- requests for buttressing of the delivery capacity presented by concessionaires of low-voltage networks and generation licences, as well as other grid connection requests by generation facilities.

PDIRD is subject to public consultation, prior opinion of ERSE, discussion by the Parliament and approval by the member of government responsible for energy affairs.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Access to the distribution network must be regulated through objective, transparent and non- discriminatory criteria, in order to ensure all market participants have the same opportunities and promote competition between the industry's players, pursuant to the regulations put into force by ERSE regarding access to the networks, infrastructures and interconnections.

As such, all entities which are considered market participants in the SEN (in particular generators, suppliers and consumers of electricity) will be eligible to access the distribution network.

Access to regulated infrastructures is subject to the following key principles:

- safeguard of the public interest, including the maintenance of security of supply;
- equal treatment and opportunities for all users;
- reciprocity on the use of interconnections by the entities responsible for the manage-ment of the grids to which the national electricity system is connected; and
- payment of the applicable tariffs.

As a consideration for the access to regulated infrastructures, users must pay access tariffs, which are determined by ERSE on an annual basis and must be equal for all categories of users.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

No. As for the transmission network, government and regulatory policy (notably feedback to the distribution network plans prepared by the distribution network operator) has been directed at restraining expansion of the distribution network to ensure that increases in network access tariffs are also limited.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Distribution activity is subject to ERSE's regulation, which determines the tariffs applicable to the provision of such services by the DSO. The determination of such tariffs must comply with certain legal principles that, in particular, aim at guaranteeing transparent and efficiency-driven pricing, as well as the protection of electricity consumers and equality of treatment. The methodology for the calculation of the mentioned tariffs is approved by ERSE's Tariff Regulation of the electricity sector.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Electricity supply is open to competition, subject only to a registration regime before the DGEG. Suppliers may freely buy and sell electricity. For this purpose, they have a right of access to the national transmission and distribution networks upon payment of access tariffs set by ERSE.

As required by the Electricity Directive, the Electricity Framework also establishes a last-resort supplier that is subject to licensing by DGEG and regulation by ERSE. The last-resort supplier is responsible for the purchasing of all electricity generated by special regime generators which benefit from a guaranteed remuneration scheme (ie, feed-in tariff), and for the supply of electricity to customers who purchase electricity under regulated tariffs, and is subject to universal service obligations. The last-resort supplier is expected to exist until the free market is fully competitive.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There are tariffs concerning sales of electricity by a supplier of last resort, which are subject to extensive regulation. Final customer tariffs applicable to the regulated market are differentiated by voltage level, tariff option and the period of electricity consumption. These tariffs, when set, should be uniform throughout mainland Portugal within each voltage level, subject to specified exceptions based on volume.

The price of electricity sold by suppliers operating under a 'liberalised' market system is not administratively set and as such said suppliers may define the price they wish. Nevertheless, consumers must also pay network access tariffs and 'global use of system' tariffs in addition to the electricity price set by suppliers.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

In Portugal, the wholesale market for electricity is liberalised and organised at an Iberian level (through the MIBEL), without prejudice of the possibility of market agents entering into bilateral power purchase agreements.

Thus, wholesale rates are generally determined by supply and demand, notwithstanding special rules applicable to offtaker purchases and sales of electricity.

The offtaker, which is also the supplier of last resort, is obliged to: acquire the electricity generated from renewable and co-generation plants which benefit from a feed-in tariff; and acquire electricity necessary to supply its clients through MIBEL in the quantities and at auctions defined by DGEG. All electricity purchased by this entity which exceeds the amount of power required to supply its clients must be resold in the market.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity suppliers must comply with certain public service obligations to ensure the quality and continuity of supply, as well as consumer protection with respect to prices, access tariffs and access to information in simple and understandable terms.

As required by Directive 2009/72/EC, Decree-Law No. 29/2006 also establishes a last-resort supplier that is subject to licensing by DGEG and regulation by ERSE. The last-resort supplier is responsible for the purchasing of all electricity generated by special-regime generators which benefit from a guaranteed remuneration scheme, and for the supply of electricity to customers who purchase electricity under regulated tariffs, and is subject to universal service obligations. The last-resort supplier is expected to exist until the free market is fully competitive, as provided for in Directive 2009/72/CE.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Responsibility for regulation of the Portuguese energy sector is shared between DGEG, ERSE and the Portuguese Competition Authority, according to their respective functions and responsibilities.

23 Scope of authority

What is the scope of each regulator's authority?

The national regulatory authority of the electricity, natural gas and liquefied petroleum gas industries is ERSE, a public entity with administrative and financial independence. ERSE's bylaws were enacted by Decree-Law No. 97/2002 of 12 April, and amended by Decree-Law No. 212/2012 of 25 September and by Decree-Law No. 57-A/2018, of 13 July.

ERSE is in charge of regulation, supervision and sanctioning in the aforementioned sectors, from generation to supply. Recently, Law No. 9/2013, which came into force on 28 January 2013, established the Energy Sector Sanctioning Regime, which substantially reinforced

ERSE's sanctioning competence and powers. Later, Decree-Law No. 84/2013 of 25 June revised ERSE's bylaws, completing the implementation of Directives 2009/72/EC and 2009/73/EC.

Alongside ERSE, the DGEG, a state-administered entity with financial independence, has the task of implementing and developing the state's policies regarding energy matters and the exploitation of geological resources.

As such, and in most cases, the DGEG is the competent entity for granting licences and other administrative authorisations concerning energy related activities, such as generation or exploration licences.

The Portuguese Competition Authority enforces rules concerning anti-trust provisions contained in the Treaty on the Functioning of the European Union and in Council Regulation (EC) No. 139/2004 of 20 January 2004. The Portuguese Competition Authority is empowered to fully apply those rules in respect of the economic principle of market economy and free competition, in view of an efficient functioning of the markets, an effective distribution of resources and the interests of consumers.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

DGEG, although it has 'legal autonomy' to execute administrative actions as well as financial independence, is an entity that is part of the central government and therefore may not be considered as being independent.

ERSE and the Portuguese Competition Authority, on the other hand, beyond the privilege of legal and financial autonomy, also enjoy full independence (organic, functional and technical) from the central government and have broad supervisory, regulatory and sanctioning powers.

Independence of ERSE from the government is only constricted by: approval by the latter of the budget and annual accounts; and the government's prerogative to establish the general guidelines of energy policy, notably in matters related to security of supply, consumer rights, negotiation and execution of international agreements in the energy area, energy efficiency, environmental sustainability and sustainability of the SEN.

Regarding the Portuguese Competition Authority, its independence is limited by (besides applicable legislation) an approval by the government of its budget and annual accounts.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions adopted by the regulators can be challenged in general on the grounds of the non-conformity of such decisions with legal or regulatory provisions or with general principles of public or criminal or misdemeanour law (depending on the decision adopted).

Decisions of DGEG may be appealed internally and may further be challenged before the administrative courts pursuant to general public procedural law provisions.

Decisions of ERSE imposing misdemeanour liability are appealable before a specialised court, the Court for Competition, Regulation and Supervision; other decisions shall be challenged before the administrative courts pursuant to general public procedural law provisions.

Decisions of the Portuguese Competition Authority imposing misdemeanour liability or concerning administrative procedures pursuant to the Portuguese Competition Act (such as 'merger control' procedures) are also appealable to the Court for Competition, Regulation and Supervision.

Update and trends

Even though Portugal has been quick to encourage renewable energy generation, the government has yet to approve the regime that will establish the new 'post feed-in-tariff' guaranteed remuneration regime for renewable energy generation. This topic is particularly relevant considering both the European Commission's proposal for the Renewables directive in the context of the above mentioned package and its Guidelines on State aid for environmental protection and energy for the period of 2014–2020.

In any case, there are currently renewable energy projects (notably solar) that are now being developed without guaranteed remuneration (and with third-party financing secured). Electricity generated by these projects is being sold via bilateral power purchase agreements or wholesale in regulated markets..

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The regulatory body that has the authority to approve or block mergers or other changes in control over businesses in the energy sector is, in general, the Portuguese Competition Authority. Other entities, such as ERSE and the central government, may also play a role in 'merger control' review of energy assets, in particular if such transactions involve the TSO or the DSO (entities subject to unbundling requirements) or to assets considered strategic under the terms of Decree-Law No. 138/2014, of 15 September.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Merger control review shall be triggered by:

- a merger between two or more hitherto independent undertakings;
- the acquisition of control, by one or more undertakings, over other undertakings or parts of other undertakings to which a market turnover can clearly be attributed; and
- the creation of a full-functioning joint venture on a lasting basis, provided that certain market share or turnover thresholds are exceeded.

Transactions meeting said thresholds are subject to mandatory notification and cannot be implemented before a non-opposition decision is issued by the Portuguese Competition Authority.

A decision by the Portuguese Competition Authority for merger control review must generally be taken within (counting from the date of filing of the corresponding request): 30 business days (if only an 'initial investigation' is required); and 90 business days (if an 'in-depth investigation' is required).

In the investigation, the Portuguese Competition Authority shall assess whether the transaction will cause a 'material hindrance to effective competition'. If it does, the Authority shall issue a decision prohibiting the completion of the deal (without prejudice of the intervening parties negotiating remedies in order for the transaction to be cleared).

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The Portuguese Competition Authority is the entity that is primarily responsible for preventing and prosecuting anticompetitive and manipulative practices in the electricity sector.

ERSE is in charge of: fostering and ensuring compliance with competition provisions in the electricity sector; and reporting to the Portuguese Competition Authority any anticompetitive practices in the

electricity sector of which it has knowledge, and further collaborating with the latter in the corresponding misdemeanour procedure.

ERSE must also issue an opinion prior to a decision being taken by the Portuguese Competition Authority on alleged anticompetitive practices in the electricity sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Conduct by electricity companies is generally deemed to be anticompetitive if it breaches the provisions of articles 101 and 102 of the Treaty on the Functioning of the European Union and articles 9 and 11 of the Portuguese Competition Act, the substantive content of which is essentially equivalent to the Treaty provisions. In general terms, such provisions make the following unlawful:

- agreements between undertakings, and concerted practices or decisions by associations of undertakings, which have the effect of impeding, distorting or restricting competition (entirely or partially) in a material manner; and
- the abuse of market power (dominant position), in particular exclusionary abuse aimed at harming the dominant operator's competitors and preventing them from competing effectively in the market.

For the purposes of assessing whether said rules have been breached, the Portuguese Competition Authority bases its decisions on the interpretation of said legal provisions coupled with support of precedents (Portuguese and European) from regulatory practice and decisions in prior infringement proceedings and from court rulings.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The following powers (among others) are exercised by the Portuguese Competition Authority and may be relevant to the effect of precluding or remedying anticompetitive practices or, more generally, in deterring anticompetitive practices. The following may be used:

- unannounced on-site inspections to target companies' premises (ie, dawn raids);
- mandatory requests for information and documentation; and
- in certain cases where the Portuguese Competition Authority suspects anticompetitive practices, notably in cases not involving restrictions by object, informal negotiations between the Authority and the companies involved may be held with the purpose of designing commitments to remedy and put an end to said anticompetitive practices without the imposition of fines.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Decree-Law No. 138/2014, of 15 September introduced a legal framework to safeguard strategic assets essential to ensure national defence and security and to guarantee the supply of services fundamental to the public interest related to the energy, transport and communications sectors. Under the legal framework, a change in energy utilities' control structure involving direct or indirect control by a person or persons from a country that is not a member of the European Union or the European Economic Area may be denied by the Portuguese government under certain circumstances if there are real and serious reasons to believe that national defence and security or the safety of supply of energy are at risk.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Interconnectors with other national transmission networks are constructed and operated by the TSO, pursuant to the attributions granted to it under the respective concession agreement.

Interconnectors depend on bilateral or regional agreements for their construction because they are by definition cross-border. In the European Union, in particular, interconnectors are planned by a grid development plan prepared by European TSOs (through ENTSO-E, the European Network of Transmission System Operators).

In this respect, several interconnectors may be deemed as being projects of common interest (Portugal–Spain energy corridors are included in this category) pursuant to Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013, which sets out that said projects are granted 'priority status', entailing streamlined licensing procedures and, potentially, access to incentives and European financial assistance.

As stated above, the TSO must take into account the projects envisaged by this pan-European network development plan in its own plan for the transmission network, the PDIRT.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

EU electricity cross-border flows are governed primarily by Regulation (EC) No. 714/2009 of the European Parliament and of the Council of 13 July 2009.

This statute provides rules concerning:

- compensation between transmission system operators;
- grid access tariffs;

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- information exchange; and
- general principles of congestion management.

In accordance with said Regulation, fees applicable by TSOs in particular must be transparent, take into account the need for network security and reflect actual costs incurred insofar as they correspond to those of an efficient and structurally comparable network operator and are applied in a non-discriminatory manner. Tariffs must also be non-distance related.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

From a regulatory perspective (ie, not taking into consideration company or tax law issues) restrictions on transactions between utilities and affiliates apply to players in the electricity value chain which are integrated in vertically integrated companies, in particular the TSO (if the latter had been certified as an 'Independent Transmission Operator', pursuant to the provisions of the Electricity Directive, which is not the case) and DSO, pursuant to unbundling obligations implemented by the Electricity Directive.

Notable restrictions include:

- the Independent Transmission Operator (currently not the case regarding the TSO) cannot subcontract personnel or render services to undertakings which are part of the vertically integrated company, unless such services are not discriminatory to network users and said services are approved by ERSE;
- a DSO must ensure that its image and communication are different from the remainder of the companies acting in the SEN, including if said DSO is part of an integrated utility; and
- a DSO that belongs to a vertically integrated utility must have the necessary human, technical, financial and material resources to operate, maintain and develop the network, and it must have effective and independent decision-making power relative to the vertically integrated utility.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ERSE has powers to monitor compliance with the aforementioned rules concerning restrictions on transactions between utilities and affiliates and to initiate misdemeanour procedures in case of breach of such rules.

South Africa

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Governmental policy
The government's National Development Plan 2030 (NDP) was prepared by the National Planning Commission in 2012. The NDP envisages that, by 2030, South Africa will have an energy sector that promotes:

- economic growth and development through adequate investment in energy infrastructure;
- social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households; and
- environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change.

In addition to the NDP, the Medium Term Strategic Framework 2014 to 2019 was introduced in August 2014 and articulates the government's commitment to implement the NDP.

South Africa's energy plan is largely based on the principles set out in the NDP in the form of the Integrated Energy Plan (IEP) and the Integrated Resource Plan (IRP). The IEP is the overarching energy plan of which the IRP forms an integral part. The purpose of the IEP is to 'provide a roadmap of the future energy landscape for South Africa' that guides future energy infrastructure investments and policy development. The focus of the IRP is on electricity supply that will allow the country to meet its forecasted electricity demand with the least cost to the country and other considerations such as environmental sustainability and water usage. Both plans are regularly updated by the Department of Energy (DoE) and the draft updated IRP 2018 was published for public comment in August 2018 (Draft IRP). The IEP and IRP are key policies that will guide South Africa's future energy mix. Any new generation capacity under the IRP is procured in accordance with ministerial determinations issued by the DoE. It is expected that the Draft IRP will be placed before cabinet for approval by the end of 2018.

The White Paper on Energy Policy, 1998, was implemented to focus on the following key objectives:

- increasing access to affordable energy services;
- improving energy governance;
- stimulating economic growth;
- managing energy related environmental and health impacts; and
- securing supply through diversity.

South Africa's energy policy is currently being updated through the aforementioned revisions to the IEP and IRP. The IRP is considered a 'living plan' that is intended to be updated every two years. The DoE has indicated that the Liquid Fuels and Gas Utilisation Master Plans will be released in 2018 that aim to introduce natural gas to the energy sector, whether imported via regional pipelines or liquefied natural gas (LNG) terminals at strategic port locations, which will contribute towards electricity generation.

Legislative framework
South Africa's electricity laws comprise of various acts, regulations and rules. The key legislation includes:

- the National Energy Regulator Act, 2004 (NERA), establishes a National Energy Regulator (NERSA) for the regulation of the electricity, piped-gas and petroleum pipeline industries;
- the Electricity Regulation Act, 2006 (ERA), establishes a national regulatory framework for the electricity supply industry, makes NERSA the custodian and enforcer of the national electricity regulatory framework, provides for licences and registration as the manner in which generation, transmission, distribution, reticulation, trading and the import and export of electricity are regulated and also regulates the reticulation of electricity by municipalities; and
- the National Energy Act, 2008, directs the DoE to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, while taking into account environmental management requirements.

In addition, the ERA makes provision for NERSA to publish certain guidelines and codes of conduct and practice, or to make rules under the relevant electricity regulations. Various municipalities have also adopted their own electricity by-laws for their specific areas.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The electricity sector in South Africa is still dominated by Eskom Holdings SOC Limited (Eskom), the integrated state-owned power utility. Eskom generates approximately 95 per cent of the electricity in South Africa. Eskom's generation capacity is predominately through its fleet of coal-fired power stations and nuclear power station in Koeberg.

Eskom owns and controls the national transmission grid. The responsibility for distributing electricity to end-users is shared between Eskom's distribution unit and various municipalities.

Electricity tariffs are regulated by NERSA. NERSA sets the tariffs that Eskom can charge for generating electricity and that Eskom and municipalities can charge for distribution. Municipalities enter into bulk supply agreements with Eskom, in terms of which the municipalities buy electricity and distribute the supply to customers. The sale of electricity contributes significantly to the revenue of municipalities owing to municipal surcharges added to the Eskom tariff.

The government took the decision to divide the power generation capacity between Eskom and independent power producers (IPPs). The introduction of IPPs was aimed at reducing the funding burden on government and to introduce new generation technologies that will diversify the future electricity supply options and to support South Africa's international commitments to address climate change. This resulted in the DoE launching IPP procurement programmes such as the Renewable Energy IPP Procurement Programme (REIPPP).

Since 2011, the DoE has successfully procured approximately 92 renewable energy projects across various technologies under the REIPPP Programme with a total capacity of 6422MW. The most recent were the 27 power purchase agreements signed with the IPPs and Eskom in April 2018. Under the IPP procurement programmes, the DoE is designated as the procurer and Eskom the off-taker of the electricity through its single buyer office.

It is anticipated that IPPs will contribute towards an increasing portion of South Africa's electricity generation in future and to support the objectives of the NDP. The DoE has indicated that it intends releasing a further bid window under the REIPPP Programme, continuing with the first bid window of the Coal Baseload IPP Procurement Programme and commencing with the Gas to Power IPP Procurement Programme on a similar model to the other IPP procurement programmes.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

For the purpose of operating a generation facility, NERSA is responsible for issuing electricity generation licences and registrations for such facilities. No person may operate any generation facility without a licence, save for certain exemptions set out in Schedule II of the ERA or determinations made by the Minister of Energy. The exemptions mostly relate to the operation of smaller generation facilities of no more than 1MW and those generation facilities operated for own use or not connected to the national grid. NERSA is required to consider the IRP and the applicable ministerial determinations when granting licences for the operation of generation facilities.

The general authorisations for constructing generation facilities include environmental authorisations whereby the developer must conduct an environmental impact assessment (EIA) and secure an environmental authorisation in terms of the National Environment Management Act, 1998.

Some of the other key permits required for generation facilities include:

- water use licences in respect of certain water use activities under the National Water Act, 2008;
- atmospheric emissions licences under the National Environmental Management: Air Quality Act, 2004;
- waste management licences under the National Environmental Management: Waste Act, 2008;
- biodiversity permits under the National Environmental Management: Biodiversity Act, 2004;
- zoning consents and building plan approvals from the relevant municipal authorities;
- consents for obstacles in respect of the Civil Aviation Regulations, 2011; and
- permissions for certain activities affecting heritage resources under the National Heritage Resources Act, 1999.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

NERSA is the custodian of the South African Grid Code. NERSA's role is to ensure non-discriminatory access to the transmission and distribution systems and the safe and reliable operation of the electricity infrastructure.

The South African Grid Code specifies the minimum technical and design requirements that customers must adhere to when connecting or seeking to connect to the transmission grid. A customer seeking to connect to the transmission grid or to modify an existing connection must apply in writing to the National Transmission Company (NTC).

NERSA has established a grid connection code specifically for renewable energy power generation plants connected either to the transmission or to the distribution system.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The NDP identifies South Africa's long-term plans to meet its economic, social and environmental needs. The NDP proposes diversity and alternative energy resources and electricity supply options. The IRP has also been developed to ensure that the preferred energy mix includes renewable energy and cogeneration technologies.

The Minister of Energy (in consultation with NERSA) is vested with the power under the ERA to determine the types of energy sources from which electricity must be generated. Various ministerial determinations for renewable energy have been issued in respect of the procurement of 14,725MWs from IPPs. The renewable energy technologies under these determinations include concentrated solar power (CSP), wind, solar photovoltaic (PV), biogas, biomass, landfill gas and small hydropower. The procurement of renewable energy technologies is also driven by South Africa's international commitments to address climate change.

The determination for cogeneration was amended in 2015 to increase the capacity to be procured from IPPs from an initial 800MW to 1800MW. The types of generation sources were also amended to include:

- waste heat or furnace off gas;
- cogeneration (ie, the simultaneous generation of electricity and useful thermal energy from a common fuel source); and
- an energy source that is a co-product, by-product, waste product or residual product of an industrial process or sustainable agricultural or forestry activity.

The Draft IRP has a substantial allocation of wind (11,442MW) and solar PV (7958MW) that is planned to be installed by 2030. There is; however, no planned allocation for cogeneration technologies in the latest Draft IRP.

To date, the DoE has procured 92 renewable energy projects from IPPs, totalling over 6000MW, with just over 3500MW in full operation.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

South Africa's Nationally Determined Contribution (NDC) contains a target to limit greenhouse gas (GHG) emissions. The NDC pledge is consistent with South Africa's long-term goal to constrain its emissions to follow a peak-plateau-decline trajectory. Based on this, South Africa's emissions should peak between 2020 and 2025 before then plateauing for approximately a decade and then declining thereafter.

South Africa has signed and ratified the Paris Agreement. The NDC is premised on the adoption of comprehensive, ambitious, fair, effective and binding rules in accordance with the Paris Agreement. The NDC acknowledges that South Africa's priorities include equity, economic and social development and poverty eradication.

The 2011 National Climate Change Response White Paper also supports the use of carbon budgeting and carbon pricing measures.

The IRP is the key electricity sector policy to reduce emissions. The Draft IRP released for public comment envisages that the energy and capacity mix will be fairly comparable for the period up to 2030. The share of coal will then reduce as older power plants are decommissioned and GHG emission constraints are imposed. This implies that coal will contribute less than 30 per cent of the energy supplied by 2040 and less than 20 per cent by 2050. The share of renewables and gas will accordingly increase substantially under the Draft IRP with the imposition of the GHG emission constraints.

South Africa is planning to introduce a carbon tax covering fossil fuel combustion emissions. National Treasury published the Second Draft Carbon Tax Bill in December 2017, the first draft having been published for comment in November 2015. Under the current planning, a basic tax-free threshold of around 60 per cent of emissions and additional allowances for specific sectors might result in tax exemptions for up to 95 per cent of emissions during the first phase until 2022. The full carbon tax rate is proposed to be 120 South African Rand per tCO_2e (US$8 per tCO_2e), after exemptions. The effective tax rate is expected to be between 6 and 48 Rand per tCO_2e (US$0.4 and 3 per tCO_2e). Given the engagement still required with various stakeholders and the parliamentary processes, it is expected that the finalisation of the Carbon Tax Bill will be further delayed.

The Minister of Environmental Affairs has recently published the National Climate Change Bill for public comment. The purpose of the Bill is to build an effective climate change response and to ensure the long-term, just transition to a climate resilient and lower carbon economy and society.

The Bill provides for the appointment of a ministerial committee on climate change to be tasked with overseeing the necessary activities across all sector departments and spheres of government. The Bill aims to address all priority sectors, including the electricity sector, in order to align with national sectoral emission targets. Other provisions in the Bill include setting out and achieving national adaptation objectives, determining a national GHG emissions trajectory, prescribing sectoral emissions targets and determining a GHG threshold to inform the allocation of carbon budgets.

In 2017, a significant High Court judgment was handed down in the matter of *Earthlife Africa, Johannesburg v The Minister of Environmental Affairs and others*. The judgment was South Africa's first climate change-related court case. The case is in respect of the environmental authorisation granted for the establishment of the proposed 1200MW Thabametsi coal-fired power station. The crux of the judgment is that climate change poses a substantial risk to sustainable development in South Africa and is a relevant factor for the Department of Environmental Affairs to consider when granting environmental authorisation for thermal power plants. The judgment requires the developer to undertake an assessment of the climate change impacts in the form of a professionally researched climate change impact assessment report (including mitigation measures) as part of the environmental authorisation approval process.

In addition, South Africa has a National Energy Efficiency Strategy, 2008 that aims to develop measures to promote energy saving, reduce the negative impact of energy use on the environment, reduce energy costs to the economy and to contribute towards sustainable development.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There is currently a very limited regulatory framework for the adoption of electricity storage in South Africa.

The regulatory framework does encourage the use of renewable energy technologies however only pumped energy storage is addressed in the latest Draft IRP. The IRP mentions the need for research on thermal energy storage linked to CSP. The IRP does not mention energy storage in respect of wind and solar PV plants.

At a policy level, South Africa aims to introduce more renewable energy into the energy mix, therefore, adopting energy storage will provide support in this regard. The DoE and NERSA play an essential role in the adoption of energy storage onto the grid in that the development of energy storage policy and legislation will need to be developed and administered by the DoE and NERSA.

There are no incentives specific to the research and development of storage solutions. Section 12L of the Income Tax Act, 1962 does permit energy efficiency claims; however, these provisions are not specifically for electricity storage.

The Industrial Development Corporation, a state-owned development finance institution, together with various stakeholders, are evaluating potential energy storage technologies to increase access to reliable, affordable electricity in South Africa, encouraging policies to support the adoption of energy storage technologies and exploring opportunities to invest in energy storage projects.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The current assumptions in respect of new nuclear power plants used in the Draft IRP deviates materially from those employed in the existing IRP. The existing IRP assumed that 9600MW of new nuclear capacity would be installed by 2030. The Draft IRP does not include any additional nuclear power apart from the installed capacity provided by the Koeberg nuclear power station.

The current government policy accordingly does not encourage the development of any new nuclear power plants in the future.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

A transmission licence is required from NERSA in terms of the ERA for the operation of transmission networks. Eskom currently owns and operates the national transmission networks and holds a transmission licence issued by NERSA.

There is no closed list of authorisations that one needs to obtain in order to construct a transmission network. Refer to question 3 above for a general list of environmental and land related authorisations that are potentially applicable to the construction of transmission networks.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

A customer seeking connection to the transmission services or modifications to existing transmission service connections may apply in writing to the NTC. The South African Grid Code specifies the minimum technical and design requirements that customers must adhere to when connecting or seeking to connect to the transmission services. Accordingly, an applicant who wishes to have access to the transmission services must comply with the technical and design requirements as set out under the Grid Code.

Upon application, the NTC will issue cost estimate letters and budget quotations for new connections to the transmission system and for upgrades to existing connections in accordance with an approved tariff methodology. IPPs typically enter into transmission agreements with Eskom to regulate their access to the transmission network.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

There are no direct incentives to promote the expansion of the transmission network by the private sector. As mentioned, Eskom owns and operates the transmission system. Eskom does have plans to expand and further develop the transmission grid. In accordance with its transmission licence, Eskom is required to publish an updated Transmission Development Plan (TDP) for a 10-year period.

The periodic TDP focuses on the need to connect IPPs to the grid, plans to develop large-scale transmission corridors at key points in the grid over the long term and plans for regional major transmission development schemes.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

In terms of the ERA, NERSA is tasked with the regulation of electricity charges and tariffs. A licensee may charge only the tariffs set or approved by NERSA. NERSA may, in prescribed circumstances, approve a deviation from set or approved tariffs.

