

Monsoon Wind: A Roadmap for Electricity Connectivity in Asia

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Achieving energy transition in 2023 in the face of a climate crisis is top of mind for nation states and organizations across the globe. The urgency is particularly acute in the Asia-Pacific region which, driven by rapid economic growth and energy consumption in developing countries, accounts for over 50% of the world's total greenhouse gas emissions. While the transition to renewable energy is underway in the region, progress varies among countries and there is recognition that a more rapid transition is required.

The Asia-Pacific region as a whole has plentiful renewable energy resources, but nevertheless faces significant challenges in achieving greenhouse gas emission reductions. One such challenge (among many) is that those countries with comparatively easy access to renewable energy resources are not necessarily those most in need of significant new generation capacity to power growth and development. In light of this, a key element in accelerating the speed of energy transition in Asia is in increasing electricity connectivity across borders.

The idea of an interconnected grid in Asia is not a novel one. The benefits of regional power grids in Europe and USA are evident and have long been touted as a possible model for the region. Even in 2012, the Asian Development Bank (ADB) estimated that electricity trade in the region could [save up to \\$200 billion over 20 years in energy investments](#) across the Greater Mekong Subregion.¹ However, concerns around energy security and the low price of domestic electricity production (largely using traditional thermal power sources) have stymied progress.

The Monsoon Wind Project – a 600-megawatt onshore wind power plant located in the Lao People's Democratic Republic (Lao PDR) which will sell power to neighboring Vietnam – is a significant advancement towards grid connectivity in Asia. The project will be the first cross-border wind power project in Asia, the largest wind power plant in Southeast Asia and the first in the Lao PDR.



The project's successful financial close in March 2023 is a culmination of different countries, parties and sectors cooperating and contributing to bridge gaps, unblock issues and facilitate access to capital. As other countries in the region seek power import arrangements to support their energy transition agenda, it is an encouraging sign of things to come.

Country and Sector Context

Lao People's Democratic Republic (Lao PDR)

Cross-border power supply has been a pillar of the Lao PDR's economic growth. Historically, it has relied on its significant hydropower capacity and its strategic location to become a net exporter of electricity. Lao PDR also has substantial untapped resource potential for non-hydro renewables including solar, wind, biomass, and small or mini-hydro. Through its Renewable Energy Development Strategy, 2011–2025, the country is seeking to promote non-large hydropower renewable resources to reach a 30% share of the country's total energy consumption by 2025. Renewable energy such as wind, which remains largely untapped, can provide a sustainable new resource for both domestic and export consumption. The Monsoon Wind Project is one of the country's most ambitious projects of its kind to date – being the largest wind power plant in Southeast Asia and the first in the Lao PDR. The project also contributes energy diversification

¹ [Greater Mekong Subregion Power Trade and Interconnection \(adb.org\)](#)

as the seasonality of the wind resource is countercyclical to the rainy season, thereby supporting the country's existing hydropower generation capabilities.

Socialist Republic of Vietnam (Vietnam)

Vietnam was the fastest growing economy in Asia in 2022.² This growth is unsurprisingly accompanied by the corresponding growing demand for electricity. Importing power is not a new strategy for Vietnam – it began importing power from China in 2004 and began importing from Lao PDR from 2013. However, amidst challenges facing the country to construct and operate domestic thermal power plants, the government has a renewed mandate to transition to renewable energy sources. Renewable energy importation is a key part of Vietnam's overall strategy to meet its clean energy target and COP27 commitments. Based on the country's latest draft Power Development Plan VIII, Vietnam is seeking to put a stop to new coal-fired power plants from 2030 and expects to import 4,000-5,000 MW of renewable energy, primarily from Lao PDR. To support this goal, in 2019, Vietnam and Lao PDR signed an Agreement on Cooperation on power import and export, with a view to Vietnam importing 1,000MW by 2020, 3,000MW by 2025 and 5,000MW by 2030.³

Notwithstanding Vietnam's promising growth profile and a strong demand for power, international financing and investment in the development of power plants in the country has been hampered by a number of bankability constraints. A key issue has been the mandated form of wind and solar power purchase agreement (PPA) for offtake by Vietnam Electricity's (EVN), which is generally viewed by international financiers as falling short on a number of risk allocation metrics required to support non-recourse project financings. Another constraint is the prospect of curtailment due to the limited capacity of transmission lines particularly in certain parts of the country. As a result, lenders have to date typically required some form of credit enhancement to finance projects in Vietnam.

