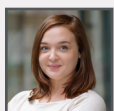


MIDDLE EAST

Energy Transition in the Middle East



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In the past year the Middle East has embraced the energy transition with new zeal, spurred on by an influx of investment for renewables, the continued price instability of conventional fossil fuels and the divestment by national oil companies of interests in hydrocarbon assets. Political influence also has had a large impact, with a flurry of announcements coming from the region in the run-up to COP26. Saudi Arabia and the UAE pledged to hit “net zero” by 2060 and 2050 respective-

ly, each allocating over \$150 billion to reach that goal and announcing ambitious initiatives in pursuit, such as the planting of 10 billion trees in Saudi.

In another clear indication of the changes underway, the Middle East Energy Transition reported this year that there were no contracts awarded for oil-powered or gas-fuelled power stations in the entire MENA region for H1 2021, while in the same period there were around \$2.8 billion of contracts awarded for renewable energy projects in the region. However, fossil fuels are expected to remain a significant part of the region’s energy production for years to come, with some of the commitments made to the energy transition contingent upon export of such fuels being maintained.

ENERGY TRANSITION

One key renewable source attracting significant investment and growth in the Middle East is solar. With an abundant supply, the region has been dramatically increasing capacity over recent years, achieving record low prices approaching an unprecedented 1 USDct/kWh. State-sponsored ACWA has been at the forefront of this, recently partnering with a subsidiary of Saudi Aramco on

the Sudair Solar Plant. The plant is part of PIF’s renewable energy programme and is set to be Saudi Arabia’s largest single-contracted solar PV plant and one of the largest in the world.

In Abu Dhabi, Al Dhafra PV2 is set to become the world’s largest single site photovoltaic plant upon completion, projected for next year. The plant is an innovative venture, utilising crystalline bifacial solar technology, which uses both sides of the solar panel to generate more energy. The project will help the UAE increase solar PV capacity fourfold by 2025, resulting in 94% of the country’s renewables being sourced from solar.

Another key renewable resource in the Middle East is wind power, which Egypt in particular - especially through the high wind speeds of the Gulf of Suez - is quickly developing. Milbank continues to advise on multiple Egyptian wind farms in respect of which construction is underway, including, among others, Lekela’s West Bakr Wind Project (250MW) and the Gulf of Suez Wind Project (500MW). Such projects are helping Egypt reach its goal of producing 42% of electricity from renewable sources by 2035.

Carbon capture and storage (CCS) is uniquely suited to the region due to emissions levels and established expertise on the technology used, and some facilities (such as Saudi Aramco’s Uthmaniyah CCS) are already operational. This will no doubt be an area of growth as Middle Eastern countries seek to reduce their emissions, with Saudi Arabia already committing to establishing a fund specifically for carbon sequestration.

Another area of growth in energy production is waste-to-energy plants, to which the region is increasingly turning in order to reduce pollution and waste problems whilst producing electricity. This year it was announced that Dubai would be building one of the world’s



largest waste-to-energy projects, the Dubai Centre for Waste Processing, set to generate 200MW of electricity from up to 45% of Dubai's municipal waste generation.

GREEN HYDROGEN AND AMMONIA

Green hydrogen, a cleaner alternative to the currently dominant “grey” hydrogen, is emerging as a key component of the energy transition in the Middle East. With their proliferation of renewable resources, large land mass and access to sea water, the GCC states are well-placed to be at the forefront of green hydrogen's development. In addition, the Middle East is well-placed for export of green hydrogen, ammonia and related products, which will be necessary as demand in both Europe and Asia is forecast to be high in the coming years.

A series of joint ventures and alliances have been borne out of this drive, such as the Abu Dhabi Hydrogen Alliance between Mubadala, the ADNOC and ADQ. The intention of this Alliance is not only to set out a roadmap to quicken the implementation of hydrogen technology in the UAE and its major industrial and transportation sectors but also to launch the UAE as an exporter of green and blue hydrogen. Another example in the region is the recently announced joint venture between Fertiglobe Partners (itself a partnership between OCI and ADNOC) with Scatec and the Sovereign Fund of Egypt to develop a 50-100 MW electrolysis plant at EBIC in Egypt to produce up to 90,000 metric tons green ammonia per annum.

Challenges remain in making green hydrogen cost effective yet hydrogen in general is attracting high levels of investment, with planned hydrogen projects currently estimated to bring \$44 billion in total investment to the region. This has led to speculation that the “oil hub” of the world could transition to the “hydrogen hub,” which will



doubtless lead to further investment in green hydrogen technology, research and development too.

INFRASTRUCTURE

Infrastructure investment in the Middle East is currently on the rise, with large scale projects such as the NEOM “megacity,” Bahrain's “smart silk city” and Qatar's construction for hosting

FIFA's World Cup in 2022 (estimated at over \$200 billion) all contributing to this. NEOM in particular is set to be an economic cornerstone for Saudi Arabia and will involve a multitude of smaller projects to bring the vision to fruition: from desalination, to cloud seeding, to green hydrogen. AI will also be employed to collect data which will improve the city's functioning.

At the end of 2020, Apollo (advised by Milbank) led a consortium of investors in one the region's largest real estate transactions to date, acquiring a 49% stake in a wholly owned subsidiary of ADNOC for \$5.5 billion. This was a clear indicator of growing confidence in the region, particularly following the effects of the pandemic. This deal is also indicative of a recent trend in the Middle East, namely the privatisation of key infrastructure and the opening up of national oil company balance sheets. In Saudi, the Privatization Program (part of Vision 2030) is estimated to bring in \$16.5 billion of investments from public-private partnerships by 2025, with a further \$38 billion through asset sales of public utilities and services.

(Sources for this article include the *Financial Times*, Al Jazeera, arabnews.com, globalccsinstitute.com, gulfbusiness.com, power-technology.com, pv-magazine.com and others.)

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