The ERA provides tariff principles for economic regulation of the electricity supply industry. In terms of the principles, the licence conditions relating to the setting or approval of prices, charges and tariffs and the regulation of revenues must enable an efficient licensee to recover its costs and provide for or prescribe incentives for the continued improvement of the technical and economic efficiency with which services are to be provided.

In addition, the licence conditions must give end-users proper information regarding the costs that their consumption or use imposes on the licensee's business and must avoid undue discrimination between customer categories (discrimination between different classes of customers for objectively justifiable and identifiable differences is allowed if approved by NERSA).

The South African Grid Code transmission tariff code sets out the transmission services and pricing and the procedure to be followed in applications to change revenue requirements, tariff structures or both.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Eskom is responsible for the reliability of the transmission grid. As the system operator, Eskom is tasked with the responsibility to operate the interconnected power system to achieve the highest degree of reliability practicable. The South African Grid Code also requires the network system operator to co-ordinate voltage control and to operate with sufficient operating reserve capacity to carry its expected load as per the frequency control requirements of the Grid Code.

The network system operator must endeavour to retain international interconnections, to operate the transmission grid in such a way as to minimise adverse effects of disturbances on customers and may shed customer load to maintain system integrity.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

A distribution licence is required from NERSA in terms of the ERA for the operation of distribution networks. Eskom and certain municipalities are responsible for the distribution of electricity under such distribution licences.

There is no closed list of authorisations that one needs to obtain in order to construct a distribution network. Refer to question 3 above for a general list of environmental and land related authorisations that are potentially applicable to the construction of distribution networks.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Customers seeking a new connection to the distribution system must lodge an application to connect to the distribution system with the relevant distributor (ie, Eskom's distribution unit or the relevant municipality). Customers are required to provide additional information on fluctuating loads, capacitor banks and reactors that could affect the performance of the distribution system.

Upon application, the distributor will issue cost estimate letters and budget quotations for new connections to the distribution system. The generator will enter into connection and use-of-system agreements with, or obtained approval from, the holder of the relevant distribution licence.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no direct incentives to promote the expansion of the distribution network by the private sector.

IPPs have the option to select a 'self-build' option with the relevant distributor. The IPP under a 'self-build' agreement is then responsible for and undertakes the connection works to connect to the relevant distribution system. Once completed, the IPP transfers the connection works to the relevant distributor.

The government has previously proposed the creation of an independent system market operator (ISMO) that will own, control and regulate the national transmission and distribution network. The proposed legislative changes required to implement the ISMO were introduced in 2012; however, the approval of these changes have subsequently stalled.

Eskom implemented a revised business model to prepare for capacity requirements and the impending restructuring of the electricity sector by splitting its business into regulated and non-regulated divisions. It is proposed that Eskom's transmission and grid access unit will become independent of its generation division and will take responsibility for the electricity grid.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Refer to question 12 above for regulation of tariffs by NERSA.

In addition, the South African Distribution Code (tariff code), sets out the objectives for pricing and tariffs for distribution and network services. The tariff code applies to all regulated tariff structures and negotiated pricing agreements under the jurisdiction of NERSA.

The tariff code regulates the energy charges, network charges, connection fees and principles for tariff design and allocation of costs.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The ERA requires that any person involved in trading of electricity must obtain an applicable licence from NERSA. These trading licences are applicable both to the selling and the buying of electricity as a commercial activity.

The Minister of Energy has recently gazetted the Licencing Exemption and Registration Notice under the ERA. These exemptions will potentially simplify the licencing requirements for small scale embedded generation.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In terms of the ERA, NERSA is tasked with the regulation of electricity charges and tariffs.

NERSA approves tariffs on submission by Eskom of a schedule of tariffs. A licensee may only charge the tariffs set or approved by NERSA. NERSA may, in prescribed circumstances, approve a deviation from set or approved tariffs.

In terms of NERSA's tariff principles for economic regulation of the electricity supply industry, the licence condition relating to the setting or approval of prices, charges and tariffs and the regulation of revenues:

- must enable an efficient licensee to recover its costs;
- must provide for or prescribe incentives for the continued improvement of the technical and economic efficiency with which services are to be provided;
- must give end users proper information regarding the costs that their consumption imposes on the licensee's business;
- must avoid undue discrimination between customer categories (discrimination between different classes of customers for objectively justifiable and identifiable differences is allowed if approved by NERSA); and
- may allow the cross-subsidy of tariffs between certain classes of customers.

The Minister of Energy may, in consultation with the Minister of Finance and by notice in the Government Gazette, make regulations in respect of norms and standards for the charging of tariffs.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Refer to question 19 above.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The NERA obliges the Minister of Energy to adopt measures that will provide for the universal access to appropriate forms of energy or energy services for all the people of South Africa at affordable prices. These measures must take into account the country's commitment to provide free basic electricity to poor households.

Currently, South Africa has an Electricity Basic Services Support Tariff (Free Basic Electricity) Policy, which requires the provision of

50kWh of electricity per month to existing qualifying consumers (ie, poor households that are legally connected to the national electricity grid or to a non-grid electricity system such as a solar home system).

The ERA allows a licensee, in this case Eskom, to terminate the supply of electricity to a customer if such customer is insolvent, has failed to honour an agreement for the supply of electricity or the customer has failed to comply with the payment conditions under the licence. Eskom is empowered by statute to disconnect defaulting customers, which includes municipalities. Accordingly, Eskom's obligation to provide the public with electricity is subject to certain limitations.

Municipalities have a statutory duty to deliver electricity to consumers. According to the agreement between Eskom and municipalities, Eskom is obliged to supply electricity to municipalities at a prescribed rate or tariff. In turn, municipalities sell electricity to consumers at an increased rate and use the revenue to provide other services.

Eskom, as the national electricity supplier, remains responsible to ensure that should all else fails, it is the supplier of last resort.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

NERSA is the primary regulator in the electricity sector and assumes its authority pursuant to the NERA and the ERA.

There are various other authorities that establish policy frameworks within the electricity sector. The DoE together with the Department of the Presidency and National Treasury are responsible for the formulation of South Africa's energy policies. Government's overarching responsibility is to ensure that its electricity policies are integrated and work collectively towards the advancement of the country's objectives. Inputs from various governmental departments are critical to the electricity policy including those departments that will be directly or indirectly impacted. The departments of environment, water and mineral resources usually have vested interests in the development of the electricity policies and regulations.

23 Scope of authority

What is the scope of each regulator's authority?

The scope, powers and duties of NERSA relate to:

- applications for licences as well as to issue licences for the operation of generation, transmission and distribution facilities, import and export of electricity and the trading of electricity;
- regulation of prices and tariffs;
- registration of persons who are required to register with NERSA in instances where they are not required to hold a licence;
- issuance of rules designed to implement the government's electricity policy framework, the IRP and the ERA;
- establishment and management of monitoring and information systems and a national information system, and to coordinate the integration thereof with other relevant information systems; and
- enforcement of performance and compliance and taking appropriate steps in the case of non-performance.

NERSA has the authority to act as mediator in disputes arising between generators, transmitters, distributors, customers and end users. NERSA also has the authority to undertake any investigations and inquiries arising from activities of licensees.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The NERSA is the juristic person responsible for the regulation of the electricity sector in South Africa.

NERSA is established in terms of the NERA and its mandate is derived from the Act. The NERSA is an independent body. The principles of NERSA include: independence from political influence and avoidance of regulatory capture by some customers in order to ensure long-term stability of regulatory practices.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

NERSA is a public body and any decision may be challenged by way of judicial review of an administrative action as provided for in the Promotion of Administrative Justice Act, 2000. Any person may institute proceedings in the High Court of South Africa for judicial review.

The grounds for judicial review include that the decision taken was tainted by bias (or there is a reasonable suspicion of bias), was procedurally unfair, was materially influenced by an error of law, took irrelevant considerations into account or failed to take relevant decisions into account, and was either capricious, irrational or taken in bad faith or all of these.

An application for judicial review must be made without unreasonable delay and within 180 days of either: internal remedies being concluded; or, if no internal remedies exist, the applicant becoming aware of the action and the reasons for it (or when the applicant might reasonably have been expected to become aware of the same).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

IPPs under the REIPPP Programme are required to conclude implementation agreements with the DoE that contain specific change in control provisions. In accordance with the implementation agreement, the consent of the DoE is required in certain circumstances for a change in control of the IPP. The generation licences issued by NERSA to IPPs under the REIPPP Programme also have restrictions on changes in control of the licensee that have not been approved by the DoE under the implementation agreement.

Competition law in South Africa is governed by the Competition Act, 1998.

In terms of the Competition Act, specialised competition authorities, being the Competition Commission, the Competition Tribunal and the Competition Appeal Court, have been granted exclusive jurisdiction over the interpretation and application of the Competition Act's provisions. The Competition Act states that these authorities each have jurisdiction throughout South Africa. The competition authorities also have jurisdiction over 'all economic activity having an effect within' South Africa, including the electricity sector.

The Commission is the primary executive and investigative competition agency. The Commission acts as the main medium of interaction for the public and has the power to investigate, consider and pass rulings on any contravention of the Competition Act, approve or prohibit small or 'intermediate' mergers and refer its recommendations to the Tribunal in relation to 'large' mergers. In addition, the Commission can grant exemptions, grant leniency in terms of the Corporate Leniency Policy and conduct market inquiries.

The Competition Appeal Court is the final court of appeal for competition law matters.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

With respect to mergers, the Commission conducts merger investigations in compliance with the Competition Act. Firms entering into 'intermediate' or 'large' mergers are required to notify the Commission and may not implement that merger until it has been approved with or without conditions by either the Commission (for intermediate mergers), the Tribunal (for large mergers) or the Competition Appeal Court.

A merger is considered:

- intermediate if the value of the proposed merger equals or exceeds 600 million rand (calculated by either combining the annual turnover of both firms or their assets) and the annual turnover or asset value of the target firm is at least 100 million rand;

- large if the combined annual turnover or assets of both the acquiring and target firms is valued at 6.6 billion rand and the annual turnover or asset value of the target firm is at least 100 million rand; and
- the Commission has the discretion to require parties to a small merger to notify it if the merger may substantially prevent or lessen competition or cannot be justified on public interest grounds. Similar to the other mergers, merger parties may not take further steps to implement such merger until it has been unconditionally or conditionally approved.

When providing notification of a merger, a filing fee must be paid.

The Commission has:

- an initial period of 20 business days within which to investigate intermediate and small mergers. The Commission can, however, extend this investigation period by 40 business days; and
- an initial period of 40 business days to investigate large mergers, which can be extended for a period of 15 business days at a time upon application by the Commission to the Tribunal. No limitation is placed on the number of extensions that the Commission can apply for.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

Refer to questions 26 and 27.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Where a merger occurs, the test is whether the merger is likely to substantially prevent or lessen competition and, if so, whether there are any technological, efficiency or other pro-competitive gains that are likely to result from the merger that may offset the lessening of competition. The relevant factors considered include:

- the strength of competition in the market;
- the probability that firms in the market will behave competitively following the merger;
- the actual and potential level of import competition;
- ease of entry into the market, including tariff and regulatory barriers;
- the level and trends of concentration and history of collusion in the market;
- the degree of countervailing power in the market;
- the likelihood of the merged firm having market power;
- the dynamics of the market, including growth, innovation and product differentiation;
- the nature and extent of vertical integration;
- whether the business of a party has failed or is likely to fail; and
- whether the merger will result in the removal of an effective competitor.

Thereafter, it is considered whether the merger can be justified and so conditionally approved, or must be rejected on substantial public interest grounds. Public interest grounds include the effect of the merger on a particular industrial sector or region, employment, the ability of small businesses or firms controlled by historically disadvantaged persons to become competitive and the ability of national industries to compete in international markets

The Competition Act prohibits restrictive vertical practices (between suppliers and their customers) if they substantially prevent or lessen competition in the market unless a party to the agreement can raise demonstrable efficiency, pro-competitive or technological gains as a defence.

Certain restrictive horizontal practices deemed to constitute cartel conduct are also prohibited, including:

- directly or indirectly fixing a purchase or selling price or any other trading condition;
- dividing markets by allocating customers, suppliers, territories or specific types of goods or services; and
- collusive tendering and retail price maintenance.

Update and trends

A new bid round (Bid Window 5) under the REIPPP Programme was announced by the Minister of Energy and is expected to be launched in the first quarter of 2019 after the approval of the Draft IRP 2018. It is anticipated that 1000MW of solar PV and 1600MW of wind will be procured based on the allocations set out in the Draft IRP. The announcement of the latest bid round under the REIPPP Programme is inconsistent with the timing for new renewable energy capacity under the Draft IRP. It is therefore unclear if the DoE will release the Request for Proposals for Bid Window 5 in 2018.

The DoE issued a Request for Information (RFI) in 2015 in respect of the proposed Gas to Power Programme. The RFI is in line with the Minister of Energy's announcement that it will release the Liquid Fuels and Gas Utilisation Master Plans in 2018 that aims to introduce natural gas to the energy sector, whether imported via regional pipelines or LNG terminals at strategic port locations, which will contribute towards electricity generation. The Draft IRP indicates that the nascent gas market will add up to 11,930MW of installed capacity by 2030. The Gas to Power Programme can potentially initiate the introduction of gas into South Africa's energy mix.

NERSA has withdrawn its proposed rules to govern the registration of Small-Scale Embedded Generation (SSEG) below 1MW. The proposed SSEG rules were published by NERSA in April 2018 for public comment. NERSA is required to develop the rules in terms of the ERA. The Minister of Energy has recently amended the gazetted Licencing Exemption and Registration Notice under the ERA. This has necessitated the review of NERSA's draft SSEG rules in order to align the rules with the amended Licencing Exemption and Registration Notice. The Draft IRP has an annual allocation for embedded generation of 200MW for generation between 1MW to 10MW, starting in 2018.

The Draft IRP notes that with the changing electricity landscape and advancements in technology, there is an increasing number of own generation facilities in the form of rooftop solar PV and other smaller installations. There is also an increasing number of commercial and industrial facilities that are installing solar PV installations to supplement electricity from the grid.

Competitors cannot raise pro-competitive or technological gains as a defence as cartel conduct is absolutely prohibited.

The abuse of dominance provisions is a key element of the framework for control of anti-competitive conduct by firms with market power. The provisions apply to a broad spectrum of conduct that has, as its main objective, the effect of substantially lessening or preventing competition in a relevant market. The abuse of dominance provisions relate to excessive selling prices or extracting excessive buying prices by a dominant firm, various forms of exclusionary acts, refusal of access to an essential facility and price discrimination. In certain circumstances dominant firms can raise demonstrable efficiency, pro-competitive or technological gains as a defence.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

Merger control

The adjudicating body must attempt to find an appropriate remedy to counter the anti-competitive effects of the merger. Conditions may be imposed that oblige the merged entity to divest part of its assets or comply with specified behavioural conditions.

In order for a divestiture to cure an anti-competitive merger, the purchaser must be able to manage the assets efficiently and compete effectively.

Behavioural conditions may include:

- ring-fencing conditions to prevent exchanges of information as well as the establishment of compliance programmes to prevent collusion;
- conditions to ensure supply to vertically related firms where there are dangers of upstream or input vertical foreclosure;
- conditions to protect the public interest. In this regard, moratoria on retrenchments are often imposed in order to protect employees

and the Competition authorities have taken particular care to protect unskilled jobs by means of conditions.

The competition authorities may require senior executives to submit affidavits, written statements or detailed financial statements on an annual basis attesting to the firm's compliance with the conditions.

The Tribunal may impose an administrative penalty on the parties to a merger if they fail to give notice of the merger as required under the Competition Act, or if they implement the merger before it has been approved. The Tribunal may impose a penalty of up to 10 per cent of the firm's annual turnover in South Africa and their exports from South Africa during their preceding financial year.

The Tribunal may also grant an interdict if the parties to a merger attempt to, or intend to, implement the merger without notification to the Commission. The Tribunal may further order a divestiture or declare void any provision of an agreement to which a merger was subject if the parties fail to give notice of the merger, or implement the merger without approval by the competition authorities or in contravention of a condition imposed.

The amount of the penalty imposed may not exceed 10 per cent of the merging parties' turnover in South Africa and their exports from South Africa for the preceding financial year.

Prohibitive practices

The Competition Act sets out in detail the types of restrictive practices prohibited (both horizontal and vertical) as well as prohibited conduct that constitutes abuse of dominance, provisions dealing with merger control and exemption provisions. It should be noted that the provisions relating to horizontal and vertical restrictive practices apply to all firms, whereas the provisions relating to abuse of dominance and price discrimination only apply to dominant firms.

The Commission may initiate a complaint on its own accord if it has a reasonable belief that a firm has committed a prohibited practice or is abusing its dominant position in a market. It may also conduct a market inquiry into anti-competitive market conditions, without any complaint having been initiated.

The Tribunal has the power to make an appropriate order in relation to a prohibited practice, including the following:

- interdicting any prohibited practice;
- ordering a party to supply or distribute goods or services to another party on terms reasonably required to end a prohibited practice;
- imposing an administrative penalty;
- ordering a divestiture of shares, interest or assets;
- declaring the conduct of a firm to be a prohibited practice so that a person who has suffered loss or damage as a result thereof, may institute an action for civil damages;
- declaring the whole or any part of an agreement to be void; and
- ordering access to an essential facility on terms reasonably required.

The Competition Amendment Act of 2009 introduced criminal sanctions for cartel offences. It is a criminal offence for directors and managers of a firm to cause the firm to engage in cartel conduct or to knowingly acquiesce to such conduct. Any person found guilty of such an offence shall be liable for a fine not exceeding 500,000 rand, imprisonment for a period not exceeding 10 years or both.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are currently no set limitations with regards to foreign investment in the electricity sector. However, the DoE introduced economic development requirements relating to ownership interests under the REIPPP and Coal Baseload IPP procurement programmes. The requirements include setting out thresholds of equity interests in the IPPs. Bidders are required to illustrate the total local shareholding in the project company and each of the contractors and the percentage of equity interest in such entities held by black people and local communities.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Interconnectors must hold valid licences issued by NERSA in respect of the operation of the generation facility and in respect of the transmission or distribution activities as detailed above. The generation can be through an IPP procurement programme issued by the DoE or through a private willing seller or willing buyer commercial arrangement. Once a power purchase agreement, generation licence and use of system agreement is in place, the IPP can interconnect its generation facility to the end users.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There are currently no rules in place for private interconnector operations because Eskom is solely responsible for the transmission of electricity in South Africa.

The only cross-border supply of electricity in South Africa occurs at a national level pursuant to the Southern African Power Pool (SAPP), which primarily comprises of the national generation, distribution and transmission companies of each of the 12 Southern African Development Community members.

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The SAPP coordinates the planning and operation of the electric power system among member utilities and provides a forum for regional solutions to electricity supply issues.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

There are no legislative restrictions on transactions between Eskom and its affiliates. Eskom is however subject to the provisions of the Public Finance Management Act, 1999.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

There are no restrictions on utilities dealing with affiliates.

Spain

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Spain's electricity sector policies and legal regime are primarily governed by the European Union through Directive 2009/72/EC concerning common rules for the internal market in electricity. The energy policies behind this Directive are mainly focused on ensuring the security and safe supply of energy at the lowest possible cost, boosting energy efficiency, ensuring the functioning of the energy market and promoting the interconnection of energy networks.

As stated in article 1 of Law 24/2013, of 26 December, on the Electricity Sector (LSE), the regulations of the electricity sector have the aim of guaranteeing the supply of electricity and adapting it to the needs of consumers in terms of security, quality, efficiency, objectivity and transparency at the lowest cost. The LSE also establishes the principle of economic sustainability of the system, meaning that all costs of the electricity system have to be covered by the income the system generates.

At state level, the above-outlined policies and legal regime are mainly implemented through:

- the LSE itself;
- Royal Decree 1955/2000, of 1 December, on regulation of transmission, distribution, commercialisation, supply and authorisation procedure for electricity facilities (Royal Decree 1955/2000);
- Royal Decree 900/2015, of 9 October, regulating administrative, technical and economic types of electricity supply and generation with self-consumption (Royal Decree 900/2015);
- Royal Decree 2019/1997, of 26 December, organising and regulating the electricity production market; and
- Royal Decree 413/2014, of 6 June, on electricity generation by means of renewable, cogeneration and waste facilities (Royal Decree 413/2014).

Most autonomous communities have also passed legislation developing several issues of state legislation in relation to the authorisation process in their territories.

Town councils also have their own regulations regarding the issuance of works and activity licences.

Environmental and town planning regulations (which are mainly developed at autonomous community and town council levels) also have to be taken into consideration when developing an electricity project.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Article 8 of the LSE establishes the general framework for the functioning of the electric system, which can be summed up as follows:

- electricity generation is a liberalised activity carried out by private operators that sell the electricity generated to the pool at market prices or to specific customers by means of bilateral agreements (power purchase agreements);
- even though generation of electricity is a liberalised activity, there are certain policies that encourage the use of specific generation sources:
  - an additional regulated remuneration for renewable projects (see question 5 below); and
  - subsidies for purchasing and using Spanish coal;
- system operation, market operation, transmission and distribution activities are considered regulated activities for the purposes of the unbundling regulations:
  - transmission is carried out under a single transmission agent and system operator (TSO) scheme. Red Eléctrica de España, SA (REE) is the sole TSO for the Spanish electricity system. Among other duties, REE is responsible for guaranteeing the continuity and security of the electricity supply, ensuring proper coordination between generators and the transmission and distribution networks, and operating and managing the transmission grid. REE is a company partially owned by the state (20 per cent). To guarantee the independence of REE, the LSE establishes certain limitations on its shareholders and voting rights: maximum shareholding is limited to 5 per cent of share capital and voting rights cannot be exercised over 3 per cent; if the shareholder has interests over 5 per cent in other entities operating in the electricity sector, their voting rights in REE are limited to 1 per cent;
  - OMI-Polo Español, SA (OMIE) is the electricity market operator. It manages the wholesale electricity market for the Iberian Peninsula (Spain and Portugal), where market agents trade the amounts they need (MWh) at transparent prices. OMIE also carries out the invoicing and settlement of the energy traded on these markets and oversees the corresponding financial settlements. In addition, OMIP – Iberian Energy Market Operator (Portuguese Division), SGMR, SA – manages the futures market (forward and derivatives) on the Iberian Peninsula;
- third-party access to the transmission and distribution network is guaranteed on the technical and economic conditions set forth in the LSE and its implementing regulations (see question 4); and
- lastly, trading is also a liberalised activity and customers are free to choose their supplier. Pursuant to EU Directives, from July 2009 onwards individual entities have no longer been allowed to bundle distribution and supply. The trader is the entity with a commercial relationship with the final customer and pays the access fees to use the transmission or distribution network.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

As per the provisions of articles 111 and 115 of Royal Decree 1955/2000, the construction, expansion, modification and operation of all electricity installations requires the following administrative authorisations:

- administrative authorisation, if appropriate, in conjunction with the environmental impact study;
- approval of the execution project; and
- start-up certificate – the relevant authorities issue the start-up certificate within a period of one month from receipt of the request, having completed the necessary technical inspections and verifications of the project.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The general policy regarding access to the transmission grid is set forth in article 33 of the LSE, which establishes that the granting of a connection point to the grid must be based on technical security criteria, regularity and quality of supply and sustainability and economic efficiency of the electric system.

The application of these criteria determines whether there is enough power transmission capacity in the grid. The LSE establishes that when evaluating the capacity of the grid it is necessary to evaluate more than the specific connection point to which the facility is to be connected. The analysis must also include other connection points that may be influenced by the connection point where the facility is to be connected, considering current generation facilities and future ones that have already been granted access in a given connection point.

The permit for accessing the grid must be granted by REE as TSO when the connection point is located in the transmission grid, and by the corresponding distributor when the connection point is to be granted in the distribution grid. These permits may be refused only if there is a lack of capacity in the relevant grid, and the refusal must be reasoned and based on the criteria set forth in the first paragraph above.

Note also that Law 15/2012 established a tax on the sale of electricity at a rate of 7 per cent on the total revenues accruing to generators from the electricity generated and incorporated into the grid by each of their facilities.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes. In general terms, under the Spanish incentive scheme, renewable power generators: sell the electricity they generate into the Spanish wholesale market and receive market price for such sales; and may receive additional regulated payments during their respective regulatory lives.

In addition to financial incentives, other policies that promote the development of renewable energies in Spain are the following:

- priority of access to the grid – renewable energy generators have priority over other operators to access and connect to transmission and distribution networks; and
- priority of dispatch of electricity generated in the wholesale market – under equal market conditions, renewable energy generators have priority over other, conventional generators to deliver their electricity in the wholesale market.

Combined heat and power generators also receive market price for their sales plus an incentive, labelled capacity payments, for the availability of the combined heat and power plant.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The Spanish government launched an open consultation process in relation to a preliminary draft bill of a climate change law. This process remained open until 10 October 2017. The aim is to respond to EU targets on climate change arising from the Paris Agreement, defining a medium- and long-term framework to secure the transition towards a low-carbon model. Note also that the Spanish government changed on 2 June 2018 and the new Ministry for Ecological Transition (MINET (formerly the MINETAD)) has undertaken to present the new draft bill for the Law on Climate Change and Energy Transition before the end of 2018.

The future law on climate change will introduce the EU targets for 2030. In particular: greenhouse gases are to be reduced by 26 per cent in comparison with 2005; and at least 27 per cent of total EU energy consumption must come from renewable sources.

The specific contribution of Spain to meeting these new targets will be established in the coming law, although Spain always promotes clean energy initiatives. The increasing importance of renewable energies for meeting electricity demand in Spain can be shown in the data provided by REE in its Annual Report for 2016: 22.8 per cent of total installed capacity in Spain is wind power electricity and 20.3 per cent comes from hydropower. Solar photovoltaic energy amounts to 4.4 per cent of total installed capacity, with solar thermal accounting for 2.3 per cent. Renewable energies increased their overall share in electricity demand coverage from 36.9 per cent in 2015 to 41.1 per cent in 2016.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The regulations applicable to energy storage projects do not differ from the general framework. Storage facilities (both large scale and end user (batteries, etc)) depend on the power plant of which they form part. Therefore, the relevant authorisations and legal framework are included within the authorisation process for power plants.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The current debate in Spain focuses not on whether new nuclear plants should be developed, but on the extension of existing plants beyond their initial 40 years of operational life. There is no common policy in this regard among the different political parties. While the former (right-wing) Spanish government pursued the renewal of existing licences, the current Spanish government (left-wing) has announced its intention to take steps towards closure of nuclear plants (or the non-renewal of their licences). A change in the political affiliation of the government therefore impacts the renewal policy of existing nuclear power plants. In addition, the Spanish government does not have a majority in the Spanish Congress and so has to reach agreements with other political parties that could also affect nuclear power plant policies.

There are currently five operational nuclear power plants in Spain, two of which each have two light-water reactors. The last plant entered into operation in 1988. The renewal process lasts approximately three years and the first renewals for some of the nuclear plants were scheduled to be requested during 2017 and 2018.

The debate between operators and the Spanish government revolved around the conditions on which extensions should be granted. Nuclear power generators argued that the current tax scheme for nuclear power plants is disadvantageous and discourages the filing of renewal applications. Even though the current Spanish government is against extending the life of existing nuclear plants, the political situation together with the approach of generators requesting incentives makes the final outcome in terms of whether extensions will ultimately be granted highly unpredictable. In fact, the first renewal request from the oldest nuclear plant in Spain (Santa María de Garoña) was denied by the former Spanish government (through the Ministry of Energy, Tourism and Digital Agenda (MINETAD) currently the MINET), with the former minister blaming political uncertainty given the opposition of other political parties and disagreement between the two shareholders of the plant in relation to whether the plant should continue operating.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The authorisations to construct and operate transmission networks are similar to those described in question 3.

Transmission (and also distribution) activities receive a regulated remuneration based on the costs of building, operating and maintaining the installations. Currently and until the end of 2019, the return rate of transmission and distribution assets is determined by reference to market yields for the 10-year Spanish government bond calculated as the average of the months of April, May and June of 2013 plus a spread

of 200 basis points. The return rate will be reset and adjusted if needed in 2020.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Pursuant to article 52 of Royal Decree 1955/2000, generators, auto-generators, distributors, traders, qualified consumers, and those other non-national entities authorised to carry out transit of electricity between large networks are entitled to access the transmission grid.