The Project

The Monsoon Wind Project is located in the Sekong and Attapeu provinces in the southern region of the Lao PDR, around 22km from the Lao-Vietnam border.

The 600MW project will not only be Lao PDR's first wind power project, but also the largest wind power plant in Southeast Asia and the first cross-border wind power project in Asia.

The project consists of 133 Envision wind turbines and will connect to the EVN grid via a 22 km 500kv transmission line to the border with Vietnam. EVN is responsible for building the transmission line on the Vietnam side of the border where the project will connect to the 500kv backbone of the Vietnam grid at the Thanh My substation.

The project will supply substantial clean renewable energy to Viet Nam to help meet the country's growing demand for power and reduce energy sector emissions. Once operating, the project is expected to reduce annual greenhouse gas emissions by 750,000 tons of carbon dioxide equivalent. The project will also help unlock the Lao PDR's significant untapped wind resource potential and provide social and economic benefits to the country in the form of employment, improved infrastructure, increased regional connectivity, and revenues through collection of royalties, lease payments, and taxes.

Specific Features of the Project

PPA

Monsoon Wind Power Company Limited will sell electricity exclusively to EVN under a 25-year PPA. Unlike the local renewable PPAs, the Monsoon PPA contains bespoke terms reflecting the scale and complexity of the Project. Among other positive features, the Monsoon PPA is governed by English law, has Singapore arbitration as the dispute resolution

² [Vietnam GDP Grew Faster Than Expected in Economic Recovery - Bloomberg](#)

³ [Import of electricity: Solution to ensure national energy security \(evn.com.vn\)](#)

forum and provides for payments to be made by EVN offshore in US Dollars. These features were all viewed favourably by the lenders.

While the PPA still allows for curtailment for technical reasons, ADB was also able to mobilize a highly tailored \$60 million concessional finance package to reduce the risk of default if the Project's cashflow is impacted by curtailment events. The loans and grant will provide a debt service buffer during the operational life of the project and an additional cash reserve account that can be drawn in the event of any extreme curtailment event. This enhances the project's ability to withstand curtailment and, combined with other technical and financial due diligence on curtailment risk, enabled lenders to get comfortable with a non-recourse financing structure.

The Concession Agreement

The project is being implemented under a build-own-operate concession agreement with the Government of the Lao People's Democratic Republic (Lao PDR), which grants Monsoon Wind Power Company Limited the rights to design, build, finance, operate, and maintain the project; utilize the land and natural wind resources at the project site; and export electricity to Viet Nam. The term of the concession agreement is 25 years from the commercial operations date. The terms and conditions of the concession agreement generally follow recent precedents for hydropower projects in the Lao PDR. The concession agreement is governed by the laws of the Lao PDR.

Financing Features

The \$692.55 million non-recourse financing package consisted of a \$100 million ADB A loan with a 19-year tenor, and a further 382.55 million in parallel loans with the same tenor from the Asian Infrastructure Investment Bank, Export-Import Bank of Thailand, Hong Kong Mortgage Corporation, Japan International Cooperation Agency, and Kasikornbank Public Company Limited. In addition, ADB acted as a lender of record for a further \$150 million in B Loans with a 17-year tenor, as well as a \$60 million concessional financing package with a tenor of up to 21 years. This project is the largest syndicated renewable project financing transaction among ASEAN countries to date.

ADB structured its lending as an A/B Loan to encourage commercial banks to co-finance the Monsoon project. Under this structure, ADB acts as the lender-of-record under its direct A Loan and the B Loan, the latter of which is funded by the participating commercial banks – Sumitomo Mitsui Banking Corporation, Singapore Branch and Siam Commercial Bank. This structure ensures that, while the commercial banks are still exposed to the credit risk of the project, they indirectly benefit from the same protections available to ADB under the financing arrangements. A/B Loan structures have a long and successful history of use among multilaterals and can be attractive to commercial banks in offering additional comfort with respect to political and currency risks.

A Roadmap for the Future

The Monsoon Wind Project has shown that it is possible to structure a bankable cross-border project of significant scale and complexity. The structure and documentation put in place to support the financing creates a compelling blueprint for future deals of its kind. There are plenty of reasons to believe that there will be many projects to follow in its footsteps.

Promisingly, beyond the outlook for Vietnam and Lao PDR, the Monsoon Wind Project is a hopeful signal that energy transition in Asia is gathering pace. It is also an important lesson that achieving a more connected grid in Asia is a key aspect of the fight against the climate crisis, and that strong regional cooperation is critical to unlocking that potential.