Apart from fulfilling the corresponding requirements and capacities to become an operator (technical, economic and legal capacities), access to the grid itself does not depend on any specific condition and can be denied only owing to lack of capacity in the connection point. Such lack of capacity must be exclusively based on security, regularity or quality grounds.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Pursuant to article 34 of the LSE and articles 8 et seq. of Royal Decree 1955/2000, the planning of the transmission grid is approved by the government with the involvement of the autonomous communities, REE as TSO and the National Commission for Markets and Competition (CNMC). The planning includes a development plan for the transmission infrastructures, which is approved every four years. This development plan is binding and each year MINET uses it to approve the yearly investment planning of transmission infrastructures to be developed by the TSO. The TSO is then obliged to execute the approved investments.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The MINET approves the regulations to establish access fees and tolls and charges for the use of transmission and distribution networks. Access fees, tolls and charges must be set in accordance with the methodology established by the CNMC. The tolls approved by MINET are the same for the whole Spanish territory and do not include any taxes. If there are specific taxes of the autonomous communities that affect activities or facilities needed for the supply of electricity, a supplement may be included to cover the extra costs arising from such levy.

MINET sets access fees and tolls on an annual basis and can review them whenever there are circumstances that affect the regulated costs of the system or the calculation methodology.

Note however that the determination of these fees and rates was subject to a certain degree of controversy between the CNMC and the former MINETAD with CNMC claiming (and challenging) that pursuant to Spanish law this was a competence of the CNMC. The new Spanish government (through the MINET) seems to be taking steps in favour of the request of the CNMC, but the final outcome and whether this is finally determined by the CNMC is still to be seen.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

REE is in charge of the reliability of the transmission grid as TSO of the electricity system. Its principal responsibility is to ensure the continuity and security of supply and proper coordination between the transmission and generation systems.

REE's powers include taking any action necessary to properly carry out its responsibilities, including:

- forecasting the level of guaranteed supply with powers to temporarily close facilities to guarantee supply;
- coordinating and amending maintenance plans for transmission facilities to ensure their compatibility with generation facilities and an adequate availability level to guarantee the security of the system;
- issuing operating instructions for the transmission grid; and
- applying transmission network access fees and tolls.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The authorisations to construct and operate distribution networks and the distributor remuneration regime are similar to those described in questions 3 and 9.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The answer provided in question 10 in relation to the transmission network applies, mutatis mutandis, to this question.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Pursuant to the provisions of article 40 of the LSE, the obligations of distributors include extending the distribution facilities to meet new electricity supply demand when necessary. Distributors must also file their annual and multiannual investment plans with MINET, which must contain the projects to be executed and their technical features, the execution schedule and the estimated budget. Such investment plans are approved by MINET and must be executed by the distributors.

Pursuant to the provisions of article 41 of Royal Decree 1955/2000, the obligations of electricity distributors include extending the distribution facilities within the geographical scope of their authorisation to meet new electricity supply demand when necessary. Where there are several distributors in a given area and none of them decides to undertake expansions to serve new customers, the administration will determine which of these distributors should take responsibility, taking into account their individual conditions based on criteria of lower costs and higher economic rationality.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The answer provided in question 12 in relation to the transmission network applies, mutatis mutandis, to this question.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The sale of power to customers is carried out by traders. Trading activities are subject not to a prior authorisation regime but to a prior notification to MINET of the start-up of the activities. These notifications must include a responsibility pledge stating that the trader fulfils all the requirements to carry out the activity (including unbundling obligations, technical capacity and fulfilment of wholesale market rules).

If the trading activities are to be carried out only in a specific autonomous community, such notice must be provided to the administrative authorities of the autonomous community instead of to MINET.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In Spain we can distinguish between power sales on the free and regulated markets. On the free market, consumers can choose their trading company and both parties freely agree the price of the electricity. However, some specific consumers can qualify for the regulated market, with small consumer prices (PVPC).

In both markets consumers will pay the corresponding access fees to the transmission and distribution networks as well as the corresponding taxes. Thus, the difference lies in the price paid for the electricity itself.

Questions 20 and 21 further develop the main features of the wholesale market and the PVPCs.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

OMIE is the electricity market operator. It manages the wholesale electricity market for the Iberian Peninsula (Spain and Portugal), where market agents trade the amounts they need (MWh) at transparent prices. OMIE also carries out the invoicing and settlement of the energy traded on these markets and oversees the corresponding financial settlements.

Market price is settled through daily and intra-daily auctions carried out in the wholesale or spot market. Daily auctions are carried out with the purpose of covering the electricity demand for the following day (24 auctions to cover the 24-hourly bands of the following day). In turn, the purpose of intra-daily auctions is to correct any deviations in the result of the daily auctions (unexpected increases or decreases in electricity demand or supply produced by meteorological circumstances, grid congestion, problems with selected generation units, and so on).

These auctions are inverse. In other words, offers are matched depending on their price – from low to high – until the entire demand is completely covered for the relevant hourly band. The final matched offer marks the price for all the previously matched offers ('marginal price'), despite the prices of later offers being lower than the marginal offer. The marginal price is basically the market price for each auction.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Pursuant to article 17 of the LSE and Royal Decree 216/2014, PVPCs are the maximum prices that reference traders (those obliged to supply at PVPC) can charge for the electricity.

Consumers that can qualify for PVPCs are those with supply points with a voltage lower than 1kV and with a contracted power of less than or equal to 10kW. The PVPC is calculated taking into consideration electricity generation costs, access fees and trading costs.

In addition, in 2009 the Spanish government created a discount rate for certain vulnerable consumers, who are generally defined as falling into at least one of the following categories: having a contracted power of less than 3kW in their main residence; being at least 60 years old and having a retirement, invalidity or widow's pension according to the social security system; being a 'numerous family' (with three or more dependent children); or being part of a family all of whose members are unemployed.

The discount rate is calculated as a discount of 25 per cent on the PVPC and vulnerable consumers have the right to be supplied with electricity under these special conditions.

Royal Decree 897/2017 develops the vulnerable consumer concept, including income thresholds for determination of vulnerable consumers. Certain mechanisms are also established to avoid cutting the supply to specific consumers at risk of social exclusion.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Broadly speaking, at state level, MINET is in charge of proposing and executing government policies in relation to energy.

Among other functions, MINET is responsible for adopting the necessary measures to secure the supply of electricity and the economic and financial sustainability of the electricity system. The establishment of the National Energy Plan and of an economic regime for those facilities entitled to regulated remuneration are also part of MINET's duties. Furthermore, MINET's role includes granting the relevant authorisations for facilities: with an installed capacity of more than 50MW; when they affect the territorial scope of more than one autonomous community; and when they are off shore in the territorial sea.

Autonomous communities are in charge of developing basic state-level legislation. They also grant the necessary authorisations when the electric infrastructure solely affects their territory, unless such authorisations are expressly reserved to MINET as explained in the above paragraph.

At municipal level, town councils are in charge of granting the necessary works and activity licences for the installation of the facilities.

The CNMC is the independent regulator in charge of supervising and controlling the proper functioning of the electricity sector. The CNMC also oversees the degree and effectiveness of market openness and competition in both the wholesale and retail markets. The CNMC has been vested with several functions for these purposes, the main ones being: consultancy functions (it has to issue obligatory reports in relation to regulations, authorisation, amendment or dismantling procedures for electric installations, energy planning, economic regime, quality of supply, etc); conflict resolution (access to the network); and imposing disciplinary measures.

23 Scope of authority

What is the scope of each regulator's authority?

See question 22.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Spanish electricity regulator is the CNMC, which, according to article 3 of Law 3/2013, must act with independence from any commercial or business interest in pursuit of its objectives.

In addition, article 3 of Law 2/2013 establishes that the personnel or any members of the CNMC shall not request or accept instructions from any public or private entities.

Note also that the government appoints members of the council of the CNMC upon a proposal from MINET. The nominee must appear before the corresponding commission of the Spanish Congress and its appointment may be vetoed by an absolute majority of said commission. The appointment is made for six years and cannot be extended. The members of the council are partially renewed every two years. This appointment mechanism has been criticised by several sectors, arguing that it does not fully guarantee the independence of the members of the council.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Authorisations, permits and concessions, and any administrative resolutions may be challenged in an administrative proceeding before either the administrative authority that granted them or the relevant superior administrative body. They can subsequently be challenged before the competent courts, which may be the Superior Court of Justice of an autonomous community, the Supreme Court, or lower courts, depending on the specific administrative resolution being challenged.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

MINET is in charge of reviewing acquisitions or other changes in control over businesses in the electricity sector. However, the CNMC has temporarily taken responsibility for this function of MINET until the latter creates the relevant body to assume it.

It is also necessary to obtain a facility transmission authorisation from MINET (or the relevant autonomous community) for the direct transfer of any electricity installation, and several autonomous communities have also enacted legislation requiring an authorisation for

Update and trends

On 1 June 2018, the Spanish government has changed in favour of the socialist party. The arrival of a new government gives reason to expect changes in energy policies and, specifically, in the renewables sector at the expense of other more polluting generation technologies (nuclear, coal, etc) in line with EU policies and objectives. The new government intends to push forward important reforms to promote investment, research and development in renewable energies. Spain's new government has already made sure to communicate the shift in climate and energy policy to institutions and members of the EU, aligning with the European socialist parties in these issues, and pushing with them for the 32 per cent share of renewables in the total energy of the Union by 2030.

This, together with the positive economic environment in Spain for the past two years, and with the fact that many renewable technologies are on a degree of maturity that allows profitability without needing regulated incentives, will most likely result in the increase of the investments and the further development of renewable energies in Spain during the coming years.

the indirect transfer of electricity facilities (wind farms). See question 27 for further analysis.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The Ninth Additional Provision of Law 3/2013 establishes the obligation to notify MINET upon either of the following events:

- acquisition by companies that carry out regulated activities (such as transmission or distribution of electricity) of stakes in other companies or assets, which may have a significant impact on the development of the activities of the transmission or distribution companies owing to their value or other circumstances. Such acquisition could be made directly or indirectly, in the latter case through other companies controlled by the regulated companies; and
- acquisition of shares of transport or distribution companies, or of shares of companies that carry out such regulated activities indirectly, through companies under their control.

In addition, if the transaction implies a real and sufficiently serious threat to the guaranteed supply of electricity within the scope of the companies with regulated activities, conditions related to the exercise of such activities may be imposed.

As said before, the CNMC has temporarily taken responsibility for this function of MINET. The notification period for acquisitions is within 15 working days of the acquisition taking place.

On the other hand, article 34 of Royal Decree Law 6/2000 establishes limits on the holding of stakes in the main operators (production and supply) of the electricity system. The CNMC publishes an annual resolution establishing the main operators. If a shareholder holds direct or indirect stakes in two or more electricity main operators, limits as to voting rights and appointment of directors in such operators will apply.

In addition, article 133 of Royal Decree 1955/2000 establishes the need for prior authorisation for the direct transfer of electricity generation assets. Royal Decree 1955/2000 does not establish the need to obtain authorisation for an indirect transfer (eg, by selling shares of the project company) of a renewable facility.

Several autonomous communities (eg, Catalonia and Castilla-León) have also enacted legislation that establishes a requirement to obtain authorisation for both direct and indirect transfers of facilities. If a given autonomous community has not enacted any specific legislation in this regard, Royal Decree 1955/2000 will apply in said autonomous community. The usual term to obtain this authorisation is three months (in some autonomous communities it may be one month), with authorisation considered denied if the corresponding authority provides no answer. Upon approval, the applicant will have a term of six months to transmit ownership of the facility. The authorisation will expire after this period. The applicant must notify MINET or the autonomous community of the effectiveness of the transfer within one month after it becomes effective.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CNMC is the public authority in charge of preventing and punishing anticompetitive practices.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

Spanish law mainly identifies the following practices as anticompetitive or manipulative:

- concerted practices with the purpose of preventing, restricting or distorting competition in the national market, such as:
  - fixing of price or commercial terms;
  - limits or controls over production, distribution, technical development or investments; and
  - market sharing;
- abuse of a dominant position, including among other actions:
  - imposing unfair prices or commercial terms;
  - limiting production, distribution or technical development to the detriment of consumers or other companies;
  - unjustified refusal to satisfy demand for products or services; and
  - applying unequal terms for equal services in commercial relationships, thereby placing some competitors at a comparative disadvantage.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The CNMC is vested with powers to investigate anticompetitive practices, initiate infringement proceedings and impose the relevant sanctions and remedies.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Pursuant to the Ninth Additional Provision of Law 3/2013, when the acquisition is carried out by entities of states that are not members of the European Union or the European Economic Area, if MINET considers that there is a real and sufficiently serious threat to the guaranteed supply of electricity within the scope of the acquirer's activities it may establish conditions relating to the exercise of the activity of the companies subject to the transaction, as well as certain specific obligations that may be imposed on the acquirer to ensure compliance with competition laws.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The authorisations to construct and operate transmission networks are similar to those described in question 3.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Interconnectors and cross-border electricity supply are regulated at European level by means of Regulation (EU) No. 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines

for trans-European energy infrastructure. Regulation 347/2013 establishes the requirements for Projects of Common Interest (those projects necessary to implement the energy infrastructure priority corridors and areas set out in Annex 1 of the Regulation). Spain is involved in the priority electricity corridor of the North-South electricity interconnections in western Europe (NSI West Electricity).

There are currently six projects in which Spain is involved and which have been granted the status of Projects of Common Interest: projects on the Spanish-French border (Arkale Substation); Project Bahía Vizcaya; and several projects across the central Pyrenees.

The interconnector capacity is sold through different auctions conducted by REE in the case of interconnectors with France and Morocco, and by OMEL for interconnectors with Portugal.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

As explained, companies carrying out transportation and distribution activities are required to have such activity as their exclusive corporate purpose, and a group of companies carrying out transport or distribution activities cannot carry out generation or trading activities either directly or through companies within their group of companies, unless they fulfil several unbundling obligations established in the LSE (keep separate accounting for each activity; maintain different management for each activity; keep commercially sensitive information secret from other companies within the group; establish a group code of conduct to fulfil unbundling obligations; and so on).

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

MINET, relevant authorities of the autonomous communities and the CNMC enforce restrictions and may impose sanctions for any infringement, each of them within the scope of their respective competences. Sanctions can include not only fines but also revocation of authorisations or disqualifications from carrying out the activity.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Generally speaking, government policy in the electricity sector is to maintain continuous, high-quality, cost-effective, reliable and environmentally friendly energy supplies and to have a liberal, competitive, transparent, non-discriminatory and stable market. In order to achieve this market, the most recent governmental strategy documents and strategy plans include the following goals:

- promoting energy efficiency;
- promoting new technologies, a diversity of resources and the use of domestic and renewable resources in a way so as to decrease dependency on foreign resources;
- structuring and operating the market in a way that ensures security of supply;
- considering climate change and its environmental effects in energy sector activities; and
- protection of the environment.

Legislative framework

In 2001, the main legislative document that created the current market structure, the Electricity Market Law No. 4628 (Law No. 4628) was issued as part of the efforts to harmonise with the EU and to liberalise the market. Under Law No. 4628, the Energy Market Regulatory Authority (EMRA) was established to regulate and supervise the market as an independent body. Law No. 4628 was amended with Electricity Market Law No. 6446 (EML), which entered into force on 30 March 2013. Law No. 4628 is still in force, but its name has changed to the Law on the Organisation and Duties of the Energy Market Regulatory Authority. Therefore, Law No. 4628 only regulates the duties and rights of EMRA, while the EML regulates market activities.

The EML and the main secondary legislation, namely the Electricity Market Licence Regulation published in the Official Gazette, dated 2 November 2013, No. 29908 (EMLR), regulate the market activities and type of licences. Each market activity, on the other hand, is subject to other secondary legislative documents, which regulate in detail the specific activity. Different generation activities such as renewable energy, nuclear energy and energy efficiency are also subject to their specific laws and implementing regulations.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Licensing in general

Pursuant to the EML, electricity market activities consist of generation, transmission, distribution, supply, market operation as well as import and export activities. To carry out any of the market activities, market participants are required to obtain licences from EMRA, except for certain generation activities (see question 3).

In the past, as a state monopoly, the Turkish Electricity Authority (TEK) was responsible for all generation, transmission and distribution activities. In 1984, following the adoption of Law No. 3096, TEK's monopoly on electricity activities was weakened and private companies were given the opportunity to operate in the market. TEK was first unbundled in 1993 into two state-owned enterprises: one for generation and transmission (Turkish Electricity and Transmission Company (TEAS)) and the other for distribution (Turkish Electricity Distribution Company (TEDAS)). In 2001, TEAS was unbundled into three state-owned companies: one for generation (Turkish Electricity Generation Company (EUAS)), one for transmission (Turkish Electricity Transmission Company (TEIAS)) and one for trade (Turkish Electricity Wholesale Company (TETAS)). In 2004, TEDAS was included in the privatisation portfolio as part of a Privatisation High Council Decision and as explained below under 'Distribution', the privatisation process has been completed. EUAS is also in the process of being privatised. With an amendment made to EML on 9 July 2018, TETAS has been abolished by being merged with EUAS.

Under the EML and the EMLR, licences may be granted for a maximum term of 49 years; however, the term for the licences regarding generation, distribution and transmission may not be less than 10 years. The licences may be renewed for a maximum period of 49 years after their expiry. On the other hand, the licence terms for the Renewable Energy Resource Areas (RERA) will be determined in the specifications for each RERA (see question 5), and the generation licences granted for RERAs may not be renewed.

Each activity is subject to a separate licence. However, the export activity can be conducted by generation licensees and supply licensees, while import activity can be conducted by supply licensees. Import and export activities of such legal entities are regulated under their respective supply or generation licences and do not require separate licences. They do, however, require authorisation of the EMRA.

A licence cannot be assigned. However, there are certain exceptions for generation licences (see below). A minimum share capital requirement is sought for electricity companies under the EMLR, the amount of which differs depending on the activity. A licence fee, which differs depending on the activity, also applies.

Generation

Generation licence

In principle, generation activity is subject to a generation licence (see question 3). In Turkey, generation activity is carried out by state-owned and private generation companies and organised industrial zone legal entities. EUAS, the state-owned generation company, is in the process of being privatised. EUAS' market share was approximately 16 per cent as of the end of 2017. Generation companies are able to sell electricity or capacity to suppliers, eligible consumers and persons directly connected through a private direct line. They can also purchase electricity or capacity, in order to fill the gap between their actual production and their supply requirements, and EMRA will determine the upper limit that they can purchase. The upper limit will be a percentage of the total annual amount of generation stipulated in their generation licence.

The total amount of electricity that a real person or entity can generate through generation companies under its control should not exceed 20 per cent of the electricity amount generated in Turkey in the preceding year.

As mentioned above, a licence cannot be assigned. However, a step-in right is provided in the EMLR for banks and financial institutions, which may be exercised only with regard to the generation licences. There are other exemptions under the EMLR, set forth for; merger and demerger transactions conducted by generation licensees,

transfer of generation facilities provided that the transfer is conducted through sale, transfer, lease or other similar types of contracts, and for transfer of the rights and obligations of a licensee to another legal entity that has the same partnership structure.

Notwithstanding the foregoing, the EML provides that some activities may be conducted as being exempt from the licence requirement (see question 3).

Preliminary licence

Before applying for a generation licence, investors are expected to fulfil certain requirements stated in the preliminary licences such as obtaining the necessary decisions, permits and approvals (eg, environmental impact assessment decisions, technical interaction permit for wind energy applications, approval of zoning plans for preliminary projects) or completing certain transactions such as property acquisition or usufruct right establishment. Depending on the installed capacity and resource type of the generation facility concerned, preliminary licences can be given for a maximum of 36 months except for the occurrence of force majeure events. Such period may be extended by a decision of EMRA's board within the scope of force majeure provisions. The extension for RERA licences which will result in the pre-licence period exceeding 36 months in total will be subject to the Ministry of Energy and Natural Resources' (Ministry) approval in addition to EMRA's decision.

Both the EML and the EMLR restrict share transfers and acts and transactions which may result in share transfers and change in shareholding structure of the preliminary licensee for the duration of the preliminary licence, except in cases of inheritance and bankruptcy. Acting contrary to such restriction may result in the annulment of the preliminary licence. The EMLR excludes certain changes such as changes in the shareholding structures arising from transfer of publicly owned shares of publicly held companies or changes in the shareholding structure of such preliminary licensee's foreign shareholder from the scope of such restriction. Such restriction is also not applicable to legal entities granted a preliminary licence for generation facilities anticipated to be established under international agreements.

Transmission

Electricity transmission activities are conducted solely by TEIAS.

Distribution

Turkey's distribution network is divided into 21 distribution regions, 20 of which were owned by TEDAS and one by a private party, namely the Kayseri region. After the inclusion of TEDAS in the privatisation programme, a separate distribution company was established in each of the 20 distribution regions owned by TEDAS.

The privatisation process of all of the distribution companies has been completed. At the time of their privatisations, distribution companies were able to perform retail sales activities. However, distribution companies unbundled their distribution and retail activities into separate legal entities as of 1 January 2013. The retail companies established as a result of such unbundling are defined as 'authorised suppliers' as explained below under 'Supply'.

The EML provides that a distribution company cannot engage in any activity other than distribution or be a direct shareholder of a legal entity engaged in any other market activity. However, the EMLR allows distribution companies to provide out-of-market activities which EMRA will consider to be of a nature that will increase efficiency in the electricity distribution activity.

As per the EMLR, distribution companies are obliged to act independently in their businesses and transactions without the interference of any real or legal persons controlling the relevant distribution company. Members of the board of directors and executives at a level of deputy general manager or higher and who hold signatory authority in an electricity distribution company, and those from generation and authorised supply companies under the same control as the electricity distribution company must be different individuals. Such managers cannot hold offices on the board of directors or similar organs of the controlling companies or other companies that are under the control of the controlling companies, formed for the purposes of the supervision, coordination, management or auditing of the electricity distribution and retail sale or generation activities of such controlling companies.

Organised industrial zones are also entitled to carry out distribution activities within the organised industrial zone limits provided that they obtained an organised industrial zone distribution licence.

Market operation

Market operation activity is defined as the operation of organised wholesale power markets and the financial settlements of the transactions made in these markets.

Organised wholesale markets are defined as:

- day-ahead market and intraday market where electricity, capacity, and retail sale activities are conducted, and which are operated by an intermediary legal entity holding a market operation licence – namely the Energy Markets Operation Company (EPIAS);
- markets where standardised electricity contracts (ie, capital market instruments) and the derivative markets where derivatives based on the electricity or capacity are traded, and which are operated by Exchange Istanbul (Borsa Istanbul); and
- the balancing power market and the ancillary services market, which are organised and operated by TEIAS.

The day-ahead market has been in operation since December 2011; the intraday market, on the other hand, only started operating on 1 July 2015.

Supply

The EML merged the wholesale and retail sale activities into one licence type, the 'supply licence' and existing wholesale and retail sale licence holders are ex officio granted a supply licence without prejudice to their rights under the existing licences. According to the EML, supply activities may be conducted by generation companies and public and private sector supply companies.

Retail and distribution activities had previously been provided under one legal entity. Since the separation of the retail side from the distribution arm of distribution companies on 1 January 2013, retail companies have been established. Such retail companies are now defined as 'authorised suppliers' under the EML. Authorised suppliers are entitled to sell electricity to eligible customers across Turkey, non-eligible consumers in their region and customers of last resort (ie, the eligible consumers whose power demands cannot be met by other suppliers or who have not selected their suppliers despite being eligible to do so), as 'last-resort supplier', again in the relevant distribution region. Suppliers that previously held a wholesale licence or obtained supply licence under the EML are entitled to sell electricity to eligible consumers only. The eligible consumer limit has been determined to be 2,000kWh per annum for 2018. In addition, supply companies including authorised suppliers may also import from and export to countries with which the interconnection condition is satisfied.

The EML introduced the 'last-resort supplier' concept. The EML obliges the authorised supply companies to supply power to customers of last resort. According to the EML, tariffs of the last-resort suppliers are regulated (see question 19). The EML further stipulates that some part of the power to be supplied by the last-resort supplier must be provided by EUAS. The percentage that would be provided by EUAS is annually determined by EMRA.

Import and export

Export activity can be conducted by generation and supply licensees, while import activity can be conducted by supply licensees. Import and export activities of such legal entities are regulated under their respective supply or generation licences and do not require separate licences. Additionally, EUAS is entitled to sign electricity sale agreements within the scope of electricity energy exchange, import and export agreements and existing concession and implementation agreements, and conduct import and export activities in accordance with such agreements. See question 33 for the details and special conditions for the performance of export and import activities.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Market participants should obtain a generation licence from EMRA to construct and operate generation facilities (except for certain generation activities explained below). The EML introduces a preliminary licence for generation activities. Before applying for a generation licence, investors are expected to fulfil certain requirements stated in the preliminary licences such as obtaining the necessary decisions, permits and approvals (eg, environmental impact assessment decisions, technical interaction permit for wind energy applications, approval of zoning plans for preliminary projects) or completing certain transactions such as property acquisition or establishment of usufruct right. A preliminary licence can be given for a maximum period of 36 months (see question 2). For renewable energy, market participants should also obtain a renewable energy resource (RES) certificate from EMRA.

As per the EMLR, in both preliminary licence and licence applications regarding generation activity, applicants have to submit a letter of guarantee to EMRA for the amount determined based on the resource type by EMRA for each installed capacity in MW. The ceiling for letters of guarantee for preliminary licence applications is determined by EMRA, provided that it does not exceed 5 per cent of the investment value. The letter of guarantee amounts to be submitted during the licence application will also be determined by EMRA so as not to exceed 10 per cent of the investment value for generation licence applications.

In order to obtain a preliminary licence and a generation licence, an applicant must pay licence fees, the amount of which depend on the installed capacity of the generation facility and, must also pay annual licence fees depending on the generated electricity amount after obtaining the licence.

With respect to power plants based on domestic natural resources, the right to use such resources must be obtained. For instance, for hydroelectric power plants, private parties should sign an agreement on the right to use the water with the General Directorate of State Waterworks after obtaining the pre-licence from EMRA. For other resources (for example lignite, hard coal and geothermal), market participants should sign a fuel supply agreement regarding the energy resource to be used or acquire the right to use the energy resource or other rights in rem or make a commitment that such rights will be acquired. According to the EML, in licence applications to establish a power plant based on solar or wind power, applicants should submit a measurement of a certain period of time duly taken within the past five years in the area where the power plant will be established and the EMLR regulates the processes and principles for such measurements. If the landowner where the solar and wind power plant is to be established applies for a licence, no other licence application can be made for the relevant land. If there is more than one licence application for a solar or wind power plant for the same region or the same transformer station or both, the companies wishing to establish a solar power plant must participate in a contest to determine which one of them will connect to the system. The principles and procedures about the contest are regulated with the Regulation on the Contest regarding the Pre-licence Applications for Establishing Power Plants Based on Wind and Solar Power published in the Official Gazette, dated 13 May 2017, No. 30065 (Contest Regulation). As per the Contest Regulation, the applicants offer the electricity prices in a way that the highest price to be offered will be the incentivised price determined under the Law on Utilisation of Renewable Energy Resources for the Purpose of Generating Electrical Energy published in the Official Gazette, dated 17 May 2005, No. 25819 (Renewable Energy Law) for a period of 10 years.

The EML provides that some activities may be conducted as being exempt from the pre-licence and licence requirements. In line with the EML, a Regulation on the Generation of Unlicensed Electricity in the Electricity Market published in the Official Gazette, dated 2 October 2013, No. 28783 (Unlicensed Electricity Regulation) and the Communiqué on the Generation of Unlicensed Electricity in the Electricity Market were enacted and published in the Official Gazette, dated 2 October 2013, No. 28783. The Unlicensed Electricity Regulation provides licence exemptions for the following categories:

- emergency groups and generation facilities that are not connected to transmission and distribution systems;
- generation facilities based on renewable energy sources with a maximum installed capacity of 1MW;
- municipalities' solid waste facilities and generation facilities established for the disposal of mud from treatment plants;
- micro-cogeneration facilities (defined by the EML as cogeneration facilities that have a total installed capacity of 100kW and below);
- cogeneration facilities (defined as the EML as cogeneration facility as facilities that simultaneously generate both heat and electricity) that meet the efficiency figures to be determined by the Ministry;
- renewable generation facilities that consume all the electricity that they generate, without feeding it into the transmission or distribution systems; and
- generation facilities owned by legal entities whose majority share capital is directly or indirectly owned by municipalities to be established on the water conveyance pipelines, sewage transport pipelines and the dams that are used for drinking water which are operated by the municipalities.

The Unlicensed Electricity Regulation restricts the allocation of installed capacity for real or legal persons generating solar or wind power for each transformer station at a maximum 1MW at the time of application, regardless of the number of consumption facilities belonging to the same person. In calculating the 1MW limit, the Unlicensed Electricity Regulation considers both real or legal persons and their direct or indirect subsidiaries as the same person. The Unlicensed Electricity Regulation also prohibits share transfers in the companies establishing unlicensed generation facilities prior to the provisional acceptance of these generation facilities except in certain exceptions, such as foreign indirect share transfers.

The President is entitled to increase up to five times the granted limit of the installed capacity of renewable energy generation facilities that will be exempted from the licence requirement which has not been increased so far.

In order to construct an unlicensed power plant, one should first apply to the relevant network operator (ie, distribution company authorised in the region where the power plant will be located or TEIAS) with certain documents, such as land usage right documents, environmental impact assessment document or single line diagram, depending on the energy resource. If the relevant network deems the application sufficient, a call letter to invite the applicant to sign the connection agreement is sent. Upon the issuance of this document, the applicants have 90 days to apply for project approval to the institution authorised by the Ministry and have 180 days for obtaining the approval. Investors sign a connection agreement with the network operator within 30 days following the project approval. However, in order for an unlicensed power plant to become operational, the system usage agreement should also be signed after the provisional acceptance of the plant has been reached in accordance with the Unlicensed Electricity Regulation. Under the Unlicensed Electricity Regulation, the provisional acceptance of facilities connecting to the system from high-voltage level must be made within two years from the signing of the connection agreement with the relevant distribution company; whereas such period is one year for facilities connecting to the distribution system from low-voltage level. Failure to obtain provisional acceptance within these timescales will result in the termination of the connection agreement, except in cases of force majeure and delays owing to reasons acceptable to EMRA.

The Unlicensed Electricity Regulation also includes the possibility of establishing cooperatives for unlicensed electricity generation based on renewable energy. It sets forth different maximum installed capacities for cooperatives depending on the number of the cooperative members where the installed capacity limit increases in parallel with the number of members (eg, while for a cooperative constituted of members of up to 100 persons, the maximum installed capacity may be 1MW, a cooperative constituted of members of more than 1,000 people may be allocated an installed capacity of 5MW).

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

TEIAS has a legal monopoly regarding transmission activities. No other legal entity is allowed to construct and operate transmission networks. TEIAS must ensure that connection to the transmission system, and the

system-use demands of real persons or legal entities, are met in a non-discriminatory manner.

According to the EML, if any new transmission plant or transmission lines to connect such a plant to the system are required for the connection of the generation plants to the system and if TEIAS does not have necessary financing for such an investment, the investment can be made or financed by the company or companies that request connection to the new plant. The investment amount shall be paid back under agreements to be signed between TEIAS and the investor or investors. The term for repayment is a maximum of 10 years. As per the Electricity Market Connection and System Usage Regulation published in the Official Gazette, dated 28 January 2014, No. 28896 (Connection and System Usage Regulation), the investment amount is determined by TEIAS as per the methodology approved by EMRA. TEIAS considers such investment amount as the system usage fee required to be paid by the investor in advance, and does not take any system usage fee from such investor until the total system usage fees reach the total investment amount calculated by TEIAS. In the event that there still remains any amount from the investment amount at the end of the 10-year period, such remaining amount is paid at once at the end of the 10th year by TEIAS.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The Renewable Energy Law provides a renewable energy support mechanism that covers different incentives and benefits for renewable energy projects including feed-in tariffs. The Renewable Energy Law provides different feed-in tariffs (fixed minimum electricity sale prices) depending on the type of renewable energy projects, as follows:

- Turkish lira equivalent of US$0.073 per kWh for hydroelectric power plants;
- Turkish lira equivalent of US$0.073 per kWh for wind power plants;
- Turkish lira equivalent of US$0.105 per kWh for geothermal power plants;
- Turkish lira equivalent of US$0.133 per kWh for biomass power plants; and
- Turkish lira equivalent of US$0.133 per kWh for solar power plants.

The above-mentioned feed-in tariffs will be applicable for the legal entities holding generation licences that started operations in the period between 18 May 2005 and 31 December 2020, and for a period of 10 years from the operation date. The Renewable Energy Law also authorises the President to determine the feed-in tariffs (in terms of tariffs amount, terms and the eligible energy sources) that will apply for the facilities that commence generation after 31 December 2020 (provided that the feed-in tariffs to be determined by the President does not exceed those stipulated by the Renewable Energy Law).

On the other hand, the feed-in tariff shall only apply from the prices set forth above in cases where there are no multiple applications wishing to obtain a generation licence for the same connection point or region. If there are multiple applicants, the contest explained in question 3 shall apply, and the feed-in tariff price that shall apply will be the price that the winner of the contest offered during the contest (which will be a lower price). Furthermore, in case the price offered by the winner of the contest is negative, the winner will no longer benefit from the feed-in tariff and will have to sell its electricity in the market.

To benefit from the renewable energy support mechanism (RES Mechanism), legal entities holding renewable energy generation licences and the RES certificate should apply to EMRA by 31 October of the year before they wish to benefit. Generators included in the RES Mechanism should remain in the concerned mechanism for the first year (lock-in period). After the above-mentioned 10-year period provided to renewable energy generation facilities expires, facilities generating renewable energy will not be able to participate in the RES Mechanism and will be only able to sell their electricity in the market or through bilateral agreements just like the other market participants.

The Renewable Energy Law also features further incentives as bonus tariffs for licence holders that use locally produced mechanical or electro-mechanical equipment or both, or components of this kind in renewable energy facilities, for a five-year term provided that they commence generation activities between 18 May 2005 and 31 December 2020. Such bonus tariffs differ according to the type of the renewable energy and the component manufactured from US$0.004 to US$0.024kWh. The Renewable Energy Law also authorises the President to determine such bonus tariffs (in terms of tariff amount, terms and the eligible energy sources) that will apply for facilities that commence generation after such date. The Regulation on the Support of the Local Components in Facilities Generating Electricity from Renewable Energy Resources published in the Official Gazette, dated 24 June 2016, No. 29752 (Local Manufacture Regulation) stipulates the principles, standards and certification processes regarding locally manufactured mechanical and electro-mechanical components. The components used in the construction of the power plant, and the parts that constitute such components and the percentage of each part in these components are set forth in the Local Manufacture Regulation. The Local Manufacture Regulation, provides that the bonus tariffs shall apply in proportion to the percentage of each locally manufactured part in the components, provided that the locally manufactured parts constitute at least 55 per cent of the relevant components.

The Renewable Energy Law limits the total generation of licensed solar energy companies up to 600MW for the solar power based generation facilities commenced until 31 December 2013, and authorises the President to determine the future limits. Note that all the pre-licence contests regarding solar generation licences (see question 3) for the initial 600MW total installed capacity limit have been completed and no new generation licence application for a solar power plant is possible until the President determines the future limits for the companies wishing to obtain generation licences based on solar power. As per the Strategy Plan of 2015–2019 of the Ministry, the total installed licensed solar capacity is planned to be increased to 3,000MW by 2019.

In addition to the 600MW limit for solar power energy that was allocated in small capacities by granting generation pre-licence, or licences, to companies following a contest (see question 4), an alternative method is also envisaged – to designate large-scale special areas called 'renewable energy resources areas' (RERAs) where electricity may be efficiently generated from renewable energy resources in the state-owned lands and enables the use of these areas by private parties for electricity generation from renewable resources in the EML. To that end, on 9 October 2016, the Regulation on Renewable Energy Resource Areas (RERA Regulation), which regulates the procedures and implementation of RERAs in more detail, was published in the Official Gazette and abrogated the Regulation on the Principles and Procedures regarding the Determination, Rating and Protection of Renewable Energy Resources for Electricity Energy Generation (Old Regulation), which was enacted in May 2005 but was never applied. As opposed to the small capacities allocated for each generator in a conventional licence-obtaining process, under the RERA Regulation, very high installed capacities can be allocated to one generator by granting a right of usage of the RERA (RERA Usage Right). While the RERA Regulation sets forth two different methods for the designation of the RERAs, in both methods, the RERA Usage Right is granted through a contest, the procedures of which are regulated in the RERA Regulation. Differently from the conventional licence-obtaining process, the RERA Regulation requires the use of locally manufactured components in the generation facility to be established in the RERA. The applicants of such contests will either be required to manufacture the components themselves in Turkey, in their own factory, or undertake to use components locally manufactured by third parties or both, depending on the specific requirements set forth in the specifications regarding the relevant RERA Usage Right. In cases where the RERA Usage Right-holder will be required to locally produce the components, it will also be required to perform research and development activities in accordance with the requirements to be stipulated under the specifications. As applicable to both methods, as per the RERA Regulation, the highest electricity purchase price that may be offered during the contest will be set forth in the specifications of each contest, taking into consideration the feed-in tariffs set forth for the generators subject to the renewable energy support mechanism in the renewable energy legislation. The winner and the purchase price of the electricity will be determined during the contest as the bidder offering the lowest price.

Unlicensed renewable energy generators also benefit from the feed-in tariff for their electricity exceeding their consumption amount automatically without opting into the RES Mechanism. The surplus

electricity will be purchased by the relevant authorised supply companies from the feed-in tariffs stated above for a period of 10 years from the start of electricity generation in such facility. However, while the licence holders may continue selling their electricity freely after the expiry of such 10-year period, an unlicensed generator will not be able to sell the electricity it generates through the system and only continue to use it for its own consumption. With the Local Manufacture Regulation and the amendment in the Unlicensed Electricity Regulation in line, unlicensed facilities can no longer benefit from bonus tariffs applied in the use of locally manufactured components. Under the regime set forth with RERA Regulation, on the other hand, the electricity that will be generated by the generation facility will be subject to a purchase guarantee under the RES Mechanism at the price stated in the RERA Usage Right agreement (that will be signed by the Ministry and the winner), which is determined as per the contest results. The company obtaining the RERA Usage Right under a contest will not have an option to opt in or opt out to the RES Mechanism. The purchase period will start from the date of execution of the RERA Usage Right agreement (not from the date of the licence issuance) and after the expiry of such period, the licensee may sell its electricity in the market with its generation licence.

Another incentive granted to renewable energy facilities regards the use of state properties. If any state property is used for generating electricity from renewable resources or mines and minerals, the Ministry of Environment and Forestry or the Ministry of Finance shall permit the use of such properties with respect to the facility and access ways and energy transmission grids up to the connection point of the grid in return for a fee. Such permission may be in the form of permits, leases, rights of easement or rights of usage. For facilities that start operating before the end of 2025, for access ways and energy transmission grids up to the connection point, a discount of 85 per cent shall be applied to the fees for permission, lease, right of easement and right of usage for the first 10 years of their investment and operation periods.

According to the EMLR, the legal entities applying for a pre-licence and licence for the generation facilities based on domestic natural resources and renewable energy resources shall only pay 10 per cent of the total pre-licensing and licence-obtaining fees. Generation facilities based on renewable and domestic energy resources shall not pay annual licence fees for the first eight years following the facility completion date inserted in their respective licence.

Also, TEIAS and distribution licensees shall give priority to the system connection of generation facilities based on domestic natural resources and renewable resources.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Government energy policy promotes renewable energy resources to tackle climate change (see question 5). The government is also promoting energy efficiency to decrease the amount of power that is consumed. Turkey also signed the Kyoto Protocol in February 2009; however, it is not listed in Annex B of the Protocol. Turkey signed the Paris Agreement opened to the signature at the United Nations Climate Change Conference (COP 21) on 22 April 2016, however has not yet ratified the agreement.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently there is no regulatory framework supporting or providing any incentive for the research and development of storage solutions. However, the Electricity Grid Regulation published in the Official Gazette, dated 28 May 2014, No. 29013 (Grid Regulation) defines energy storage systems as systems that can react quickly, circulate the energy perpetually, supply the energy to or draw the energy from the system when requested, and store the electricity energy in limited capacity perpetually through the help of mechanical, hydraulic, electrochemical, chemical and thermal energy storage systems, and sets forth how the energy storing systems may be used within the scope of ancillary services as per the principles to be prepared by TEIAS and approved by EMRA. Provisional article 1 of the Grid Regulation sets forth the deadline for the submission of such principles and procedures by TEIAS to EMRA as 31 December 2015. At the time of writing no principle or procedure has yet been published in this respect, neither by EMRA nor by TEIAS. However, energy storing systems are included in the ancillary services regulated under the Electricity Market Ancillary Services published in the Official Gazette, dated 26 November 2017, No. 30252. Additionally, with a recent amendment to the EML, it is provided that the market activities carried out within the scope of the electricity storage and demand-party response, the procedures and principles and the limits which are determined by EMRA's board following the opinion of the Ministry, may be performed without obtaining a licence.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

To promote private sector nuclear energy investments, the Nuclear Energy Law, the first such law of Turkey, was published on 21 November 2007.

The purpose of the law is to stipulate the procedures and principles regarding the commissioning and operation of nuclear power plants for electrical energy production and energy sale in accordance with energy planning and policies.

The Turkish Atomic Energy Authority and EMRA have published the vast majority of legislative documents and criteria regarding nuclear safety, licensing, reactor types, power plant lifetimes, proven technology, fuel technology, localisation, operational records and electrical power.

The Turkish government promotes nuclear power plants; currently there are three nuclear power projects either in the process of realisation or being considered to be realised. One of those is the nuclear power plant Akkuyu Power Plant, which is currently being built by one of the subsidiaries of Rosatom State Atomic Energy Corporation, Akkuyu NPP Joint Stock Company. The installed capacity of Akkuyu Power Plant is expected to be 4,800MW and the project is expected to be completed by 2023.

An agreement on cooperation in relation to the construction and operation of the second nuclear power plant in Sinop was signed on 3 May 2013 between Japan and Turkey. Turkey's second nuclear power plant, which is envisaged to come into operation by 2025 and expected to have an installed capacity of approximately 4,400MW, will be built at Sinop by a Japanese-French consortium.

A third nuclear power plant is also expected to be built; however, its location has yet to be determined. In November 2014 an agreement was signed to begin exclusive negotiations to develop and construct a four-unit nuclear power plant between EUAS, Westinghouse Electric Company and China's State Nuclear Power Technology Corporation; however, as of the date of writing, the details of this project remain uncertain.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

TEIAS has a legal monopoly on transmission activities. No other legal entity is allowed to construct and operate transmission networks. TEIAS also obtains a transmission licence from EMRA to conduct transmission activities. The transmission licence can be issued for a maximum of 49 years and a minimum of 10 years at a time.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Eligible consumers, legal entities engaged in generation activities, distribution companies and organised industrial zone distribution licence-holding companies may request access to the transmission grid.

Requests are evaluated by TEIAS and can only be rejected if:

- the technical features of the network at the required connection point are insufficient;

- the standards with respect to system connection, the condition of the facility to be connected to the system and the technical standards indicated in the relevant regulations have not been met;
- TEIAS justifies that the intended connection would constitute an obstacle to public service obligations; or
- a connection point, which is more economical and provides fewer losses in power compared with the connection point applied to, is available in the case of applications for connection of wind or solar power generation facilities.

Transmission system users shall sign connection or use-of-system agreements (or both) with TEIAS.

If TEIAS is of a negative opinion with respect to the connection to the system and system use, it should justify such an opinion and such an opinion should also be approved by EMRA. If the reasons for such an opinion are not deemed appropriate by EMRA, TEIAS would be obliged to sign the related connection and system use agreements.

In the event that there are multiple applicants wishing to connect to the transmission system from the same connection point and it is not possible for the transmission system to meet all the applications, the following company types will have priority in the respective order:

- the distribution companies;
- organised industrial zone distribution licence-holding companies;
- companies generating electricity based on domestic coal; and
- companies generating electricity based on renewable energy.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

With a legal monopoly over the transmission grid, TEIAS is responsible for the grid's expansion. According to the Electricity Grid Regulation published in the Official Gazette, dated 28 May 2014, No. 29013 (Grid Regulation), TEIAS prepares the 20-year statement report regarding the transmission system (long-term report).

Such long-term report includes items such as investment plans regarding the transmission system and potential supply possibilities. In addition to the long-term report, TEIAS is also responsible for preparing and publishing a short-term electricity energy supply and demand projection report for the following year with the participation of all the authorities and institutions and the cooperation of the Ministry (Short Term Report).

Enabling generation companies to finance and make investments for new transmission lines required for the connection of the generation facilities to the system when TEIAS does not have necessary financing under the repayment plan regulated in the Connection and System Use Regulation (see question 4) may also be interpreted as an encouragement for the expansion and improvement of the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The transmission service is subject to regulated tariffs consisting of fees required to be collected for the performance of the transmission system usage activity by TEIAS. The transmission tariff includes the transmission system usage price, transmission system operation price (market operation included) and other fees that may occur under the legislation. Transmission system usage and operation tariffs are prepared and proposed by TEIAS.

TEIAS prepares the transmission tariff proposal and then submits it to EMRA for approval. The tariff becomes effective for the tariff period once approved by EMRA. TEIAS is obliged to announce its approved tariffs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

EMRA is responsible for preparing regulations for connection and reliability of the transmission grid, such as the Grid Regulation and the Connection and System Usage Regulation. These regulations outline the technical and other standards to be met for the transmission system and also for connection to the transmission network.

According to such regulations, the general responsibility for assuring transmission grid reliability lies with TEIAS. TEIAS is obliged to meet the demands of third parties for connection to the transmission network and system use on a non-discriminatory basis and between equal parties. TEIAS is entitled to take necessary measures and actions in the case of any threat to the reliability and safety of the transmission grid. It is also responsible for the planning and development of the transmission system.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution activities are performed by private distribution companies in the regions indicated in their respective licences (see question 2). There are 21 regions and all the distribution companies regarding for each region have a monopoly in their region. There is no possibility of obtaining a new distribution licence in Turkey unless a licence regarding a distribution region is cancelled. In case of cancellation, a privatisation method will apply for granting the relevant concession to operate a distribution licence. It is also possible to acquire shares of a distribution company.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Legal entities engaged in generation activities and eligible and non-eligible consumers can obtain access to the distribution grid. They have to sign connection or use-of-system agreements, or both, with distribution companies. In the event the consumers execute a connection agreement, in order to connect to distribution system such consumers have to certify that a retail sale agreement or bilateral agreement has been executed between such consumer and the supply company.

In principle, users are required to apply to the distribution companies in the region where they are located. Applications are evaluated by the distribution company and can only be rejected if:

- the technical features of the network at the required connection point are insufficient;
- the standards with respect to system connection, the condition of the facility to be connected to the system and the technical standards indicated in the relevant regulations have not been met;
- the distribution company justifies that the intended connection would constitute an obstacle to public service obligations; or
- a connection point, which is more economical and provides fewer losses in power compared to the connection point applied to, exists, in case of applications as to the connection of wind power or solar power generation facilities.

A distribution company's rejection is subject to EMRA's evaluation.

Electricity generation facilities must apply to distribution companies to be granted access to the distribution grids after obtaining preliminary licence but before applying for a generation licence, upon verification that their connection applications are appropriate.

Similar to the investments regarding the transmission system explained in question 4, in the event new investment or an expansion investment is necessary for generation and consumption facilities to connect to the distribution system or for meeting the expansion demands of the generation and consumption facilities or such establishment cannot be timely planned, the legal or natural persons requesting such connection may be required to finance or realise such investment themselves on behalf of the distribution company, in which case the investment amount is repaid to such legal or natural person in maximum 12-monthly equal instalments within the year following the commissioning or when the usage rights of the lands on which the relevant investment passes through transferred to TEDAS.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no rate or tax benefits to encourage the expansion of the distribution network. On the other hand, the distribution companies are obliged by law to make the necessary capacity increases and investments.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

After revenue requirements and costs for each distribution company are determined, considering elements such as efficiency, the loss or theft ratio, and quality, EMRA applies a tariff equalisation scheme (national tariff). The national tariff is stipulated to eliminate regional differences in non-eligible consumer tariffs by allowing cross-subsidies from low-loss regions to high-loss regions for the transition period, which was stipulated by the EML as the period until 31 December 2015 and has been extended to 31 December 2020 by a decision of the Council of Ministers. The reason for the national tariff system was the high level of theft or loss in certain regions of Turkey.

There are two components of the tariff: retail sales and distribution, the latter including loss or theft amounts, transmission and retail services. The retail sales tariff is subject to a gross profit margin cap and a revenue cap. Distribution tariff, on the other hand, is subject to revenue caps. Operating expenses and investment requirements related to distribution services, retail services and transmission and other similar costs or expenses are to be reflected in the revenue cap.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

A supply licence is required for the sale of power to customers. Licences are granted by EMRA for a maximum term of 49 years (see question 2). Authorised suppliers are entitled to sell electricity to eligible customers across Turkey, non-eligible consumers and customers of last resort as last-resort supplier (see question 2) in the relevant distribution region. Suppliers that previously hold a wholesale licence and the ones granted supply licences afterwards are entitled to sell electricity to eligible consumers only. As a result, supplier companies and authorised supply companies will not have equal rights unless the eligible consumer limit is decreased to zero kWh (see question 21).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Retail sales to non-eligible consumers, wholesales of EUAS and last-resort electricity supplies are regulated and subject to a tariff. . Eligible consumers, instead of purchasing electricity at the tariff from the authorised supply companies, can make bilateral electricity purchase agreements with providers of electricity such as electricity generation companies and private wholesale companies (supply companies). At present, the eligible consumer limit is 2,000kWh per annum for 2018. On 20 January 2018, eligible consumers are divided into two groups as eligible consumers with high consumption and eligible consumers with low consumption, and are subjected to different tariffs in the event they do not make bilateral electricity purchase agreements ('Update and trends').

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The wholesale tariff of EUAS is prepared and proposed to EMRA by EUAS and approved by EMRA; however, this tariff only applies EUAS' supplies to authorised supply companies for their supply to non-eligible customers and customers of last resort, and EUAS has the liberty to negotiate the sale price for its other electricity supply activities (ie, EUAS' supplies to supply companies and eligible consumers) and determine the final sale price with its counterparties. The private wholesale companies (supply companies) may sell power with bilateral agreements to eligible consumers (see question 18). In addition, they may sell power in the day-ahead and intraday markets.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The EML obliges the authorised supply companies to supply power, as a last-resort supplier, to the eligible consumers whose power demands cannot be met by other suppliers (see question 2). Authorised supply companies are also required to meet the energy and capacity demands of non-eligible consumers in their regions.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

EMRA, which is an independent regulatory authority, determines the regulatory policy with respect to the electricity sector. It has been established as an independent regulatory authority to inspect and regulate the electricity market.

23 Scope of authority

What is the scope of each regulator's authority?

EMRA has a very broad authority to regulate the market, including:

- establishing a legislative framework to ensure reliable, high-quality, stable and low-cost electricity services;
- granting, amending or cancelling licences;
- approving and amending tariffs;
- establishing and enforcing standards and rules for relations among affiliates to promote competition; and
- imposing administrative fines and sanctions for non-compliance with the applicable legislation and the terms and conditions set out in the licence or the decisions of EMRA.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The President appoints the members and chairman of EMRA. The board of EMRA consists of seven members, including a chairman and a second chairman. They must have completed at least four- years in higher education.

EMRA has financial and administrative autonomy. However, all activities and transactions of EMRA are subject to audit by the Turkish Court of Accounts.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The decisions of EMRA can be challenged before the Administrative Court of First Instance by the related parties within 60 days of receipt of EMRA's decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Competition Authority (TCA), which was established pursuant to Law No. 4054 on Protection of Competition, dated 13 December 1994 (the Competition Law), has the authority to approve or disapprove mergers or other changes in control over businesses in a sector

or acquisitions of utility assets. In addition to the TCA's authority with respect to certain mergers, acquisitions or changes in control, EMRA's approval is required (see question 27).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Pursuant to article 7 of the Competition Law, the merger of two or more undertakings aimed at creating a dominant position or strengthening their dominant position, as a result of which competition is significantly decreased in any market for goods or services within the whole or any part of the state, is prohibited. Furthermore, acquisition, except acquisition by way of inheritance, by any undertaking or person of another undertaking, either by acquisition of its assets or all or part of its partnership shares, or of other means that confer it with the power to hold a managerial right, is also prohibited.

The TCA declares, via communiqués, the types of mergers and acquisitions that have to be notified to the TCA, and for which an approval must be obtained for them to become legally valid.

According to Communiqué 2010/4 regarding Mergers and Acquisitions Requiring the Approval of the Competition Board, published in the Official Gazette, dated 7 October 2010, No. 27722, certain turnover thresholds are set forth regarding merger and acquisition transactions in order to determine whether the transaction is subject to the TCA's approval. According to the Communiqué, in the case of a merger or acquisition, the TCA's approval must be obtained if the total domestic turnovers of transaction parties collectively exceed 100 million Turkish liras and the domestic turnovers of at least two transaction parties separately exceed 30 million liras; or in the case of an acquisition, the value of assets or business subject to the acquisition, or in case of a merger the local turnover of one of the parties, exceeds 30 million liras and the worldwide turnover of one other transaction party exceeds 500 million liras. As per the legislation, while calculating the turnover of a transaction party, the turnover of the relevant party and of the companies and persons holding control of or being controlled by the equity, management or voting rights of the relevant party is taken into consideration.

In the electricity sector, in addition to the TCA's control, the approval of EMRA is required in the following cases:

- acquisition of, directly and indirectly, 10 per cent or more share in the share capital of a company or 5 per cent or more in a publicly traded company;
- merger between legal entities;
- partial or total spin-off;
- change of control status of any legal entity;
- transfer of a generation facility owned by a licensee through sale, transfer, lease or another similar arrangement resulting in the transfer of the right to use to another legal entity; or
- transfer of the rights and obligations of a generation licence holder to another legal entity which has the same partnership structure.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The TCA can prevent or prosecute anticompetitive or manipulative practices in all sectors, including the electricity sector. EMRA also has authority to approve certain mergers and acquisitions in the energy sector, as explained in question 27. Additionally, as per the Electricity Market Balancing and Settlement Regulation published in the Official Gazette, dated 14 April 2009, No. 27200 (BSR), EMRA, directly or upon the submission of a report by the market operator (ie, EPIAS) or the system operator (ie, TEIAS) to EMRA, is authorised to request the TCA to initiate scrutiny of legal entities that are suspected of any anticompetitive act or transaction in relation with their activities regarding organised wholesale electricity markets regulated under BSR.

Notwithstanding the foregoing, EMRA may take measures regarding an authorised supplier that has anticompetitive practices. The measures that EMRA would take for such authorised suppliers may include restructuring their management and restricting ownership or control relationship with the relevant distribution company.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

No specific criteria are provided for the electricity market. Such standards are provided in the Competition Law.

According to article 4 of the Competition Law, agreements and concerted practices between undertakings, and decisions and practices of associations of undertakings that have as their object or effect or likely effect the prevention, distortion or restriction of competition directly or indirectly in a particular market for goods or services are illegal and prohibited. Examples of such cases are as follows:

- fixing the purchase or sale price of goods or services, elements such as cost and profit that form the price, and any other terms of purchase or sale;
- sharing markets for goods or services, and sharing or controlling all kinds of market resources or components;
- controlling the amount of supply or demand in relation to goods or services, or determining them outside the market;
- impeding or restricting the activities of competitors, excluding undertakings operating in the market by boycotts or other practices, or preventing new entrants to the market;
- apart from exclusive dealing, applying different conditions to persons with equal status for the same rights and obligations; and
- contrary to the nature of the agreement or commercial usages, obliging the purchase of other goods or services together with a good or service, or tying a good or service demanded by purchasers acting as intermediary undertakings to the condition of displaying other goods or services by the purchaser, or imposing terms as to the resupply of a good or service supplied.

In addition, the abuse of a dominant position in the market is also prohibited by the Competition Law. According to article 6, the abuse, by one or more undertakings, of their dominant position in a market for goods or services within the whole or a part of the state on their own or through agreements with others or through concerted practices, is prohibited.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

The TCA may impose administrative monetary fines of up to 10 per cent of annual gross revenues of the undertakings generated by the end of the financial year preceding the TCA's infringement decision, or if it is not possible to calculate it, by the end of the financial year closest to the date of such a decision, and such annual gross revenues are determined by the TCA. The TCA may also order for the exercise of certain actions or oblige the infringing persons to refrain from certain actions for the re-establishment of competition and reversion to the situation before the infringement.

The TCA may also impose monetary fines on real persons employed in the managerial bodies or other employees of the undertakings of up to 5 per cent of the fine imposed on the undertaking.

Another sanction mechanism is established for competition breaches in the organised wholesale electricity market with the BSR (see question 28). If TCA detects a competition breach by a market participant or balancing unit or both, EMRA may impose maximum price limits to the breaching market participant or balancing unit or both in the day-ahead and balancing markets up to a year.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no specific requirements or limitations on acquisitions of interests in the electricity sector by foreign companies.

Update and trends

As per the 2017 plan of the Turkish government, published on 30 October 2016, a capacity mechanism was established by the end of 2017 for the purpose of ensuring security of electricity supply during times when supply of electricity is insufficient and below that required under the EML. Article 20 of the EML sets forth that the principles and procedures regarding the establishment of the capacity mechanism be regulated by the Ministry of Energy and Natural Resources. Accordingly, the Electricity Market Capacity Mechanism Regulation (Regulation) was published on 20 January 2018. As per the Regulation, mainly power plants generating electricity based on lignite, imported coal and natural gas are targeted to participate in the capacity mechanism. The Regulation determines which power plants are eligible to participate in the mechanism as per certain criteria, such as the installed capacity, the age of the power plant, whether the source used is local or foreign and the efficiency of the power plant. The transmission system operator, TEIAS, manages the capacity mechanism. Power plants participating in the mechanism receive payments for keeping their electricity generation capacities available for TEIAS. The Regulation determines the price to be paid for each power plant differently, as per the formula set forth in the Regulation, which also, among other things, takes into consideration whether the components of costs are below or above the market clearing price. The prices to be paid in a year cannot exceed the budget determined for that year. The Regulation also stipulates that if the weighted average of capacity usage ratio of the last 12 months is less than 10 per cent for facilities using local sources, and 15 per cent for other facilities, no capacity payment will be made. As per the Regulation, the entities wishing to participate in the capacity mechanism should apply prior to 15 October of the previous year with the necessary documents. For 2018, however, the Regulation set forth that the applications be made by 31 January 2018, and that facilities participating in the mechanism be deemed to have participated in the mechanism from the start of 2018.

The facilities that will benefit from the mechanism for 2018 were announced on 15 February 2018. As per the announcement 30 companies were listed to have participated in the mechanism, and two companies were announced as nominees to participate in the mechanism upon their provisional acceptance. The budget for 2018 was determined as 1.4 billion Turkish lira. The components of costs are determined as 183 Turkish lira for domestic thermal power plants, 175 Turkish lira for imported coal thermal power plants and 174 Turkish lira for natural gas power plants.

EMRA published a communiqué on the regulation of the last-resort supply tariff (the Communiqué) that entered into force on 20 January 2018. The Communiqué divides the eligible consumers (the threshold of eligible consumer being 2,000kWh for 2018, which amounts to an electricity bill of approximately 70–75 Turkish lira) who do not choose to procure their electricity needs from supply companies through bilateral agreements into two different types; consumers with low-consumption, and consumers with high-consumption. According to the Communiqué, while the tariff to be applied for eligible consumers with low-consumption will be equal to the retail tariff approved for the non-eligible consumers, the eligible consumers with high-consumption will be subject to a higher tariff (ie, last-resort supply tariff to be determined by EMRA), which is likely to push those consumers to purchase their electricity via bilateral agreements from supply companies. As per the Communiqué, the threshold of the low- and high-consumption will be determined by EMRA each year considering social and economic conditions and depending on the development of the market. The threshold is determined as 50 million kWh for 2018.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As TEIAS has monopoly over the transmission system, it is also the only authority entitled to construct and operate interconnections. The articles of association of TEIAS sets forth that TEIAS is responsible for the preparation of the Electricity Grid Regulation, which determines the technical and operational standards for the interconnected system and BSR, and establishing the required infrastructure and organisation for the implementation thereof, and carrying out the relevant international interconnection works in accordance with the Ministry's international interconnection policies. As per article 8 of the EML, TEIAS may construct or operate the parts of international interconnection lines' located outside the national borders and establish an international company to that end, or become partner to an existing international company and participate in organisations regarding the operations of regional markets with the approval of the Ministry. In line with the EML, the Import and Export Regulation published in the Official Gazette, dated 17 May 2014, No. 29003 (Import and Export Regulation) states that interconnection line capacity allocations, tracking of the use of interconnection lines and the congestion management is conducted by TEIAS, but TEIAS is allowed to transfer these rights and obligation to international institutions totally or partially in accordance with the international agreements, provided that the approval of the Ministry is obtained.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Synchronous parallel interconnections

Companies (ie, generation and supply companies for export and supply companies for import) will not need to obtain special permission to perform import and export activities using synchronous parallel interconnections. Currently, the synchronous parallel interconnection lines in Turkey are the interconnection lines established with the European Network of Transmission System Operators for Electricity's (ENTSO-E) Continental Europe Synchronous Area (ie, Bulgaria and Greece) in accordance with the integration of Turkey to the ENTSO-E system. After a long trial period, the ENTSO-E Regional Group Continental Europe's decision on permanent connection to continental Europe was publicly announced in May 2014. In line with this decision and the agreement reached in meetings in April 2014 on the commencement of permanent synchronous operation of the Turkish electricity system with the continental European system, on 15 April 2015 a long-term agreement was signed between TEIAS and ENSTO-E. By the execution of this agreement, Turkey has committed to promote the harmonisation of its electricity regulation with the EU's third electricity package and to comply with the technical standards of ENTSO-E. The Observer State Agreement having been executed between Turkey and ENTSO-E on 14 January 2016, Turkey has become the first observer member of ENTSO-E. The commercial electricity exchange between Turkey and ENTSO-E's Continental Europe Synchronous Area is currently carried out through three connection lines, two of which connect the Turkish system to the Bulgarian system, while the other connects the Turkish system to the Greek system. In order to perform electricity export or import activities with Bulgaria or Greece, companies are required to have allocated capacities with regards to the electricity amount that they will import or export. The capacities may be obtained either in Greece or Bulgaria from the Greek or Bulgarian transmission system operator by the company which the electricity will be imported from or exported to; or in Turkey from TEIAS by the Turkish company which will import or export electricity. The capacity allocations in Turkey for cross-border trade between Turkey and Bulgaria or Greece are made by TEIAS via an auction process. Accordingly, the auctions for the allocation of the capacity by TEIAS are realised on the T-CAT Platform where bids are set and the annual auction rules for commercial exchanges are also published by TEIAS. Companies wishing to participate in these auctions and those wishing to trade in energy with Greek or Bulgarian companies awarded capacity allocation in Greece or Bulgaria must be registered on the T-CAT Platform and have to adhere to the auction rules.

Non-synchronous interconnections

If a cross-border trade is planned to be conducted through non-synchronous parallel interconnection lines, then the approval of EMRA shall be obtained after submitting the documents and information required in the Import and Export Regulation. In order for EMRA to grant such an approval, the positive opinion of the Ministry must be obtained by EMRA. Before granting such an approval, EMRA also obtains opinions from TEIAS or distribution licensees on technical

matters. Although some are non-operational at the moment (eg, Hopa-Batum interconnection line, which, it was decided, is only to be used in emergency situations), Turkey has interconnection lines with all of its neighbouring countries, but none of the lines with the neighbouring countries other than Bulgaria and Greece are currently synchronous parallel.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

A distribution company cannot engage in any activity other than distribution or be a direct shareholder of a legal entity engaged in any other market activity. In addition, distribution companies unbundled their distribution and retail activities into separate legal entities as of 1 January 2013 (see question 2).

The EML provides that the total amount of electricity that an entity can generate through generation companies under its control cannot exceed 20 per cent of the electricity generated in Turkey in the preceding year.

The EML further provides that the total amount of electricity to be sold by supply companies to end customers cannot exceed 20 per cent of the total electricity consumed in the market during the preceding year. In addition, the EML provides that the total electricity amount that supply companies can purchase from generation companies and importer companies (ie, supply companies with an importation authorisation) or import cannot exceed 20 per cent of the total electricity consumed in the market during the preceding year. TETAS has been excluded from the above market restrictions.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

As the regulatory authority of the market, EMRA may enforce restrictions on utilities dealing with affiliates.

In the case of non-compliance, the licensee is given a notice period of 30 days to remedy the non-compliance. If the non-compliance continues following the notice period, a fine of 718,013 Turkish lira (for 2018) will be imposed. Where the licensee repeats the non-compliance, the fines imposed each time are doubled. It may also result in revocation of its licence.

In other cases, such as providing false or deceptive information while making a licence application, having activities falling out of the scope of the licence, acting against the shareholding participation restrictions and so forth, certain other fines of up to around 1.4 million Turkish lira and licence revocation sanctions are regulated under the EML.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Legislative framework
Broadly speaking, the following legislation regulates the electricity sector in the United Kingdom:

- the Electricity Act 1989 (as amended most recently by the Electricity and Gas (Internal Markets) Regulations 2017 (SI 2017/493));
- the Utilities Act 2000;
- the Energy Act 2004;
- the Energy Act 2008;
- the Energy Act 2010;
- the Energy Act 2011;
- the Energy Act 2013, which implements key aspects of electricity market reform and is a policy initiative pioneered by the UK government to mobilise £110 billion of capital investment required by 2020 to ensure reliable and diverse supply of low-carbon electricity; and
- the Energy Act 2016

As a member of the European Union, various EU legislation also applies to the UK electricity sector as a result of the either direct effect or by way of implementation of EU laws into domestic legislation. As Brexit discussions continue, so too does the legislative uncertainty within this area.

Policy
The Department for Business, Energy and Industrial Strategy (BEIS), established after the United Kingdom's decision on 23 June 2016 to exit the EU, is celebrating its second anniversary and has continued to prioritise three key policy areas: security of supply, cost and decarbonisation. It has done so mainly through the enactment of the Electricity Market Reform (introduced by the Energy Act 2013, described above), which has introduced contracts for difference in furtherance of its decarbonisation policy and the capacity market in order to provide security of supply in times of high demand. On 19 July 2018, the Domestic Gas and Electricity (Tariff Cap) Act 2018 received royal assent. This new act puts in place a requirement on the energy regulator, the Office of Gas and Energy Markets (Ofgem), to cap standard variable and default energy tariffs. This is one of the BEIS policy initiatives to regulate the cost of electricity to the consumers.

The general energy policy outlined above, coupled with the potential impact of the continuing negotiations relating to the withdrawal of the United Kingdom from the European Union, means that there will likely be a legislative overhaul regarding the electricity sector.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Gas and Electricity Markets Authority (GEMA) has primary responsibility for regulation of the energy sector. GEMA's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998 (CA 1998), the Enterprise Act 2002 and the Energy Acts of 2004, 2008, 2010 and 2011) as well as arising from directly effective European Community legislation.

GEMA is constituted of individuals who are appointed by the Secretary of State for specified terms of not less than five years. GEMA is independent and has very limited stakeholder participation (such as the Secretary of State's ability to remove members on the grounds of misbehaviour, determine the remuneration of members and give guidance).

GEMA delegates its functions to Ofgem and provides Ofgem with strategic direction and oversight.

A licence from GEMA is required before the generation, transmission, distribution or sale of power. Such licence is issued by Ofgem following receipt of a written application together with the relevant fee. Ofgem will determine the relevant conditions to the licence and the licence-holder must comply with those conditions as well as with various industry codes and standards, such as the Balancing and Settlement Code, the Grid Code and the Distribution Code

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The authorisations required to construct and operate generation facilities depends on the type and size of facility to be constructed or operated. By way of example, certain types of energy infrastructure fall within the category of 'nationally significant infrastructure project', and as such require a Development Consent Order (DCO) under the Planning Act 2008. The thresholds for projects falling under this category are more than 50MW onshore, and more than 100MW offshore. Applications for DCO are made to and publicly examined by the Planning Inspectorate who then makes a recommendation to the Secretary of State for Energy and Climate Change. Projects with a generating capacity of 50MW and less in England and Wales are consented under the Town and Country Planning Act 1990.

For offshore generating stations with a generating capacity of more than 1MW but less than or equal to 100MW, consent under section 36 of the Electricity Act 1989 is also required.

In Scotland, section 36 of the Electricity Act 1989 applies to all projects above 50MW. Projects that are less must apply for consent to the local planning authority under the Scottish Planning Act. The Scottish Executive is responsible for dealing with applications for consent for generating projects onshore. Marine Scotland, a directorate of the Scottish Executive, is responsible for dealing with applications for consent under section 36 of the Electricity Act 1989 for offshore generating stations in Scottish waters.

Depending on the type of plant, further authorisations such as relating to health and safety, environmental or nuclear specific matters may also be required from the appropriate regulator.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Generators applying directly to connect to the transmission system (ie, with a capacity of at least 100MW) need a connection agreement with National Grid Electricity Transmission (NGET) and are required to

complete a connection application form, provide technical data and pay the relevant application fee.

The generator is required to become a party to the Connection and Use of System Code (CUSC) Framework Agreement and comply with the CUSC and the requirements of the Grid Code (which sets out rules related to planning, operation and use of the electricity transmission network). The Grid Code, the Balancing and Settlement Code and the System Operator Transmission Owner Code are maintained by NGET in accordance with its transmission licence to govern the relationship between it and the electricity industry participants.

Small generators wishing to connect to the distribution network, that do not require explicit access rights to the National Electricity Transmission System, make similar agreements with the relevant distribution network operator.

There may be other requirements, such as the provision of financial security by the generator, if additional works are required to be made before a connection is available.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Government policy does encourage power generation based on alternative energy sources, in particular, renewable energies. See the United Kingdom chapter in *Getting the Deal Through*: Renewable Energy 2019.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The Climate Change Act 2008 was the world's first legally binding climate change legislation. The United Kingdom is committed to achieving long-term goals of reducing greenhouse gas emissions and to ensuring steps are taken towards adapting to the impact of climate change under the Climate Change Act 2008, in addition to which, pursuant to the EU Renewable Energy Directive 2009/28 on the promotion of use of energy from renewable sources, the United Kingdom committed to have 15 per cent of its energy consumption derive from renewable sources by 2020 (Promotion of the Use of Energy from Renewable Sources Regulations 2011 (SI 2011/243)).

In November 2016, the government published its plans to upgrade UK energy infrastructure, reaffirming its commitment to spend £730 million of annual support on renewable electricity projects, also setting out proposals for the next steps to phase out electricity generation from unabated coal-fired power stations within the next decade. This indicates that government policy in the long-term is to invest in new, cleaner energy capacity.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Electricity storage is treated as a form of electricity generation and, as such, the applicable legal framework for electricity storage is currently the same as that applicable to electricity generation. As a result, there is a lack of legislative clarity with respect to electricity storage that may act as a deterrent to investment. Towards the end of 2017, Ofgem ran a consultation with the aim of making changes to the electricity generation licence to make it fit for storage. Ofgem has stated that the intention of the changes would be to provide regulatory certainty to storage facilities, both existing and developing, encourage deployment of this new technology into the system and to ensure that a level playing field exists, so that storage can compete fairly with other sources of flexibility. The proposed changes would also address in an appropriate manner the issues storage facilities face surrounding final consumption levies (currently some storage could face double charging of final consumption levies both at the time of importing from and at the time of exporting electricity to the grid). The consultation is currently awaiting decision but indicates that the government intends to encourage the support of electricity storage research and solutions.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The United Kingdom does not have a separate subsidy regime for new nuclear power plants, however nuclear generation may be eligible for subsidies designed to promote low-carbon generation as well as being able to participate in capacity market auctions. It is expected that government policy in relation to new nuclear power plants will also take its lead from public response to the progress of the Hinkley Point C plant.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The authorisations required to construct transmission or distribution networks is dependent on the type and location of the distribution or transmission assets.

Under section 37 of the Electricity Act 1989, an application to the Secretary of State is necessary in order to install electric lines above the ground (other than in certain circumstances), the application must be in writing and include all necessary information, depending on the location of the electric lines other consents such as from the highway authority may also be required.

As mentioned above, a DCO is required where the project in question is a nationally significant infrastructure project. Overhead electric lines with a nominal voltage of 132kV or more are considered to be a nationally significant infrastructure project. A DCO will include all necessary consents and ancillary planning permissions.

A transmission licence is required for the operation of a transmission network. National Grid has the transmission licence for England and Wales, and therefore owns and operates the transmission system in England and Wales.

Where territorial waters are concerned, the relevant authorities are the Marine Management Organisation, National Assembly Wales, Marine Scotland and the Department of the Environment for Northern Ireland.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

To obtain connection to the transmission grid, a generator must have a capacity of at least 100MW, complete a connection application form, pay an application fee, provide the relevant technical data, and sign a bilateral Connection Agreement. The generator must also comply with the various applicable industry codes such as the Connection and Use of System Code, which sets out the contractual framework for connection to and use of transmission services.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Ofgem published its 'Upgrading our Energy System, Smart Systems and Flexibility Plan' in July 2017. The plan sets out 29 actions to be taken by the government, Ofgem and industry to:

- remove barriers to smart technologies (such as storage and demand-side response);
- enable smart homes and businesses; and
- improve access to energy markets for new technologies and business models.

These actions are designed to reduce the costs of the energy system, and help keep energy bills low for consumers, as well as to promote cleaner energy.

Following the success of the competitive offshore transmission regulatory regime under which licences to operate offshore transmission infrastructure are granted following a competitive tender process, Ofgem plans to replicate the competitive tender for the purpose of high

value onshore transmission assets. It is envisaged that this tender process would encourage innovation and reduce costs.

In addition to the above, as part of the revenue=incentives+innovation+outputs (RIIO) price controls, Ofgem introduced the Electricity Network Innovation Competition (NIC).

The Electricity NIC is an annual opportunity for electricity network companies to compete for funding for the development and demonstration of new technologies, operating and commercial arrangements. Funding is provided for the best innovation projects (ie, those that help all network operators understand what they need to do to provide environmental benefits, reduce costs, and maintain security). Up to £70m per annum is available through the Electricity NIC.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Connection charges, transmission network use of system charges and balancing services use of system charges are currently the three types of charges payable to NGET by transmission systems users.

The charging methodologies are set out in the Connection and Use of System Code which is prepared by NGET and confirmed by Ofgem. NGET is required under its transmission licence to ensure that the charging methodologies are up to date. The charging methodologies are set primarily so as to reflect costs of operating the grid but also to enhance stability and predictability of the transmission charges and to encourage competition in the electricity sector.

During 2017, Ofgem embarked on a process of setting up a new price control structure to reform and update the exisiting RIIO-ED1 model (see question 12 of last year's chapter for further details in relation to the RIIO-ED1 model) and it published its decision in relation to the RIIO-2 framework consultation at the end of July 2018. In summary, the consultation separated the framework into five key themes:

- a stronger voice for consumers;
- changes in how networks are used;
- driving innovation and efficiency to benefit consumers;
- simplifying price controls; and
- ensuring fair returns.

The key outcomes from the consultation were as follows:

- RIIO-ED1 has worked well, and the incentive based RIIO framework will be used to set price controls;
- higher returns are justified where these result from genuine innovation and efficiency;
- the price control mechanism will be tougher for network companies but those who deliver great customer service at lower cost will be rewarded; and
- the price control structure will continue to create an attractive environment for investors but returns should reflect the low level of risk of a stable, predictable regulatory framework.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Transmission licence holders are under statutory obligation to develop and maintain the transmission grid, as well as facilitating competition in the generation and supply of electricity. Ofgem has the authority to regulate the activities of the transmission licence holders and to set price controls. Both Ofgem and NGET have the authority to grant exemptions from certain obligations under the National Electricity Transmission System Security and Quality of Supply Standards which the transmission licensees must comply with.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

A distribution licence is required for the operation and maintenance of a distribution network. See question 9 in relation to authorisations required to construct distribution networks.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The Electricity Act 1989 (section 16) states that an electricity distributor must make a connection between the distribution grid and any premises (including providing the electric lines as necessary to enable the connection), when requested by the owner or occupier (or an authorised supplier acting with the consent of the owner or occupier) of such premises.

Both transmission and distribution licences include conditions requiring the licence holders to provide equal access to third parties.

The Electricity (Connection Charges) Regulations 2017 (SI 2017/106) which came into force on 6 April 2017, make provision about the costs of electrical connections, where a person (a 'second comer') obtains a connection to premises or a distribution system that makes use of electric lines or an electrical plant previously provided for the purpose of giving a connection to other premises or another distribution system. In cases where other persons have paid for all or part of the cost of the first connection, these regulations require the relevant electricity distributor to recover an amount from the second comer and to apply that amount, less administrative expenses, to reimburse the persons who paid for the first connection.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Distribution licence holders are required by statute to develop and maintain an efficient, coordinated and economical system of electricity distribution and to facilitate competition in the supply and generation of electricity. See question 11. The government policy in relation to the transmission network described in response to that question applies also to the distribution network.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The current price control framework for DNOs as set up by Ofgem is RIIO-ED1. This is based on the RIIO price control model and limits the revenues DNOs can collect until 31 March 2023. The new RIIO-2 price-control framework, as it applies to electricity distribution networks, will replace the current set of price controls for electricity distribution networks when it expires on 31 March 2023.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Ofgem is the relevant authority to grant, supply licences to electricity suppliers before they may sell power to consumers. As a condition of the supply licence, the electricity suppliers must also act in accordance with certain other regulations, such as the Balancing and Settlement Code and the Smart Energy Code.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Electricity suppliers set the electricity prices, but the Secretary of State does have the power to impose tariff-related conditions on the electricity suppliers through the supply licences.

Following a referral of the energy market to the Competition and Markets Authority (the CMA) by GEMA, a detailed review of the retail energy market was undertaken. Among other things, the review found that limitations on suppliers' tariffs were preventing competition and recommended that such conditions be removed. The CMA also suggested that electricity suppliers should be made to share details of domestic customers who have been on a default tariff for over three years to create an Ofgem-controlled database so that other suppliers would be able to contact such customers to offer cheaper rates tailored to their individual energy usage. The key area of concern was clearly the apparent overpayment for electricity by the customers on the poorest-value tariffs. On 19 July 2018, the Domestic Gas and Electricity (Tariff Cap) Act 2018 received royal assent, and as further discussed below, this new act puts in place a requirement on the energy regulator, Ofgem, to cap standard variable and default energy tariffs.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Rates for sales of wholesale power are not determined by an entity but rather by the mechanics of supply and demand within the market.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Energy Company Obligation (ECO) is a government energy efficiency scheme in Great Britain to help reduce carbon emissions and tackle fuel poverty. In brief, under ECO, larger energy suppliers fund the installation of energy efficiency measures in British households. Each obligated supplier has an overall target based on its share of the domestic energy market in Britain. The obligated energy suppliers work with installers to introduce certain efficiency measures into your home, such as loft or wall insulation, or heating measures.

The scheme began in April 2013, and over time it has been amended. The latest changes to the scheme occurred in 2017 and apply to measures installed from 1 April 2017.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Ministerial departments

The Department of Energy and Climate Change (DECC), formed in 2008, was the ministerial department responsible for making decisions, setting policy and implementing legislation affecting the electricity sector. The corresponding government ministry in Northern Ireland is the Department of Enterprise, Trade and Investment. Following the EU Referendum held on 23 June 2016, DECC was merged together with the Department for Business and Innovation to create BEIS.

Independent bodies

BEIS works closely with and is supported by other agencies and public bodies, including GEMA and Ofgem.

GEMA's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and the security of the supply of gas and electricity to them.

GEMA is constituted of individuals who are appointed by the Secretary of State for specified terms of not less than five years. GEMA is independent and has very limited stakeholder participation (such as the Secretary of State's ability to remove members on the grounds of misbehaviour, determine the remuneration of members and give guidance).

GEMA delegates its functions to Ofgem and provides Ofgem with strategic direction and oversight. Ofgem is also a non-ministerial government department and an independent National Regulatory Authority recognised by EU Directives. Ofgem states that its principal objective is to protect the interests of existing and future electricity and gas consumers.

23 Scope of authority

What is the scope of each regulator's authority?

GEMA has primary responsibility for regulation of the energy sector. GEMA's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the CA 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008, 2010 and 2011) as well as arising from directly effective European Community legislation.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

See question 23 above with respect to the establishment of GEMA and Ofgem. In addition to those two regulators, the CMA was established in April 2014 under the Enterprise and Regulatory Reform Act 2013 and the Office for Nuclear Regulation was created by the Energy Act 2013 and is responsible for ensuring nuclear safety in the United Kingdom. They are each independent, non-ministerial entities.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

GEMA's decisions may be challenged, in a number of ways, depending on the nature of the relevant decision. By way of example:

- modification of licence provisions: a licence-holder may apply to the CMA in respect of changes to licence conditions;
- GEMA decisions may be challenged by the licence-holder by application to the High Court where the licence-holder believes that GEMA did not have the authority to make such decision or that the relevant procedure was not followed; and
- GEMA penalties may be challenged by the licence-holder by application to the High Court within the relevant timeframes.

In addition to the above, the decisions of regulators or local authorities are subject to challenge by way of judicial review.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

CMA and Ofgem

In April 2014 the CMA became the United Kingdom's lead competition and consumer body. The CMA brought together the existing competition and certain consumer protection functions of the Office of Fair Trading and the responsibilities of the Competition Commission (Enterprise and Regulatory Reform Act 2013). The CMA investigates merger cases in the United Kingdom that do not have a community dimension. If it deems necessary, the CMA has the authority to agree voluntary measures to mitigate any anticompetitive effects. Under section 54 of the CA 1998, regulators such as Ofgem have concurrent powers in relation to certain anticompetitive practices.

European Commission

Under Regulation 139/2004 on the control of concentrations between undertakings (OJ 2004 L24/1) (Merger Regulation), the European Commission (the Commission) has the authority to review mergers in

Update and trends

The UK government's commitments under the Paris Climate Agreement, together with its obligations under the 2009 Renewable Energy Directive, coupled in turn with the political and legislative uncertainty resulting from the United Kingdom's referendum vote to exit the European Union, are likely to be hot topics in electricity regulation in the United Kingdom.

the electricity sector with a 'community dimension'. A concentration has a 'community dimension' if it meets one of the two sets of thresholds related to turnover of the undertakings contained in the Merger Regulation. Where there is a community dimension, the European Commission has exclusive jurisdiction to investigate, pulling the relevant merger out of the scope of jurisdiction of domestic bodies and legislation. This is of course subject to change following the outcome of the Brexit negotiations.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

European Commission

As noted above, the European Commission has jurisdiction over concentrations with a community dimension, thus these must be notified to the Commission before their implementation. The Commission has 25 working days from its notification to complete its initial review. If the European Commission receives a request from a member state for the proposed merger to be referred back to the national competition authority, this period may increase to 35 working days. As a result of this initial investigation, the Commission may:

- find that it does not have jurisdiction, in which case consideration would be given by the relevant parties as to whether the CMA should be notified;
- permit the proposed merger, with or without additional conditions; or
- start an in-depth investigation if it considers that the proposed merger raises serious doubts as to its compatibility with the internal market ('Phase II Investigation').

If the Commission begins a Phase II Investigation, it must make a decision within 90 working days of the date on which such investigations started. The period is automatically increased to 105 working days if the undertakings concerned offer commitments to ensure that the merger will not obstruct competition, unless the parties offer such commitments within 55 working days from the start of the Phase II Investigation. As a result of the investigation, the Commission may permit the merger (with or without additional conditions) or state that it is not compatible.

CMA

There is no obligation to notify the CMA; however, the CMA does have the power to initiate its own review without notification if it deems that there is a 'relevant merger situation'.

If the CMA is notified or decides to initiate its own investigation, it has 40 working days to conduct Phase I merger investigations. The 40-working-day period may be extended in certain conditions.

The CMA may commence a further Phase II merger investigation if it believes that there is a relevant merger situation that has resulted in or may be expected to result in a substantial lessening of competition within any UK market. Such investigation usually takes up to 24 weeks and may be extended by up to eight weeks in certain cases. If the CMA decides that the proposed merger would lead to a substantial lessening of competition, it may impose remedies that must be implemented within 12 weeks. The deadline for implementation of remedies may be extended once by up to six weeks if there are special reasons.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The CMA, deriving its power from the CA 1998 has the power to investigate and prosecute anticompetitive behaviour.

Currently, EU law also has application in the United Kingdom, therefore the European Commission has the authority to enforce articles 101 and 102 of the Treaty on the Functioning of the European Union.

Under the CA 1998 (the CA), the courts and the CMA are required to ensure that competition issues arising within the United Kingdom are dealt with in a manner consistent with the treatment of corresponding competition issues arising within the European Union, and in line with this principle the CMA can also enforce the relevant articles of the Treaty on the Functioning of the European Union (the TFEU). As highlighted throughout this chapter, the relationship between the United Kingdom and the EU remains in a state of flux and we expect that the application of competition law will also be part of the legislative overhaul expected to take place as part of the Brexit process.

The Energy Act 2010, also authorises the Secretary of State to modify licence conditions to limit or eliminate circumstances in which a licence holder may gain excessive benefit from electricity generation.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

As mentioned above, the relevant EU legislation is set out in articles 101 and 102 of the TFEU and the CA 1998 sets out the applicable prohibitions in UK legislation. The provisions of the CA 1998 closely follow those of the TFEU. The relevant provisions of the CA 1998 include:

- a prohibition on agreements between entities that are intended to or that have the effect of preventing, restricting or distorting competition within the United Kingdom (Chapter I Prohibition) and may affect trade within the United Kingdom. There are limited exemptions, for example if the agreements provide benefits such as improving production or distribution or promoting technical or economic progress, but even where the agreements fulfil such criteria there are additional applicable conditions in order for the exemption to apply;
- a recognition of article 101 of the TFEU by stating that where an agreement is exempt under that article then it will also be exempt from the Chapter I Prohibition; and
- a prohibition on conduct that results in an abuse of a dominant position in a market if it may affect trade within the United Kingdom (Chapter II Prohibition).

Similarly to the Chapter II Prohibition, article 102 of the TFEU prohibits abuse of dominant position, but in this case it is as applied to trade between EU member states.

There is a presumption of dominant position if an undertaking has over 50 per cent of the market share; however, this is a simplification and in order to determine whether an undertaking has the dominant position, the geographical market, the product and other factors are taken into consideration, so it is possible that an undertaking with a market share falling under 50 per cent could be found to be dominant.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

Under UK law, the CMA can apply to court to have a director of a company that is in breach of UK or EU competition law disqualified for up to 15 years. The Enterprise Act 2002 provides that persons involved in cartels may face criminal liability.

Under EU legislation, the Commission may take action if there is a breach of competition rules. This can be by way of fines (eg, up to 10 per cent of the entity's worldwide group turnover), by the ordering of cessation or modification of operation of the relevant anticompetitive practice or other remedies appropriate to the breach in question.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no particular restrictions on foreign investment into UK energy projects. However, Ofgem, currently together with the European Commission (subject to any Brexit-related developments), additionally undertakes an assessment as to whether the foreign ownership or control of a power project poses a security of supply risk (Electricity and Gas (Internal Markets) Regulations 2011).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Construction

The authorisations required for the construction of interconnectors vary depending on whether the relevant works are onshore or offshore. For onshore works planning permission under the Town and Country Planning Act 1990 is required. The process for offshore developments is a little more complex – a licence must be obtained from the Marine Management Organisation, and where relevant, harbour authority consents and consents for other submarine infrastructure must also be obtained.

Operation

A licence from GEMA is required before operating interconnectors.

Where major infrastructure projects involving the cooperation of at least two EU states are concerned, the Trans-European Energy Networks Regulation (EU 347/2013) sets out guidelines for the co-ordinated granting of required approvals.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

An interconnector licensee may not hold a generation licence, transmission licence, distribution licence or a supply licence.

The current EU and UK system sets out two general routes for interconnector investment:

- a regulated route under the 'cap and floor' regime: through the cap and floor approach developers identify, propose and build interconnectors and there is a cap and floor mechanism to regulate how much money a developer can earn once in operation. If applying for a cap and floor regime, developers have to comply with all aspects of European legislation on cross border electricity infrastructure; or
- alternatively, developers can seek exemptions from regulatory requirements. Under this route developers would face the full upside and downside of the investment and would usually apply for an exemption from certain aspects of European legislation in order to increase the safeguards for the business case of their investment. Ofgem will consider each request for exemption on a case-by-case basis and may attach certain conditions to the interconnector licence.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The Electricity Act 1989 prohibits a licenced entity and those entities with which it is in common ownership with, from carrying out other licenced activities, this in effect sets out a separation of activities.

In addition to the above, the relevant licences may also impose conditions on the individual licensees.

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1 Policy and law

What is the government policy and legislative framework for the electricity sector?

No single government body sets government policy for the electricity sector. The federal government, which regulates wholesale markets, follows a generally pro-competitive policy. The competition reforms that transformed the US electricity sector represent the latest chapter in three decades of restructuring, deregulation, and regulatory reforms that affected utility sectors of the economy historically subject to price regulation. Retail sales are regulated by the states. Several states have adopted choice programmes intended to introduce competition among retail suppliers of electricity. While some states have delayed or suspended retail choice plans amid concerns that deregulation may not benefit end-use consumers, retail choice is thriving in other states, such as New York.

US Congress
The Energy Policy Act of 2005 (EPAct 2005) represents the most significant change in US energy policy since the Federal Power Act of 1935 (FPA) and the Natural Gas Act of 1938 (NGA). EPAct 2005 granted the Federal Energy Regulatory Commission (FERC) the authority to issue rules to: prevent market manipulation in wholesale power and gas markets, and in electric transmission and gas transportation services; assess enhanced civil penalties for violations of the FPA and other energy statutes; oversee mandatory reliability standards governing the nation's electricity grid; and approve the siting of transmission facilities, traditionally a matter of state or local jurisdiction, under certain limited circumstances.

Federal administrative agencies
Federal administrative agencies are tasked with implementing energy legislation passed by the US Congress. The mission of the US Department of Energy (DoE) is to 'ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions' (www.energy.gov/mission). FERC, an independent regulatory agency within the DoE, is the principal economic and policy regulator at the federal level for the electric power industry. FERC is charged with implementing, administering and enforcing most of the provisions of EPAct 2005, FPA, NGA and other statutes regulating the electric utility industry.

States
Beginning in the 1990s, a number of states undertook measures to require or encourage vertically integrated utilities to disaggregate into separate generation, transmission or distribution entities. Also, participation in independent system operators (ISOs) or regional transmission organisations (RTOs) was encouraged at the federal level and in some states. The American Public Power Association's (APPA) most current data indicates that 16 states and the District of Columbia have active retail choice programmes in the electric sector (APPA, Retail Electric Rates in Deregulated and Regulated States: 2017 update, https://www.publicpower.org/system/files/documents/Retail-Electric-Rates-in-Deregulated-States-2017-Update%20%28003%29.pdf).

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

According to the most recent data compiled by the APPA, the US electric industry is composed of 3,304 electricity providers, including 2,012 publicly owned utilities, 876 cooperatives, 187 investor-owned utilities, 218 power marketers, and nine federal utilities (APPA, 2018 Annual Directory and Statistical Report). Together, those utilities combine to serve over 150 million customers, with investor-owned utilities serving the largest share at approximately 68 per cent of the total customers.

The private sector includes traditional utilities that are vertically integrated, generation-owning companies and power marketers, and transmission or distribution 'wires-only' companies. These companies may be privately owned or publicly traded. The public sector includes municipally owned utilities, public power districts, state agencies, irrigation districts and other government organisations, and at the federal level, the Tennessee Valley Authority (TVA) and federal power marketing administrations. Rural electric cooperatives, formed by residents, operate in 47 states and comprise about 13 per cent of total US kilowatt-hour sales and revenue (https://www.electric.coop/wp-content/uploads/2018/03/NCS-2815_Co-op-Facts-and-Figures-Packet_Individual-Letter-Sheets.pdf).

Generation
According to the Energy Information Administration's (EIA, part of DoE) most recent statistics, net generation of electric power remains roughly the same in 2017, at 4,076,675kWh, as compared to 4,077,601kWh in 2015, and as of May 2018, net generation of electric power has increased approximately 5.4 per cent from May 2017 levels (www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_1_1).

The primary energy sources for generating electric power in the United States are fossil fuels such as coal and natural gas, with limited use of oil. Fossil fuels accounted for approximately 53 per cent of energy consumption in the United States in 2017. The predominant fuel source is now natural gas (supplanting coal), accounting for 31.7 per cent of total net generation in 2017. Domestic production of crude oil and natural gas has been facilitated by ongoing improvements in extraction technologies and resultant low prices. Crude oil production has increased sharply since 2008. In 2017, the US produced 9.4 million barrels per day, a number that approaching the record high (set in 1970) of 9.6 million barrels per day. Based on current production levels, the United States is projected to set the record in 2018 at approximately 10.7 million barrels per day, and surpass that mark in 2019 (at approximately 11.7 million barrels per day). EIA, however, predicts that domestic crude oil production will soon level off and eventually decline after 2020. Development of natural gas resources has also steadily grown, with a predicted 49 per cent increase in production between 2016 and 2040 (http://www.eia.gov/beta/aeo/#/?id=13-AEO2018). Generation from renewable energy sources including hydroelectric continues to rise, accounting for over 15 per cent of total US net generation in 2016. In fact, both utility-scale solar and wind achieved record shares of the domestic generation pool (https://www.eia.gov/todayinenergy/detail.php?id=35412).

EIA has predicted that total US electricity consumption will increase at an average annual rate of 0.9 per cent in the next two

decades, but that energy intensity (measured as energy use per person and per dollar of GDP) will actually decline (www.eia.gov/forecasts/aeo/sector_energydemand_all.cfm#declines). This forecast is based on the assumption that the US population will increase by 0.9 per cent per year and the GDP will increase at an average annual rate of 2.5 per cent per year. The projected decline in energy use per capita reflects anticipated gains in energy efficiency of appliances and vehicles, an economic shift away from energy intensive manufacturing, and the retirement of less efficient generators.

Power sales

Power marketers do not generate, transmit or distribute electricity, but are classified as public utilities under the FPA because they sell electricity at wholesale. In addition to the numerous privately owned power marketers, there are four federally owned power marketing administrations that market and sell the power produced at federal hydroelectric and nuclear plants. The APPA EIA reported in June 2018 that sales of energy to ultimate consumers by power marketers equal 21 per cent of total sales , representing a 10 per cent increase from 2005 (https://www.eia.gov/todayinenergy/detail.php?id=36415).

Transmission

The US bulk power transmission system is composed of facilities that are privately, publicly, federally or cooperatively owned that form all or parts of three electric networks (power grids): the Eastern Interconnection that stretches from central Canada to the Atlantic coast (excluding Quebec), south to Florida and west to the Rockies (excluding much of Texas); the Western Interconnection that stretches from western Canada south to Mexico and east over the Rockies to the Great Plains; and the Electric Reliability Council of Texas (ERCOT) that serves a large portion of Texas.

Historically, transmission lines owned by private-sector companies were part of a vertically integrated utility. In 1996, FERC issued Order No. 888, requiring each public utility subject to FERC's jurisdiction to:

- file an open-access transmission tariff (OATT) declaring the terms and conditions for using its transmission system; and
- functionally unbundle its services.

FERC has encouraged the development of ISOs and RTOs as independent transmission providers within a region. These entities are formed by utilities that transfer operational control – but not ownership – of their transmission assets to the ISO or RTO, which is then responsible for operating the regional transmission grid and administering wholesale markets. Today, two-thirds of electricity consumers in the US are served within markets administered by seven ISOs or RTOs: the PJM Interconnection, the Midcontinent ISO, the Southwest Power Pool, the New York ISO, ISO New England, ERCOT and the California ISO. In addition, on 1 November 2014, the California ISO and PacifiCorp launched the Energy Imbalance Market (EIM), which is a real-time energy balancing authority with the overall goal of dispatching least-cost energy on a real-time basis across the EIM market. The California ISO EIM continues to expand, as Las Vegas-based NV Energy began participating in October 2015, utilities in Washington and Arizona recently began participating in October 2016, and Idaho Power began participating in the EIM market in April 2018. Moreover, several other western utilities have expressed interest in joining the EIM, including the Los Angeles Department of Water and Power – the largest municipal utility in the United States, serving approximately 4 million customers – recently announcing plans to enter into the EIM as soon as 2019.

One of the responsibilities of ISOs and RTOs, as well as other transmission providers, is to maintain the operation of the grid. Pursuant to EPAct 2005, FERC certified the North American Electric Reliability Corporation (NERC) as the nation's Electric Reliability Organisation (ERO) to develop and enforce mandatory reliability requirements to address medium- and long-term reliability concerns, subject to FERC oversight and enforcement. Today, enforcement of electric reliability standards, including the protection of critical energy infrastructure, is a major focus of the ERO and of FERC, which may impose penalties of up to US$1 million a day on transmission or generation owners and operators and certain other regulated entities for a violation of mandatory reliability standards. See question 12 for further discussion on reliability.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The siting and construction of electric generation, transmission and distribution facilities has historically been a state and local process, although EPAct 2005 altered this traditional arrangement by vesting limited transmission siting authority with FERC in certain cases. In making siting decisions, state public utility commissions (PUCs) consider environmental, public health and economic factors. The PUCs exercise their authority in conjunction with state environmental agencies or local zoning boards. A few states have a siting board or commission that provides a single forum where an electric utility or independent developer can obtain all necessary authorisations to construct electric facilities. Other states have not consolidated the siting process, and electric utilities or independent developers in those states are required to obtain the necessary permits separately from each of the relevant state and local agencies. State and local permits required for the construction of electric generation facilities include air permits and water use or discharge permits from the state environmental commission, and zoning and building permits from local commissions.

Regulated utilities are required to obtain a certificate of public convenience and necessity from the relevant PUC for the construction of generation, transmission and distribution facilities that will be subject to cost-base rate regulation. Except in limited circumstances where the relevant state commission refuses to act on an application for a year, or does not have jurisdiction to act (as in the case of certain federally designated National Transmission Corridors), no federal certificate of public convenience or necessity is available from FERC for the siting and construction of electric generation, transmission or distribution facilities under part II of the FPA.

A FERC licence must be obtained under part I of the FPA for the construction of hydroelectric facilities on navigable waters. Construction affecting federal lands may also require authorisation from agencies such as the Bureau of Land Management, the US Forest Service or the National Park Service. The US Army Corps of Engineers reviews projects affecting wetlands or navigable waters. Nuclear facilities must be licensed by the US Nuclear Regulatory Commission (NRC). The Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement within the Department of the Interior are responsible for offshore oil and gas lease sales and offshore renewable energy development.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

FERC-jurisdictional transmission providers are required to provide interconnection service under the terms of an OATT. Generators have the right to request interconnection services separately from transmission services.

In response to complaints by generators that interconnection procedures were being used by some transmission providers in a discriminatory manner, FERC implemented rules to standardise agreements and procedures for generators and required FERC-jurisdictional transmission providers to interconnect generators to the grid in a non-discriminatory manner. Under the standard interconnection procedures, generators are required to pay the full cost of any interconnection facilities up front (from the generator to the point of interconnection) and network transmission facilities (beyond the point of interconnection) necessary to connect the generator with the transmission grid. The generator is reimbursed for the cost of any network transmission facilities through credits for future transmission service on the grid. ISOs and RTOs have the flexibility to propose changes to the standard interconnection agreement and procedures, as well as to the procedures for recovering interconnection costs. For example, ISOs and RTOs may seek authorisation to allocate the costs of network upgrades to the generator requesting the upgrades (in exchange for granting capacity rights on the transmission system). FERC does not regulate local distribution facilities, but has authority to regulate the rates, terms and conditions of any wholesale sales transaction using such a facility. See question 11 for further discussion.

To encourage development of new generation, FERC issued Order No. 807, easing the requirement for certain generator owners and operators to have an OATT on file with FERC for public utilities who are subject to those regulations solely because they own or operate Interconnection Customer Interconnection Facilities (ICIF), namely those that own generator tie lines. Previously, an ICIF owner must have either had on file an OATT or received a case-by-case waiver of the OATT requirement, and also was obligated to provide interconnection service to other generators that sought to interconnect to the grid using its ICIF. To ease the regulatory burden on new generation developers, the new rule grants a blanket waiver of all OATT and other open access requirements to any public utility that is subject to those requirements solely because it owns, controls, or operates an ICIF, including entities that do not sell electricity. In addition, the rule provides a 'safe harbour' period for five years in which there would be a rebuttable presumption that the ICIF owner has definitive plans to use its capacity and therefore are not required to provide interconnection service to other generators seeking to interconnect generation in the same location during the safe harbour period.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes. Legislation passed and signed into law by the president in 2009, the American Recovery and Reinvestment Act of 2009 (Recovery Act), contains provisions for direct spending, tax credits and loan guarantee programmes designed to promote development of renewable energy projects. The Recovery Act extended the production tax credit (PTC) on renewable energy systems, while also offering expansions on and alternatives for PTCs (http://energy.gov/savings/renewable-electricity-production-tax-credit-ptc). The US Congress continued the PTC in the Bipartisan Budget Act of 2018 despite speculation that Congress was considering reducing or eliminating it. The PTC is available for most renewable energy systems for facilities that have commenced construction before 1 January 2018. In December 2015, the relevant laws were amended to further extend the PTC for wind facilities to include those for which construction begins before 1 January 2020, but this extension was accompanied by a phase-out of the PTC for wind facilities over a four-year period. Where construction of a wind facility begins prior to 1 January 2017, the full PTC is available. For wind facilities where construction is commenced after 2016 and before 2020, the PTC available is reduced by 20 per cent for facilities with construction beginning in 2017, by 40 per cent where construction is commenced in 2018, and by 60 per cent for facilities begun in 2019.

Solar facilities are eligible for an investment tax credit (ITC) in which, as an alternative to the PTC, a project developer may elect a grant equal to a percentage of the facility's tax basis, so long as the facility is depreciable and amortisable and placed into service before 1 January 2022. The ITC applies in the year in which the qualifying property is placed in service and is a credit equal to a percentage of the taxpayer's tax basis in certain qualifying investments. For solar facilities placed in service by 2020, the credit is 26 per cent, and 22 per cent for facilities placed in service by 2021. A solar facility for which construction commences before 1 January 2022 but which is placed in service after 31 December 2021 is eligible for only a 10 per cent ITC.

The DoE Office of Energy Efficiency and Renewable Energy (EERE) is the focal point for several alternative energy programmes, including the biomass programme, the geothermal technologies programme, the solar energies technologies programme, the hydrogen, fuel cells and infrastructure technologies programme, and the wind and hydropower technologies programme (www.eere.energy.gov). The EERE provides a variety of forms of financial assistance for the research and development of renewable energy, including grants, laboratory subcontracts, and cooperative research and development agreements (www1.eere.energy.gov/financing/types_assistance.html). Moreover, as of August 2018, 29 states plus the District of Columbia and three US Territories have adopted renewable portfolio standards that require electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date (http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx), and eight others (and one US territory) have set voluntary goals for adopting renewable energy resources (http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2014/11/Renewable-Portfolio-Standards.pdf). As of March 2015, 20 of these states include combined heat and power (CHP) and/or waste heat recovery as an eligible resource (https://www.epa.gov/sites/production/files/2015-07/documents/portfolio_standards_and_the_promotion_of_combined_heat_and_power.pdf).

Cogeneration and small power production purchase and sale requirements

EPAct 2005 amended the mandatory purchase and sale requirements of the Public Utility Regulatory Policies Act (PURPA). Historically, electric utilities were obligated to purchase or sell electric energy from or to a facility that is an existing qualifying cogeneration or small power production facility (QF). However, if the QF is selling in a market that meets certain criteria established by FERC, that purchase obligation may be terminated. In 2006 FERC issued Order No. 688, which permits the termination of the requirement that an electric utility enter into new contracts to sell energy to or purchase energy from a QF after the electric utility files for such relief from FERC, and FERC makes appropriate findings. Several utilities have successfully pursued relief under Order No. 688. These changes do not affect pre-existing contracts or obligations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Federal and state climate change policies promoting carbon-free energy sources are more likely to have an impact on the types of resource used to meet US electricity demand in the medium- or long-term time frame than in the short term. The US electric industry's reliance on fossil fuels (particularly coal) to meet rising energy demands is driven primarily by cost considerations: coal, for many years, has been a cheap and plentiful domestic fuel source. That dynamic is shifting, however, as the influx of low variable-cost renewable projects and the continued development of shale gas resources (and the resultant low natural gas prices) have narrowed the energy cost advantages of coal generation, particularly for older, less efficient coal units. Although recent federal and state legislative initiatives have provided down payments toward the creation of cost-competitive renewable energy technologies, the large-scale deployment of these technologies is still hampered by variability of resources such as wind, the need for additional backbone transmission capacity between regions, and the lack of storage capacity.

Other proposed state and federal legislation (for example, cap-and-trade schemes) and foreign policy initiatives could impose additional costs on electricity generators using carbon-rich fossil fuels. In general, legislative proposals and environmental regulations are likely to impose greater costs on the energy that is consumed. State or federal governments could subsidise renewable energy and carbon mitigation initiatives by surcharges on electricity generation or consumption. Compliance costs incurred by utilities arising from state or international cap-and-trade legislation, federal regulations, or state regulation of vehicular carbon emissions would be passed on through every transaction involving electricity.

The Environmental Protection Agency (EPA) is the chief US agency tasked with issuing regulations under the Clean Air Act (CAA) regarding pollutants and carbon dioxide emissions from power generation sources. For instance, new and existing coal-fired plants may be incentivised or required to have carbon capture and sequestration (CCS) capabilities. In 2011 the EPA issued the Cross-State Air Pollution Rule under the Clean Air Act that requires coal companies in 28 states to reduce emissions of sulphur dioxide and nitrogen dioxide by 73 per cent and 54 per cent, respectively, from 2005 levels by 2014. The rule was controversial, with many in the coal industry claiming that it will be cost-prohibitive to obtain and install the CCS technology necessary to meet the standard. As a result, the coal industry warns that coal generating facilities will be forced to prematurely shut down. In April 2014, the US Supreme Court upheld the EPA rule, affirming EPA's authority to regulate existing power plants for greenhouse gases so long as they are being regulated for other pollutants as well.

The issue of how to properly account for compliance costs of pollution reduction was at the heart of a 2015 US Supreme Court case. There, the US Supreme Court remanded an EPA rule setting limits on mercury and other toxic pollutants from power plants, ruling that the EPA violated the CAA by failing to consider costs when deciding whether to set those emissions limits in the first place, although the EPA did eventually undertake a cost-benefit analysis when subsequently deciding how to regulate. As the EPA continues to issue new regulations related to pollution and climate change, whether and how to account for compliance costs will remain a key issue.

Perhaps the largest and most impactful regulatory initiative pertaining to climate change concerns the regulation of carbon dioxide emission limits from existing power plants. In June 2013, the US president ordered the EPA to create the first ever carbon emissions limit for existing power plants, stating that the United States should lead the world in a 'coordinated assault' on climate change (www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change). In August 2015, pursuant to the president's directive, the EPA promulgated its final regulations under part 111(d) of the CAA, which is known as the Clean Power Plan (CPP). In general, the CPP establishes broad carbon-dioxide emission targets for coal- and natural-gas fired power plants intended to cut CO_2 emissions by 32 per cent by 2030, leaving the states (excluding Vermont, Hawaii, Alaska, and the District of Columbia) to choose from a variety of methods – such as renewable energies, efficiency improvements, or participating in an emission credit trading programme – to develop a plan to meet individual targets.

However, in February 2016, the US Supreme Court stayed implementation of the CPP while court challenges to the plan were pending before the US Court of Appeals for the DC Circuit. Then, in March 2017, President Trump issued an Executive Order requiring the EPA to review the CPP so as to consider whether to 'suspend, revise, or rescind' it. Importantly, however, if the EPA rescinds the CPP, the EPA has not proposed revoking its 2009 'endangerment finding' – a determination that greenhouse gases, including carbon dioxide, are a threat to human health – and as such, the EPA is required to regulate greenhouse gasses pursuant to the statutory directive of the CAA.

As such, and in accordance with the March 2017 Executive Order, in August 2018, the EPA proposed a new rule that would rescind the CPP and instead, replace it with a new set of regulations, known as the Affordable Clean Energy (ACE) rule. The proposed ACE rule establishes guidelines for states to develop plans and programmes regarding greenhouse gas emissions from existing coal-fired power plants. According to EPA, approximately 600 coal-fired electric generating units at 300 facilities in the US would be subject to the proposed ACE rule. The legal framework of the proposed ACE rule includes only existing generation sources and therefore falls under Section 111 of the Clean Air Act. The proposed ACE rule empowers states to craft plans establishing standards of performance for existing sources. Upon evaluation of those submittals, EPA ultimately determines the best system of emission reduction (BSER). EPA is pre-emptively designating a range of candidate technologies that may be used to demonstrate the BSER for coal-fired power plants. In the proposed ACE rule, EPA defines the BSER as a technological solution to improve the heat rate efficiency of individual coal-fired units, a distinction from the broader, portfolio-level mandate of the CPP. Notably, the timelines for states to comply with the ACE rule to develop their plans for EPA and, if necessary, for a federal plan to be implemented if a state plan was not submitted or rejected have all been extended significantly as compared to the CPP. States may now take up to three years to draft and submit their respective plans (versus nine months under the CPP), and EPA would then have up to one year to review and act upon those submittals (versus four months in the CPP). It is expected that any final rule issued by the EPA would immediately be challenged in court. Moreover, with another presidential election looming in 2020, it is possible that a new presidential administration could decide to change course yet again.

Nonetheless, even without the CPP, and even if its successor the ACW rule goes into effect, the development of renewable resources is expected to continue. This is due in large part to state initiatives aimed at incentivising development of renewable resources and technological developments making the use of renewable resources more and more economical. However, it should be noted that the increased integration of renewable resources into the electric grid raises issues around grid reliability. In general, FERC and NERC are tasked with maintaining reliability for the Bulk Electric System. As generating capacity from coal-fired and other traditional baseload resources decreases, it will be important to develop suitable replacement generation and transmission resources that are sufficient to maintain capacity to meet electricity demand, particularly during times of peak usage in order to avoid reliability problems. Moreover, as most renewable generation resources, such as wind and solar sources, are in remote locations, additional transmission infrastructure must be constructed. Energy storage resources may also be needed to ensure reliability, such that sufficient energy can be saved and then deployed during times of peak usage given that generation from variable resources inherently fluctuate.

In addition, a number of utilities have closed or announced plans to shut down certain, mostly older, less efficient, coal power plants. Meanwhile, the US coal reversed course from a four-year trend of declining levels, with exports increasing in 2017 to 97.0 million short tons, which is 61 per cent higher than 2016 (https://www.eia.gov/todayinenergy/detail.php?id=35852). In 2017, exports to markets in Asia more than doubled (particularly owing to steam coal, used for electricity generation), comprising a bulk of the increase from 2016 and the broader downward trend.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Most direct support for development of commercial energy storage resources has occurred at the state level. For instance, California adopted in 2014 a mandate to require utilities to create 1.3GW of energy storage capacity by 2022. Federal legislation has primarily been focused on research and development of innovative storage technologies that are not yet ready for private investment. For instance, in 2007, Congress passed the America COMPETES Act, which established the Advanced Research Projects Agency within the DoE (ARPA-E) to fund research and development of new innovative technologies including storage. In addition, recently, legislation was introduced by several US senators to establish an income tax credit for businesses and home use of energy storage (www.heinrich.senate.gov/press-releases/heinrich-introduces-bipartisan-bill-to-create-tax-credit-for-energy-storage). In the CPP, EPA noted the potential for energy storage to assist with the integration of renewable resources into the grid, but did not include energy storage resources as a way to reach pollution reduction targets.

From a regulatory perspective, FERC, in recent years, has issued several rules that, while not specifically aimed at energy storage resources, accommodate and encourage participation of non-traditional resources, including energy storage resources, in the wholesale energy markets. For instance, in 2011, FERC issued Order No. 755, requiring RTOs and ISOs to implement a 'pay for performance' compensation structure for frequency regulation service. Though not specifically aimed at energy storage resources, the intention of Order No. 755 was to ensure that flexible resources were receiving adequate compensation in the wholesale electric markets. In 2013, FERC issued Order No. 784, requiring all public utility transmission providers to have in their OATT a statement that it will take into account the speed and accuracy of regulation resources, as well as amended its accounting regulations to improve the accounting for and reporting of transactions associated with energy storage resources. Other FERC orders since, such as those concerning small generator interconnection policies and frequency response, also are intended to ensure RTO and ISO rules do not discriminate against newer technologies. Most recently, in April 2016, FERC commenced an informational proceeding to examine 'whether barriers exist to the participation of electric storage resources in the capacity, energy, and ancillary service markets potentially leading to unjust and unreasonable wholesale rates' (www.ferc.gov/industries/electric/indus-act/rto/A-4-Presentation.pdf). In some RTO and ISO markets, steps have been taken to revise market rules to improve the ability of storage resources to participate; for example, recently FERC approved changes to the California Independent System Operator Inc. (CAISO) tariff to allow market participants to submit state of charge as a bidding parameter, allowing storage providers flexibility in their offers. However, in an order issued in February 2017, FERC affirmed that market rules in MISO do not accommodate the unique physical and operational characteristics of energy storage resources. Other RTO and ISO markets, namely PJM and ISO New

England, have identified disparities in the barriers to entry for storage resources (eg, penalties that are disproportionate to those for traditional resources owing to technological characteristics).

Recently, regulators at both the state and the federal level have undertaken efforts to reduce regulatory barriers in order to facilitate the integration of energy storage into the grid. Most notably, in February 2018, FERC issued Order No. 841, a landmark order that will pave the way for integrating energy storage systems in US wholesale energy markets. Previously, existing market rules did not align well with the operational aspects of energy storage systems, as the rules were created with traditional baseload resources in mind. Order No. 841 seeks to remedy this and directs each of the RTOs and ISOs under FERC's jurisdiction to revise their tariffs to establish a participation model for energy storage resources that properly recognise their physical and operational characteristics. At the state level, regulators continue to issue regulations and craft policies focused on accommodating battery storage as well. For instance, in California, grid operators recently created a new product that is intended to value the capabilities of storage that is paired with solar or wind generation. And in Maryland, the state government recently created a new tax incentive programme aimed at residential and commercial customers who install qualified energy storage systems, the first of its kind in the United States. These efforts are expected to continue, with at least five states discussing or implementing legislation that would create similar tax incentive programmes.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Historically, government policy has encouraged the development of new nuclear power plants. In 2010 the DoE launched a nuclear power programme in an attempt to jump-start the proposed construction of new nuclear plants by co-funding with the nuclear industry efforts to evaluate and bring new technologies to market. This included utilising a new NRC licensing process intended to streamline NRC approval of such projects. The DoE also put in place a Generation IV Nuclear Energy Systems initiative, which aims to develop new plant designs that minimise waste and are safer and more proliferation-resistant than today's nuclear plant designs (www.nuclear.energy.gov/genIV/neGenIV1.html). EPAct 2005 also encouraged the construction of new nuclear plants by establishing a production tax credit. Under that plan, operators of the first 6,000MW of capacity from new nuclear power plants that are placed in service before 2021 will receive a production tax credit of 1.8 cents per kWh during the first eight years of the plant's operation.

The US DoE Loan Guarantee Program was designed to promote development of the nuclear power industry through loan guarantees for the construction of new nuclear power plants in the United States. These loan guarantees help developers of new nuclear plants in the United States to obtain favourable financing terms, which is of critical importance when constructing plants with a projected price tag in the range of US$7 to US$10 billion per unit. Indeed, many companies that are considering building new plants have publicly stated that, absent a federal loan guarantee, they will not be able to finance and build their proposed projects. Seventeen companies building 21 nuclear units have applied for the guarantees. To date, a conditional loan guarantee of US$8.33 billion has been granted to the developers of two nuclear units in Georgia. The DoE's Loan Guarantee Program also has earmarked an additional US$4 billion for the construction of new uranium enrichment facilities in the United States. Access to additional supplies of enriched uranium fuel will be critical to support the development of new nuclear plants in the United States. In May 2010, the DoE announced that it would grant a conditional loan guarantee of US$2 billion for the construction of a uranium enrichment plant in Idaho. In December 2014, the DoE Loan Guarantee Program issued a solicitation for an additional US$12.5 billion in available loan guarantees to support the construction of new large or small nuclear reactors, or provide upgrades to existing facilities, including US$2 billion set aside for uranium conversion or enrichment projects.

Since the Fukushima nuclear reactor crisis in March 2011, however, development of nuclear power plants in the United States has slowed, particularly with respect to licensing of new power plants or the relicensing of existing plants. Following an August 2012 decision by the US Court of Appeals for the DC Circuit ruling that the NRC did not sufficiently examine proper storage of nuclear waste in its regulations, the NRC suspended new licensing and licensing renewal for nuclear plants until a full reassessment of nuclear waste storage was completed. In September 2014, the NRC issued its new rule and resumed licensing decisions. The NRC's new rule was upheld in a June 2016 decision by the US Court of Appeals for the DC Circuit. Additionally, in August 2013, the US Court of Appeals for the DC Circuit ordered the NRC to make a key decision regarding a proposed nuclear waste disposal site in Yucca Valley, NV, stating that the NRC did not have the legal authority to continue to delay making a decision regarding the licencing of the project (www.cnn.com/2013/08/13/us/nevada-yucca-mountain-order). That process remains ongoing, with DoE and NRC working to develop an Environmental Impact Statement. In August 2017, the NRC voted 2–1 to proceed with the 'information-gathering stage' of Yucca Mountain, enabling DoE to move forward on the licensing process. Whether and when this site becomes operational impacts the licensing and relicensing of nuclear power plants, as those decisions may require a permanent storage and disposal site for nuclear waste.

A new hurdle facing nuclear power is the relative low price of other energy resources, such as natural gas and subsidisation of renewable resources, which combine to reduce the economic viability of nuclear generation. In May 2014, for example, several nuclear power facilities failed to be selected to sell energy into a capacity market run by PJM Interconnection, Inc (PJM) because the price offered in the capacity market was insufficient to cover the costs of the nuclear facilities. As a result, the nuclear facilities must either cease production or find private purchasers and some utilities have announced that they will close certain nuclear plants. For instance, Exelon Corporation, operator of the largest nuclear fleet in the United States, announced it was permanently closing two facilities in Illinois, citing the fact that the facilities had lost $800 million over the last seven years (www.nytimes.com/2016/06/03/business/exelon-to-close-2-nuclear-plants-in-illinois.html?_r=0). It remains to be seen, however, whether changes to capacity auctions that seek to reward high-performing generating units, such as those planned for the PJM and ISO New England markets, will benefit nuclear power generators.

In July 2016, New York adopted a proposal that would allow nuclear facilities in the state to earn Zero Emission Credits (ZECs) as part of New York's renewable energy standard. The ZECs would be calculated using a formula that uses the expected power costs in the region and the federal government's calculation of the social price on carbon used by federal agencies use in rulemaking. Utilities in the state would then be required to purchase a pro rata share of ZECs, thus providing a value for the emissions-free energy produced by nuclear facilities. The result of this proposal was immediate – a New York nuclear facility that had been slated to close was purchased by a buyer that agreed to keep the facility open. Illinois passed legislation providing for similar credits in 2016. To date, legal challenges to the credits have failed and several additional states, including Ohio, Pennsylvania, New Jersey, and Connecticut, are considering similar initiatives.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction

Construction of transmission facilities is primarily a state-regulated function, but federal authorities have jurisdiction over siting on federal lands, and multi-state projects may require the authorisation of several states. Historically, this fragmented system for siting new power lines, in addition to other factors such as regulatory uncertainty on the state and federal levels associated with transmission cost recovery, has been a significant barrier to the development of new transmission in the United States. EPAct 2005 provides tools to facilitate new construction and improvements to the existing transmission infrastructure.

EPAct 2005 directed the DoE to conduct a nationwide study of electric transmission congestion and identify areas in which transmission capacity constraints or congestion adversely affects consumers and designate such areas as national interest electric transmission

corridors (NIETCs). The most recent draft nationwide electric transmission congestion study was published in August, 2014, but it did not propose nor designate any new NIETCs. EPAct 2005 gave FERC supplemental permitting authority to ensure timely construction of transmission facilities to remedy transmission congestion in those corridors. The DoE initially designated two such corridors in 2007, but the US Court of Appeals for the Ninth Circuit vacated and remanded the designations to the DoE for further proceedings in February 2011 (www.ca9.uscourts.gov/datastore/opinions/2011/02/01/08-71074.pdf). DoE announced that it will collaborate with FERC to prepare drafts of transmission congestion studies and environmental analyses for proposed NIETCs in the future (energy.gov/articles/doe-and-ferc-joint-public-statement-back-stop-siting). In addition, the US Court of Appeals for the Fourth Circuit limited FERC's supplemental backstop siting authority, ruling that it applied only in situations where a state refuses to act on a permit application or imposes uneconomic conditions, but determined FERC lacked the authority to overrule a state denial of a permit application. Thus, a state may be able to circumvent FERC backstop siting authority by properly denying an application (www.ferc.gov/legal/court-cases/opinions/2009/07_1651.P_opinion.pdf).

EPAct 2005 also provides a mechanism for the private use of the eminent domain power of the US government, where necessary, to obtain property for transmission infrastructure projects. In addition, EPAct 2005 requires that the federal government identify rights of way across federal lands that can be made available for siting electric transmission.

On 21 July 2011, FERC issued Order No. 1000, a final rule on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities (www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf). The goal of Order No. 1000 is to ensure more reliable transmission service at just and reasonable rates. Order No. 1000 lays out certain requirements for coordinating transmission planning and allocating transmission costs so that transmission planners seek the most efficient and cost-effective way to meet needs in their respective regions and between regions. The implementation of Order No. 1000 is left largely to public utility transmission planners, which were directed to submit compliance filings in October 2012. The process of review, clarification, and refiling is largely still underway for most transmission planners and as a result, the impact of the order is still evolving. In 2016, FERC convened a technical conference to assess the progress of implementing Order No. 1000.

Operation

FERC issued a series of orders, beginning with Order No. 890, which were intended to eliminate the broad discretion that transmission providers had in calculating available transfer capacity (ATC), increasing non-discriminatory access to the grid and ensuring that customers are treated fairly in seeking alternative power supplies. Since Order No. 890-A, transmission providers have implemented new service options for long-term firm point-to-point customers and adopted modifications to other services. Instead of denying a long-term request for point-to-point service because as little as one hour of service is unavailable in the course of a year, transmission providers are now required to consider their ability to offer a modified form of planning redispatch or a new conditional firm option to accommodate the request. This increases opportunities to utilise transmission efficiently by eliminating artificial barriers to the use of the grid. This standardisation reduces the potential for undue discrimination, increases transparency, and reduces confusion in the industry that resulted from the prior lack of consistency.

Also, FERC regulations require the posting of ATC values associated with a particular path, not available flowgate capacity values associated with a flowgate. With respect to energy and generation imbalance charges, a transmission provider must post the availability of generator imbalance service and seek imbalance service from other sources in a manner that is reasonable in light of the transmission provider's operations and the needs of its imbalance customers. FERC also limited rollover rights to contracts with a minimum term of five years. In Order No. 890-B, FERC reiterated that a power purchase agreement must meet all of the requirements for designation as a network resource in order to be designated by the network customer or transmission provider's merchant functions.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

See questions 3 and 11.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Pursuant to EPAct 2005, FERC has established incentive-based rate treatments to encourage investment in and expansion of the US's aging transmission infrastructure. FERC Order No. 679, issued in 2006, includes a number of key provisions to promote transmission investment, including:

- incentive rates of return on equity for new investment by public utilities (both traditional utilities and stand-alone transmission companies);
- a higher rate of return on equity for utilities that join or continue to be members of transmission organisations (for example, RTOs and ISOs); and
- various advantageous accounting methods, including:
  - full recovery of prudently incurred construction work in progress, pre-operation costs, and costs of abandoned facilities;
  - use of hypothetical capital structures for ratemaking purposes;
  - accumulated deferred income taxes for stand-alone transmission companies;
  - adjustments to book value for stand-alone transmission company sales or purchases;
  - accelerated depreciation; and
  - deferred cost recovery for utilities with retail rate freezes.

In Order No. 679 and Order No. 679-A, FERC extended incentive rate treatments to all utilities joining ISOs or RTOs, irrespective of the date they join. However, this incentive does not apply to the transmission rate base that has already been built, as the incentive's purpose is to attract new investment in transmission.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

FERC has jurisdiction over unbundled transmission services (including transmission services provided over low-voltage facilities) provided by public utilities to wholesale customers or to retail customers with direct access. The states have jurisdiction over bundled retail service (namely, a combined generation and delivery product sold to retail customers) where direct access is not available. Court decisions and the interconnectivity of the transmission grid in the continental United States have led to an expansive view of what constitutes transmission service in interstate commerce in all areas of the United States except Alaska, Hawaii and ERCOT. The FPA, however, reserves to the states jurisdiction over the local distribution of electricity.

FERC-jurisdictional utilities offering transmission services must do so under FERC-approved tariffs. Order No. 888 required jurisdictional electric utilities to submit pro forma OATTs that functionally unbundled transmission operations and services, and set forth rates for transmission and ancillary services. In 2007, FERC issued Order No. 890, which modified the pro forma OATT to better remedy undue discrimination by, among other things, providing greater transparency and consistency in the calculation of available transmission capacity, and requiring coordinated open transmission planning between regions.

Transmission providers are also required to maintain an open-access, same-time information system (OASIS) to publish information with respect to their transmission systems, including services, rates, and available transmission capacity as well as business rules, practices, and standards that relate to transmission services provided under the pro forma OATT.

Finally, the FPA empowers FERC to review rates and terms of transmission services to ensure that they are just and reasonable and not unduly discriminatory or preferential. Generally, tariffs and contracts for transmission services must be filed with FERC before service

commences to allow an opportunity for Commission review, as well as public notice and comment. Because transmission services are a natural monopoly, Order No. 888 envisions that FERC will determine whether a particular tariff is just and reasonable via a traditional cost-of-service ratemaking inquiry that balances ratepayers and the utilities' financial interests to realise a rate within the zone of reasonableness. Tariffs can be challenged for being unjust, unreasonable, unlawful, or discriminatory.

EPAct 2005 authorises FERC to require transmission providers not subject to its jurisdiction to provide open access to their transmission system at terms and conditions comparable to those the unregulated entity provides to itself. An unregulated entity may be exempt from this requirement if it sells less than 4 million MWh of electricity annually or if it does not own or operate the transmission facilities needed to operate an interconnected system. However, many of these regulated entities already provide open access based on reciprocity agreements with transmission providers.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Since 1968, NERC has operated as the primary entity responsible for assuring the reliability of the grid. NERC was founded by the electric utility industry to develop and promote rules and protocols to enhance the reliability of the bulk power electric system in North America through a voluntary, self-regulatory process. EPAct 2005 added section 215 to the FPA, which provides for the creation of an ERO to be the organisation responsible for establishing and enforcing reliability standards for the bulk power system in North America. In 2006, FERC certified NERC as the ERO. The ERO oversees an enforcement programme that includes compliance audit monitoring and reliability readiness review.

In 2007, FERC strengthened the reliability regime by approving mandatory reliability standards for the bulk electric system proposed by the ERO, approving delegation agreements between the ERO and eight regional entities and creating a new internal Office of Electric Reliability. The mandatory reliability standards apply to entities designated by NERC as users, owners, and operators of the bulk electric system. Both monetary and non-monetary penalties may be imposed for violations of these standards. In July 2014, a revised definition of the bulk electric system went into effect. The new definition expands the scope of facilities that form part of the bulk electric system to facilities operated at or above 100kV, thereby covering entities that own or control these facilities with certain limited exceptions. However, in March 2015, FERC gave approval for NERC to develop a new risk-based assessment and registration initiative intended to reduce regulatory burden and align compliance obligations with issues that pose a greater potential impact to reliability. Additional proposed NERC reliability initiatives include developing standards to minimise potential disruption from geomagnetic disturbance events as well as to create cybersecurity standards to protect operational infrastructure.

In addition, the replacement of coal-fired, nuclear, or other conventional generation resources with natural gas-fired or variable energy resources stands to impact grid reliability. As such, grid operators, such as RTO and ISOs, will likely need to develop approaches to effectively manage capacity during hours of peak demand, as well as manage over-generation during off-peak hours. For instance, PJM, the RTO tasked with administering the transmission grid and energy and capacity markets for the Mid-Atlantic region, recently implemented a revised auction model for capacity called the Capacity Performance Resource model, intended to improve overall reliability. The new model was created after the 'Polar Vortex' in the winter of 2014 in which natural gas shortages resulted in the failure of multiple generating units. The Capacity Performance Resources structure contains bonus and penalty payments that are structured to provide greater assurance that energy and reserves will be available during instances of peak demand created as a result of emergency operating conditions. In addition, technological developments, such as improvements to grid forecasting and the development of smart grid technology, will likely assist grid operators in providing the flexibility needed to address the challenges presented by variable resources and decreased generation capacity from more traditional resources.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Similar to generation siting, distribution is regulated primarily at the state level.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Specific procedures for connection to the distribution grid vary from state to state. However, state laws generally provide that distributors cannot deny service that is in the public interest.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Specific governmental measures to encourage or require the expansion of the distribution network vary by state.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

FERC has jurisdiction over transmission of electric energy in interstate commerce by public utilities, regardless of the voltage level of the delivery facilities. Section 201 of the FPA reserves regulatory authority over all facilities used in the local distribution of electricity to the state utility commissions. FERC in Order No. 888 promulgated a seven-factor functional test for the case-by-case determination of the jurisdictional separation between FERC-jurisdictional interstate transmission service (including service over low-voltage distribution lines) and state-jurisdictional local distribution service, and FERC generally defers to the states' application of this test. The functional test looks at the proximity of the facilities to retail customers; whether the facilities are radial in character; whether power flows into or out of the facilities; whether power entering the facilities is transported to another market; whether power is consumed in a defined area; whether the facilities include meters to measure power flow into the facilities; and the voltage of the power flowing through the facilities.

FERC determines the rates, terms, and conditions of transmission service in interstate commerce (including service over low-voltage facilities) under the FPA's just and reasonable standard based on cost-of-service principles. Where retail customers buy electricity from a wholesale provider, and the electricity is then delivered over distribution facilities by the load-serving entity, the state determines the rates, terms, and conditions of such distribution service. Because distribution services are considered to be a natural monopoly, state public utility commissions generally review tariffs for distribution services proposed by the utilities via a traditional cost-of-service ratemaking inquiry. State utility commissions generally approve the tariffs submitted by utilities if they are just and reasonable. The tariffs offered by various utilities will typically vary, even within a state.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

FERC has jurisdiction over sales of power at wholesale in interstate commerce other than sales by federal or state governmental bodies and rural cooperatives that are indebted to the Rural Utilities Service (RUS) or cooperatives that sell less than 4 million MWh of electricity per year. Retail sales of electricity are regulated at the state level, with variation from state to state.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Tariffs and contracts pursuant to which public utilities sell power generally must be filed with FERC (wholesale sales) or the applicable state PUC (retail sales) before service commences to allow the applicable regulatory entity an opportunity for review, as well as for public notice and comment. Under the FPA, FERC has jurisdiction over wholesale rate-making and is charged with assuring the rates, terms, and conditions pursuant to which public utilities offer wholesale power sales are 'just and reasonable'.

FERC permits wholesale sales of power at market-based rates if the seller demonstrates a lack of market power by passing a series of horizontal and vertical market screens. FERC has commenced investigations to determine whether utilities should retain their authority to sell power at market-based rates after finding that certain utilities did not pass at least one of the screening tests. In response, several utilities voluntarily agreed to implement cost-based rate caps in the areas where FERC found a presumption of market power and revoked the market-based rate authority of a utility.

Sellers of wholesale power that have applied for and received FERC approval to sell power pursuant to a market-based rate tariff can thereafter enter into new power sales contracts and transactions without filing the contracts before commencing service. Instead, such sellers file quarterly reports of their power sales contracts and transactions under their market-based rate tariff. In the absence of a showing of a lack of market power, FERC regulates the rates for wholesale sales under cost-of-service rate-making principles, and each new contract must be filed with FERC before the commencement of service.

Unlike the situation with respect to transmission tariffs, FERC does not generally dictate specific non-price terms and conditions in wholesale power sales contracts but does dictate specific non-price terms and conditions in the market-based rate tariff. The regulatory structure allows complaints to be filed challenging contracts or reported power sales transactions as being unjust, unreasonable, unlawful or discriminatory.

Retail sales are regulated at state level, with significant variation from state to state. In the absence of a competitive retail market, retail rates are typically established based on cost of service.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Section 201 of the FPA grants FERC exclusive regulatory authority over the wholesale sale of electricity in interstate commerce by jurisdictional entities. The state utility commissions retain regulatory authority over wholesale sales of electricity by purely intrastate wholesale sales (in practice, this class is limited to wholesale sales in Alaska, Hawaii and ERCOT), as well as wholesale sales by non-jurisdictional entities such as rural electric cooperatives, municipal utilities, and state- or federally created utilities.

FERC's exclusive regulatory authority was reaffirmed in a recent decision by the US Supreme Court that invalidated a state incentive programme that provided a guaranteed income to new natural gas-fired generating facilities to ensure the facility would clear the wholesale capacity auction operated by the RTO. A unanimous US Supreme Court struck down the programme, finding that subsidy artificially suppressed wholesale power prices, and therefore infringed on FERC's exclusive authority to regulate wholesale sales of electricity in interstate commerce.

The FPA grants FERC authority over all jurisdictional wholesale sales of electricity to ensure that wholesale rates are just, reasonable and not unduly discriminatory or preferential. Although traditionally FERC had employed a cost-of-service ratemaking inquiry when reviewing wholesale rates to realise this statutory mandate, FERC has also allowed the market to determine wholesale power rates where it has found that the seller and its affiliates lack or have mitigated vertical or horizontal market power, and have adequately restricted affiliate transactions with captive customers. Once FERC approves a jurisdictional entity's generic market tariff, the jurisdictional entity is free to negotiate with other parties in the marketplace over the specific rate charged for the wholesale sale without having to seek FERC approval of the agreement before commencing service.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

At the retail level, electric utilities have traditionally operated under an obligation to serve. In exchange for what is generally an exclusive service territory and an opportunity to recover prudently incurred expenses through cost-based rates, utilities are obliged to provide service to all customers in that service territory, as well as to plan adequately for the future needs of customers. In states that adopt retail competition, certain electric utilities may still retain an obligation to provide service to customers who do not select a competitive supplier.

FERC has recognised that wholesale electricity sales are generally governed by private contract, rather than by regulatory order or an express obligation to serve.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

A number of governmental agencies are involved in different aspects of the regulatory policies governing electricity. At the federal level, Congress ultimately determines the direction of national energy policy through legislation, but it delegates broad authority to implement legislative mandates to FERC, the Department of Energy, and other administrative agencies. At the state level, electric utilities are regulated by PUCs.

23 Scope of authority

What is the scope of each regulator's authority?

FERC has authority to regulate sales of wholesale power and transmission in interstate commerce and to grant and administer licences for hydroelectric plants on navigable waters. Under the Public Utility Holding Company Act of 2005 (PUHCA 2005), FERC also has authority to grant exempt wholesale generator (EWG) status and foreign utility company (FUCO) status. FERC exercises authority under PURPA with respect to qualifying small power production facilities and cogeneration facilities (QFs).

FERC has jurisdiction over the disposition of assets subject to its jurisdiction, including through mergers, asset divestitures, corporate reorganisations and other transactions in which there is a change in the control of jurisdictional assets. FERC also has oversight authority with respect to the issuance of securities (except if regulated by a state) and interlocks among the officers and directors of public utilities and financial institutions, or the utility's suppliers of electrical equipment. Public utilities under FERC's jurisdiction are subject to various requirements with respect to accounting and record retention and are required to satisfy various reporting requirements.

Under PUHCA 2005, FERC has increased oversight over, and access to, the books and records of public utility holding companies and their subsidiaries and affiliates to the extent that such books and records pertain to FERC-jurisdictional rates or charges. Any service company in a holding company system providing non-power goods and services to an affiliated FERC-jurisdictional public utility or natural gas company must file annual reports disclosing detailed information about their businesses. Public utility holding companies may seek exemptions and waivers from these regulatory requirements. However, an automatic exemption from all of the requirements is available to companies that are holding companies solely with respect to ownership of EWGs, QFs or FUCOs. In addition, single-state holding companies are entitled to a waiver from some, but not all, of the requirements but must seek the waiver from FERC.

The NRC licenses the construction and operation of nuclear power plants and other nuclear facilities to ensure the protection of public health and safety. The Atomic Energy Act (AEA) governs the use of nuclear materials by both military and civilian entities, requires that all nuclear facilities be licensed, and establishes compensation for, and limits damages arising from, nuclear accidents. The NRC has developed detailed regulations and guidelines concerning all aspects of the operations of a nuclear power plant.

State PUCs regulate terms and rates for retail sales and delivery of electricity. PUCs are charged with ensuring that the public has access to safe, reliable utility service at reasonable rates and, thus, also have authority over at least some aspects of the organisation and finances of public utilities. Many PUCs also have authority to make siting decisions for transmission lines and generation facilities. However, in other states, siting decisions are delegated to other agencies.

Many local governments operate municipal utilities to provide electric service to their local communities. While the majority of municipal utilities serve smaller communities, several large cities, such as Los Angeles, San Antonio, Seattle and Orlando, operate publicly owned electric utilities. City councils and boards of elected or appointed officials generally govern municipal utilities.

The RUS promotes electrification of rural America by providing financing to local cooperatives. Electric cooperatives are governed by their member customers through an elected board of directors. Cooperative boards set rates as well as determine the types of services available and other policies. PUCs regulate some aspects of cooperatives' activities in approximately 20 of the states in which cooperatives operate (The Regulatory Assistance Project, Electricity Regulation in the US: A Guide, page 24 (March 2011)). Rural cooperatives with loans outstanding from the RUS are also obliged to comply with various loan covenants and regulations that affect their operations. The TVA, formed in 1933 as a wholly owned corporation of the US government, generates and transmits power in seven south-eastern states. Under the Consolidated Appropriations Act of 2005, TVA is governed by a nine-member, part-time board, appointed by the president and confirmed by the Senate to serve staggered five-year terms (www.tva.com/abouttva/board/faq.htm).

The four federal power marketing administrations (PMAs) (the Bonneville, Southeastern, Southwestern and Western Area Power Administrations – the Alaska Power Administration was privatised in 1998) operate as agencies of the DoE. The PMAs do not own or operate generating facilities but market the power produced by federally owned hydro-facilities. Administrators of the PMAs have authority to set rates and must certify that rates are 'consistent with applicable law' and 'the lowest possible rate to customers consistent with sound business principles'.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

FERC and NRC are each authorised to have five commissioners. The president nominates and Congress confirms commissioners for FERC and the NRC for staggered five-year terms. The president also appoints one commissioner to serve as chair of each commission. No more than three commissioners may belong to a single political party. Furthermore, FERC and NRC decisions are not subject to review by the president, Congress, the DoE or other agencies.

State PUCs vary in size, but generally have between three and seven commissioners. It is common to limit the number of commissioners who may be from a single political party. In most states, the governor appoints commissioners, with approval by the upper house of the state legislature, for staggered five- or six-year terms. In some states, commissioners are elected. The governor typically designates one commissioner to serve as chair of the commission, although in some states the commissioners select the chair. State commissioners are generally subject to restrictions similar to those of their federal counterparts with respect to employment, investments and ex parte communications.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions by FERC can be challenged on both substantive and procedural grounds. Within 30 days of a final decision or order by FERC, a party to the proceeding (either the applicant or an intervenor) may file a request for rehearing with FERC. Within 60 days of issuance of the decision on rehearing, an aggrieved party may request a review of FERC decisions by a US Court of Appeals. In general, the Court of Appeals will not consider any objections not raised in the request for rehearing to FERC. US Supreme Court review is possible upon a showing of compelling cause (for example, a conflict between decisions of two or more circuits of the US Court of Appeals or often where a major rule issued by a federal agency is invalidated by a Court of Appeals). PUC decisions can also be challenged through judicial appeals in state courts, or if the decision violates federal law, a cause of action could be brought in federal court (subject to various limitations).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

FERC approval is required before the disposition of any facilities subject to its jurisdiction under the FPA of a value in excess of US$10 million, as well as direct or indirect mergers or consolidations of public utility facilities with those of any other person regardless of the value of the facilities. Facilities under FERC's jurisdiction under section 203 of the FPA include facilities used for transmission or sale of electric power in interstate commerce (including 'paper facilities' such as contracts for wholesale power sales) as well as generation assets used for wholesale sales. FERC review is required if there is a change in 'control' of jurisdictional facilities. In general, FERC will presume that a transfer of less than 10 per cent of a public utility's holdings is not a transfer of control.

Any holding company that owns an entity selling power at wholesale or transmitting electric energy must obtain FERC authorisation to acquire securities valued in excess of US$10 million in any entity that sells at wholesale or transmits electric energy or to otherwise merge with any such entity with a value in excess of US$10 million. In addition, the transfer of specific assets or licences may necessitate additional reviews. For example, the transfer of a nuclear generating facility requires NRC approval.

FERC has established blanket authorisations for a variety of transactions. For example, transactions in which a holding company that includes a transmitting utility or an electric utility seeks to acquire or take any security of a transmitting utility or company that owns, operates or controls only facilities used solely for transmission in intrastate commerce or sales of electric energy in intrastate commerce, or facilities used solely for local distribution or sales of electricity at retail, are automatically authorised. Transactions involving internal corporate reorganisations that do not present cross-subsidisation issues or involve a traditional public utility with captive customers or that owns transmission assets are also automatically authorised. Acquisitions by holding companies of non-voting securities do not require prior FERC authorisation. Acquisitions by holding companies of voting securities do not require prior FERC authorisation if, after the acquisition, the acquiring holding company will directly or indirectly own less than 10 per cent of the outstanding voting securities. Moreover, acquisitions by holding companies of foreign utility companies do not require FERC authorisation except where the holding company or its affiliates has captive customers in the US, in which case the holding company must make certain representations that the transaction will not adversely affect such captive customers.

The Federal Trade Commission (FTC) and the Antitrust Division of the Department of Justice (DoJ) (collectively, the antitrust agencies) are the primary agencies with authority to enforce US antitrust and fair trade practice laws. The antitrust agencies can review the antitrust implications of proposed mergers and certain acquisitions of assets or securities in the electricity sector under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (HSR Act). Their authority is not specific to any one industry, but they, in addition to FERC and the states, may challenge in court anticompetitive practices in the electricity sector. The antitrust agencies' authority comes from laws including the HSR Act, the Federal Trade Commission Act (FTCA), the Clayton Act and the Sherman Act.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In considering an application to merge, acquire or transfer control of assets under section 203 of the FPA, FERC must determine whether the proposed transaction is in the public interest. As provided in FERC's merger policy statement in Order No. 592, such determination requires an evaluation of the proposal's effect on competition, rates and regulation. FERC must also consider whether proposed acquisitions will result in cross-subsidisation of any non-utility company in the same holding company system or in any pledge of utility assets for the benefit of any company in the same holding company system. FERC may approve an acquisition resulting in such cross-subsidisation or pledge of utility assets only if FERC determines that such cross-subsidisation or pledge will be consistent with the public interest.

With respect to assessing a proposed transaction's impact on competition under section 203 of the FPA, FERC's merger policy statement generally requires that applicants provide it with a competitive screen analysis (horizontal or vertical, as appropriate) showing the effect of the proposed disposition on relevant products in relevant geographical markets. The competitive screen analysis must:

- identify the relevant products (such as economic capacity and available economic capacity) and the geographical markets in which the competitive effects of the acquisition can be analysed;
- determine the market shares of all participating firms and the degree of concentration in the market, both before and after the proposed acquisition; and
- identify the market characteristics that will influence the ability of the combining entities to adversely affect competition, such as barriers to entry into the relevant market by other firms.

Market power is measured in part using the Herfindahl-Hirschman Index (HHI) measure of market concentration. The current DoJ and FTC guidelines have higher HHI thresholds than FERC for determining market concentration, making it less likely for a particular market to be deemed 'moderately concentrated' or 'highly concentrated' based on HHI alone. However, FERC's appendix A horizontal electric utility merger analysis does not follow the DoJ and FTC guidelines, but instead uses a more-stringent standard to measure market concentration.

FERC evaluates both the magnitude of increases in market power and overall post-transaction concentrations of market power to identify those transactions that are likely to have an adverse impact on competition. Applicants, however, are allowed to identify in their analysis other factors that may help to negate the presumption, such as benefits that the proposed acquisition will bring.

FERC will provide expedited consideration of completed applications for approval of transactions that are not contested, do not involve mergers and are consistent with FERC precedent, as well as uncontested transactions involving a disposition of only transmission facilities under the functional control of a FERC-approved RTO or ISO; transactions that do not require a competitive screen analysis; and internal corporate reorganisations that do not present cross-subsidisation issues. For transactions that do not qualify for such expedited action, FERC is required to act within 180 days after the filing of an application, unless FERC determines there is good cause for requiring additional time, in which case the time for action may be extended up to 180 days. For example, FERC might extend the time frame for action if it finds that an evidentiary hearing is needed to determine whether the transaction is in the public interest.

The antitrust agencies may review the antitrust implications of mergers and certain acquisitions of assets or securities before those transactions are consummated under the HSR Act. The FTC promulgated a set of detailed rules that govern the pre-merger notification that must be filed in connection with such a transaction. A transaction subject to the HSR Act may not close before the expiry of the applicable waiting period, which is initially 30 days. If the antitrust agency decides to open a second-phase investigation, the waiting period will be extended until the 30th day following substantial compliance with a second request. If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, it may seek a preliminary injunction in a federal court, which would bar the consummation of the merger until the court (in a DoJ action) or the FTC (in an FTC action) has an opportunity to decide whether to seek a permanent injunction following a full trial. Such a preliminary injunction does not issue automatically; in deciding whether to preliminarily enjoin a merger, the courts give heavy consideration to whether the antitrust agency will eventually be able to prove its case at trial.

If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, such issues must be resolved before the transaction can proceed. In the electric sector, FERC (not the antitrust agencies) generally takes the lead in addressing any anticompetitive issues presented by a proposed transaction. Under the HSR Act, however, merging entities in such a situation often enter into a consent order with an antitrust agency under which the acquiring company agrees to divest a portion of its existing assets or of the assets it will be acquiring.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anti-competitive or manipulative practices in the electricity sector?

The federal agencies that are primarily concerned with anticompetitive practices in the wholesale electricity sector are FTC, DoJ, FERC and the Commodity Futures Trading Commission (CFTC). State utility commissions and attorneys general ordinarily, but not exclusively, focus on such practices in the retail electric sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anti-competitive or manipulative?

FERC enforces compliance with tariffs or contracts in an effort to assure service is 'non-discriminatory' and charges are 'just and reasonable'. EPAct 2005 amended the FPA to prohibit buyers or sellers of interstate wholesale electric energy or transmission services from knowingly providing a federal agency with false information or from using any manipulative or deceptive device or contrivance in violation of FERC regulations. Further, a seller of electric products and services applying for market-based rate authority must show it does not possess unmitigated market power in the affected markets.

The CFTC has authority to ensure futures and options markets operate fairly and orderly under the Commodity Exchange Act. This authority overlaps FERC's authority to the extent conduct involves trading and hedging activities of electricity and similar commodities. In 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act went into effect, which overhauled much of the US financial regulatory system and conferred additional authority to the CFTC. Although the CFTC is still in the process of developing regulations, it has issued two final orders – the first in 2013 and the second in 2016 – exempting all RTO and ISO system operators from CFTC regulation (www.cftc.gov/PressRoom/PressReleases/pr7472-16). The exemption covers certain financial transmission rights, energy transactions, and forward capacity transactions sold pursuant to an RTO or ISO governing tariff if the transaction is related to the allocation of physical electric energy and carried out by an 'appropriate person', ie, those individuals or entities meeting certain sophistication or financial thresholds. However, the exemption does not apply to the CFTC's anti-fraud or anti-manipulation regulation.

The FTC has concurrent authority, pursuant to the FTCA, to enjoin 'unfair methods of competition'. The FTC's authority extends to acquisitions that tend to substantially lessen competition, as well as to price discrimination and other anticompetitive actions. The FTC also has authority to directly protect consumers from any 'unfair or deceptive' practice, defined as an act 'that causes or is likely to cause substantial injury to consumers that is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers and to competition'.

The FTC and the DoJ have concurrent power to prosecute violations of the other federal antitrust statutes. States and private parties may also bring actions under federal and state antitrust laws. This was recently reaffirmed by the US Supreme Court, which ruled that the federal Natural Gas Act does not pre-empt state antitrust laws, meaning a private party may bring state antitrust claims for alleged pipeline price manipulation.

Section 1 of the Sherman Act prohibits 'agreements, conspiracies or trusts in restraint of trade'. Under the Sherman Act, some agreements (such as agreements of horizontal price fixing or territorial division) are determined to be per se illegal because the conduct of the agreement is overwhelmingly considered to be harmful. Other agreements that might be, but not necessarily, harmful are analysed under the rule of reason, requiring the plaintiff to prove that the agreement caused economic harm. Section 2 of the Sherman Act prohibits monopolies, specifically targeting anticompetitive conduct that creates or maintains market domination. The Clayton Act bars certain types of price discrimination and tying arrangements when they lessen competition.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anti-competitive or manipulative practices?

If a proposed tariff or contract is found by FERC to be unjust and unreasonable, FERC will order mitigating revisions. FERC may require the sellers to refund the difference between the rates collected and the rates FERC determines are just and reasonable, beginning with the date the investigation was initiated. In order for a seller to be eligible to sell wholesale energy at market-based rates (instead of at cost-based rates), it must demonstrate to FERC that it and its affiliates lack (or have mitigated) market power. FERC can refuse to grant market-based rate (MBR) authority to an applicant that fails to show it does not possess market power. At any point, FERC has the authority to revoke market-based rate authority upon a determination that the seller possesses market power. In addition, FERC maintains the ability to revoke prior grants of MBR authority if the company's behaviour involves fraud, deception or misrepresentation.

Once initially granted MBR authority, sellers are required to take additional measures in order to maintain the market-based rate authority. For example, sellers that control more than 500MW of generation in any region of the country must file updates every three years in order to demonstrate their continued lack of market power. Also, such an electrical provider must notify FERC within 30 days of any significant change that might affect its qualification for market-based rates. Further, FERC has enacted market behaviour rules in order to govern sellers' conduct in the wholesale market. These rules address unit operations, communications, price reporting and record retention.

On an ongoing basis, FERC has authority under section 206 of the FPA to regulate markets and protect them against anticompetitive activity. Section 206 grants FERC authority to initiate an investigation, upon its own motion or third-party complaint, regarding whether any rate charged by a utility for any transmission or sale is 'unjust, unreasonable, unduly discriminatory or preferential'.

EPAct 2005 amended the FPA to allow for increases in the maximum penalty amounts for violations of the FPA. FERC is now able to assess civil penalties and fines of approximately US$1 million or imprisonment for not more than five years, or both, for wilful and knowing violations, through acts or omissions, of any section of the FPA. Also, EPAct 2005 provides for civil penalties of approximately US$1 million per violation per day to be assessed for violations of regulations located in section II of the FPA after notice and the opportunity for a public hearing. While FERC has used its penalty authority sparingly in the past, FERC has been acting more forcefully on enforcement matters pursuant to its expanded authority. In Fiscal Year 2015, FERC's enforcement division obtained settlements to assess civil penalties in the amount of approximately US$26.25 million for violations of the FPA and ordered disgorgement of unjust profits in the amount of approximately US$1 million (www.ferc.gov/legal/staff-reports/2015/11-19-15-enforcement.pdf). Since 2007, FERC has assessed almost US$645 million in civil penalties and over US$302 million in disgorgement (not including several significant pending matters).

The FTCA authorises the FTC to issue 'cease and desist' orders requiring electric utilities to refrain from prohibited unfair trade practices and may assess civil penalties for violations, up to US$11,000 per violation per day. Violations of sections 1 and 2 of the Sherman Act may result in fines up to US$100 million for corporations, or by imprisonment of up to 10 years, or both. In addition, under the antitrust acts, private parties are able to bring enforcement actions to address unfair trade practices in the electric sector, including tying arrangements, price squeezes and denial of access to essential facilities.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Several current or former US utilities are or have been owned by foreign parties. New investors should be mindful of current US regulatory and political attitudes toward foreign investment in the energy sector.

The Exon-Florio amendment to the Defence Production Act authorises the president of the United States to block a transaction of foreign persons gaining control of a US business that threatened national security. The Foreign Investment and National Security Act of 2007 (FINSA) confirms the broad range of energy and infrastructure transactions that may be covered, and intensifies the screening for certain transactions.

Exon-Florio is administered by the Committee on Foreign Investment in the US (CFIUS), an inter-agency committee chaired by the secretary of the Treasury and including the attorney general and secretaries of homeland security, commerce, defence, state and energy. CFIUS is responsible for reviewing proposed foreign investment transactions and making recommendations to the president.

FINSA confirms that Exon-Florio applies to acquisitions of 'critical infrastructure'. This term has been defined as systems or assets so vital to the United States that the incapacity or destruction of it would have a debilitating impact on national security. While the definition has been applied to ports and oil companies, it is now clear that electricity generating, transmission or distribution facilities would be considered critical infrastructure.

FINSA formalises many CFIUS practices, including explicitly encouraging parties to notify and engage with CFIUS regarding a transaction in order to seek CFIUS clearance. FINSA provides for a 30- to 45-day CFIUS review of covered transactions (though this time may be extended under new CFIUS legislation, discussed below); reviews are mandatory for covered transactions involving foreign government-controlled entities.

In August 2018, the United States enacted the Foreign Investment Risk Review Modernization Act (FIRRMA), which reforms and modernises the CFIUS review process and represents the first update to the CFIUS statute in more than a decade. Generally, FIRRMA broadens the scope of 'covered transactions' subject to CFIUS's jurisdiction to capture new categories of transactions not previously covered. FIRRMA would include provisions for the review of business transactions involving critical infrastructure (such as energy facilities), technology, and emerging technologies. Further, FIRRMA would enable CFIUS to evaluate non-controlling investments made by foreign entities. However, the full impact of FIRRMA's key provision is not yet known, as the legislation directs the US Treasury and CFIUS to promulgate new regulations implementing FIRRMA. That process could take as long as 18 months from the date of enactment.

For nuclear-generating facilities, the Atomic Energy Act generally bars the issuance of a reactor licence to a non-US person. For example, the NRC Atomic Safety and Licensing Board recently denied a licence for a proposed nuclear project in Maryland because it is 100 per cent owned by a foreign entity. Situations where a foreign company would be able to hold a licence include when it owns up to 50 per cent of an entity whose officers and employees responsible for special nuclear materials are US citizens, or when it owns a US subsidiary that will hold the licence, the foreign company's stock is 'largely' owned by US citizens, and the subsidiary's officers and employees responsible for special nuclear materials are US citizens. The NRC has indicated it may relax this requirement in the future, as in May 2015 it ordered Commission staff to develop a regulatory guide that will use a 'graded approach' to assess and mitigate potential foreign ownership, control, or domination of US

Update and trends

Uncertain future of emissions regulation

As noted above in question 6, the CPP is all but dead now that the EPA under the current administration has proposed the ACE rule, which is intended to rescind and replace the CPP. Similar to the CPP, however, industry observers and legal professionals have expressed scepticism over the proposed ACE rule's viability. Many states and environmental protection organisations will almost certainly sue to stop a final EPA rule from going into effect. Under the proposed rule, the ACE would direct states to set relatively modest limits on emissions from power plants, and these limits can be achieved with upgrades to existing coal power plans. Opponents argue the effect therefore is to increase greenhouse gas emissions by allowing coal facilities to stay operational instead of reducing emissions through retirements to coal facilities and shifting resources to less polluting sources (eg, natural gas or renewable sources). The EPA, under a 2007 Supreme Court ruling, is required to regulate greenhouse gas emissions under the CAA, and opponents argue the ACE fails to do so by allowing for greenhouse gas emissions to increase. On the other hand, utility companies and others in the power sector stand to benefit by saving hundreds of millions of dollars in compliance and reporting costs.

From a market perspective, proponents of renewable energy are concerned that the proposed ACE rule would slow development as well as exacerbate the effects of climate change. However, low natural gas prices and other environmental regulations are still expected to lead to the retirement of coal-fired generation and an increase in natural gas-fired generation. This in turn will increase the demand for natural gas resources. As a result, natural gas prices could rise and there will be opportunities for the development of supporting infrastructure, such as extraction or transportation. Nonetheless, utilities will continue to need to devote additional investment capital toward developing new generating capacity to replace the loss from the retirement of coal-fired plants. However, there may be some offset by a decreased demand in electricity as consumption becomes more efficient through technological advancements.

Given that the EPA is not contemplating rescinding its 'endangerment' finding, even without the CPP there is still likely to be a continued drive toward developing variable energy resources, including wind and solar generation. Variable resources entail reliability concerns as well. In general, as government environmental policy shifts generation capacity away from coal-fired generation toward natural gas-fired and variable resources, grid operators must be prepared to meet the challenges that will arise from having to adapt to decreased capacity and with the inherently variable nature of those resources. It will also be incumbent on regulators at both the state and the federal level to develop emissions regulations with reliability concerns in mind.

Wholesale market design considerations

In recent years, the combination of low natural gas prices, advancements in generating technology and flatter demand for electricity have shifted the economics against older, less-efficient generating resources, including coal and nuclear sources, in the wholesale power markets. In addition, many states have enacted policies to further development of particular generating resources, such as renewables but also credits for nuclear facilities, which may have the effect of suppressing wholesale electricity prices.

In May 2017, FERC held a technical conference to explore this issue. On the one hand, states are passing legislation favouring development of certain kinds of generating resource over others (and, in the case of nuclear subsidies, the state legislation actually targets specific generating units). Doing so, however, may undermine the fundamental construct of the wholesale markets, which is based on principles of economic and operational efficiency to select generating resources, without regard to resource type. FERC's intent is to develop a framework within the wholesale market construct that preserves the fundamental economic principles of the wholesale markets while allowing for states to support particular resource development. As a result, it is likely that individual RTOs and ISOs will explore changes to their market construct to balance the dynamic between wholesale electric markets and state policy prerogatives.

The current presidential administration has also sought to counter market forces by introducing policies that have the effect of propping up the coal, and to a certain extent, the nuclear industry. Most notably, in September 2017, DoE directed FERC to develop a rule that would change wholesale markets by requiring them to price a generating resource's reliability characteristics. The focus of DoE's effort was around 'grid resiliency' (in contrast to grid reliability, which FERC already regulates pursuant to section 215 of the FPA). Under this framework, all qualifying generating units would have been either coal or nuclear power plants, many of which were subject to financial stress. DoE cited the trend of coal and nuclear retirements as a threat to fuel-secure generation. FERC, as an independent agency, was not obliged to follow the DoE's order, instead voting unanimously to reject the DoE's proposal and terminated the proceeding. However, according to recent news reports citing a draft memorandum drafted by the office of the US President, DoE will try a new strategy to boost the economic viability of coal and nuclear power plants. Under this strategy, DoE would invoke authority under a World War II era law that would require regional grid operators to purchase power from coal and nuclear generators under the guise of national security. If implemented, this would represent an unprecedented intrusion by the US government into the competitive wholesale marketplace by seeking to subsidise otherwise uneconomic generating facilities. As of August 2018, the DoE has not formally announced it will go forward with this controversial plan, but if it does, it is likely to be subject to intense scrutiny by stakeholders throughout the industry.

Cybersecurity

Recent news reports have highlighted the risks posed by state-sponsored cyberattacks on the bulk electric system leading to an increased focus on ensuring the US electric grid is adequately protected against similar sophisticated cyberattacks. Some reports estimate that a widespread hack of the US electric grid could cause as much as US$1 trillion in damages. As grid modernisation efforts continue, older components of the transmission network will be replaced by more sophisticated components that can be controlled over an internet-connected network and software. In addition, many utilities have replaced older meters at their customers' homes with new, digital smart meters, creating risk of cyber intrusion into the distribution network.

To that end, FERC, along with NERC, the US Department of Homeland Security (DHS), the DoE, and the National Institute for Standards and Technology have commenced a number of initiatives aimed at increasing grid security. For instance, in May 2017, the president issued an executive order on cybersecurity efforts, directing the DoE and DHS to work with state and local government officials to assess vulnerabilities in the electric grid and the potential impact of an outage caused by cyberattack. More recently, FERC, in July 2018, issued Order No. 848 directing NERC to modify its mandatory reliability standards to improve the mandatory reporting of cybersecurity incidents by utility companies, including attempts that might facilitate subsequent efforts to harm reliable operation of the nation's bulk electric system. In the face of constantly evolving cyber threats, government and utilities will need to continue developing preventative measures to secure the grid against cyberattacks while also devising contingency measures to minimise the impact of an attack, were one to occur.

Shale gas revolution

For the first time in 60 years, the United States became a net exporter of natural gas in 2017, particularly driven by the development of extraction methods from shale gas reservoirs, such as those in Texas, Pennsylvania and North Dakota. However, many energy related laws and regulations rest on the assumption that the United States is a net importer.

Moreover, in April 2018, FERC commenced a new proceeding to review its decades-old policy governing the certification of natural gas transportation facilities pursuant to Section 7 of the Natural Gas Act. Among the many issues FERC will consider as part of the proceeding are changes to how FERC reviews the potential environmental effects of a proposed project. FERC has to date rejected arguments that it must consider the impact a project will have on climate change as part of the review process, but in this proceeding FERC has solicited feedback from stakeholders over whether it should take a broader look at climate impacts as part of its public interest determination in pipeline certificate proceedings. FERC has significant discretion over how it reviews proposed new pipeline infrastructure projects, and the extent to which it decides to change the environmental review component of its review stands to impact whether or not a utility decides to build new pipeline infrastructure and, as a result, will impact continued support in evaluating whether to build new pipeline infrastructure to serve increased demand for natural gas.

nuclear facilities (www.nei.org/News-Media/News/News-Archives/NRC-to-Use-Graded-Approach-on-Foreign-Ownership). In May 2016, the NRC issued a draft regulatory guide describing the acceptable methods for determining when a nuclear facility is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government (www.federalregister.gov/articles/2016/05/26/2016-12546/foreign-ownership-control-or-domination-of-nuclear-power-and-non-power-production-or-utilization).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

No electric transmission lines crossing the US international border may be constructed or operated without a presidential permit. The secretary of energy (through the DoE's Office of Electricity Delivery and Energy Reliability) will issue a permit upon determining that the project is in the public interest. The two primary criteria used to determine if a proposed project is consistent with the public interest are the impact the proposed project would have on the operating reliability of the US electric power supply and the environmental consequences of proposed projects. The DoE must also obtain concurrence from the secretary of state and the secretary of defence before issuing a permit.

The FPA allows exports of electric energy unless the proposed export would impair the sufficiency of electric power supply within the US or would impede or tend to impede the coordinated use of the US power supply network. Based on these guidelines from the FPA, DoE (again through the Office of Electricity Delivery and Energy Reliability) grants authorisation to export electric energy if it determines that sufficient generating resources exist such that the exporter could sustain the export while still maintaining adequate generating resources to meet all firm supply obligations and the export would not cause operating parameters on regional transmission systems to fall outside of established industry criteria. The DoE must also comply with the National Environmental Policy Act (NEPA) before granting authorisation to export electric energy. No federal permit is required to import electricity into the US, and no federal permit is required to sell imported electricity, if the sale at issue takes place outside of interstate commerce.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Federal regulation of a sale for resale in interstate commerce of imported or domestic electricity will apply if title to the electricity changes hands at a point within the US. In this case, the seller must apply to FERC for approval of the rates, terms and conditions of the sale. There are two exceptions. First, in the event the sale for resale in interstate commerce of imported or domestic electricity is conducted by a US government-owned, US state-owned, or US municipally owned utility, or is conducted by a US Department of Agriculture Rural Utilities Service-financed rural electric cooperative, there will be no FERC regulation of the sale. Second, there will be no FERC regulation of retail sales of imported or domestic electricity. The state PUC may regulate the retail sales of electricity within its border.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

In October 2008, FERC issued Order No. 717, which adopted significant changes to its standards of conduct governing relations between transmission providers for both electricity and natural gas and their affiliates. The rule concentrates on three principles as the way to prevent affiliate abuse. The main elements of this are the independent functioning rule, the no-conduit rule, and the transparency rule.

Independent functioning rule

FERC eliminated completely the concept of energy affiliates as well as the corporate separation approach to separating grid operators from marketing affiliates, two aspects of the old Order No. 2004 rules that had proved difficult to understand and enforce. Instead, the new rules are based on the employee functional approach that was first utilised in industry restructuring orders from the 1980s and 1990s. This approach focuses on an employee's actual function on the job rather than the employee's position in the organisation chart. Thus, whereas under the former rules any employee of a marketing or energy affiliate was prohibited from interacting with transmission function employees, Order No. 717 limits the category of employees who must function independently from transmission operators to those who are actively and personally engaged on a day-to-day basis in marketing functions. By narrowing the focus in this manner, the rule provided needed clarity to supervisors, managers and executives and allowed the free flow of the type of information needed for long-term planning.

No-conduit rule

The no-conduit rule prohibits a transmission provider from using anyone as a conduit for the disclosure of non-public transmission function information to its marketing function employees. This rule covers both information and employees not falling within the scope of the independent functioning rule. For example, although there is no general requirement that lawyers employed by transmission providers need to function independently of the company's marketing function employees, lawyers must, nevertheless, avoid serving as a conduit for passing non-public transmission information to marketing function employees.

Transparency rule

Order No. 717 is also designed to promote transparency through the collection, reporting, and public posting requirements of information that may alert interested persons and FERC to potential acts of undue preference.

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Reliability exception

Reflecting the importance of reliability, the order makes an exception to the independent functioning rule and the no-conduit rule for the exchange of information 'pertaining to compliance with reliability standards approved by the Commission' and information 'necessary to maintain or restore operation of the transmission system or generating units, or that may affect the dispatch of generating units'.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

FERC has authority to impose penalties in the amount of US$1 million per day per violation under sections 316 and 316A of the FPA or to use its rate authority to remedy affiliate abuse (as discussed more fully in question 29). Mechanisms for enforcement and remedies for violations of states' affiliate rules vary.

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