



UPDATE

FUTURE OF WIND ENERGY IN VIETNAM

Vietnam has an encouraging opportunity to move away from its reliance on foreign coal and develop its own modern renewable energy system free from pollution of its air, waterways, and agricultural land. Over the past few years, steps have been taken to implement a system primarily run on renewables. While more attractive incentives and regulations are still needed, the rich potential for clean energy is enough to remain hopeful of a gradual transition to a system fueled by abundant renewable energy sources.

Sparked by political and economic reforms under Đổi Mới in 1986, Vietnam has experienced a steady shift from one of the world's most impoverished nations to a low-middle class country. Since then, Vietnam has maintained its position as one of the fastest growing economies in the world. In the first quarter of 2018, Vietnam saw a 7.38 percent increase in the GDP, outperforming most of its Southeast Asian neighbors¹ and exceeding the government's annual target of 6.7 percent². According to *The Economist*, Vietnam is expected to reach above a 6 percent increase in 2018³. Viet Capital Securities forecasts a 6.8 percent increase⁴. At the same time, the demand for energy to support the expanding infrastructure has increased almost twice as fast as the GDP⁵. In 2016, 99 percent of the population used electricity as their main source of lighting, up from 14 percent in 1993⁶. More specifically, from 2011 to 2016, the demand for electricity consumption grew approximately 11 percent annually. Given the forecast of continued development in Vietnam, the energy demand will likely continue to increase over the next 15 years.

To address the rapidly rising demand for electricity, the Vietnamese government has introduced several modest policies and plans to attract investment to the energy sector. While these policies have addressed the growing industry, a stronger legal and regulatory framework along with more competitive incentives are still needed.

1. Current Energy Sources in Vietnam

At the moment, Vietnam is powering the majority of its economic growth on fossil fuels (coal and gas). What's more, Vietnam's Power Development Plan (**PDP**) outlines an increased reliance on fossil fuels. In 2015, Vietnam had a total installed capacity of 33.45 percent in coal energy sources⁷. According to the PDP, by 2030, coal is projected to provide over half of the total electricity, making it the primary source for electricity production within the country.⁸ With limited domestic coal and gas resources, Vietnam's fossil import dependency will necessarily increase. In 2017, the demand for imported coal was at 11.7 million tons. By 2030, the PDP estimates that the demand will increase to 102.1 million. Although renewable energy trends show positive mobility, the energy source is forecasted to account for only 11 percent of the total installed power by 2030⁹. According to the Vietnam Energy Association, if the country does not increase the share of renewable energy in the sector, the proportion of energy that Vietnam will need to import by 2030 will rise from 3 percent of primary energy demand to as much as 44 percent, instead of the targeted 24 percent. This substantial reliance on importation exposes the energy security of the nation. As such, there is a significant need to tap into

¹ 'Vietnam's economy expands more than 7% in first quarter', *Bloomberg*, 29/03/2018. Available at <www.bloomberg.com/news/articles/2018-03-29/vietnam-s-economy-expands-more-than-7-in-first-quarter>.

² 'Vietnam's economy expands 7.38%, best rate in a decade', *Business Times*, 30/03/2018. Available at <www.businesstimes.com.sg/government-economy/vietnams-economy-expands-738-best-rate-in-a-decade>.

³ 'The fastest growing and shrinking economies in 2018', *Economist*, 01/05/2018. Available at <www.economist.com/graphic-detail/2018/01/05/the-fastest-growing-and-shrinking-economies-in-2018>.

⁴ Note 2. <https://www.businesstimes.com.sg/government-economy/vietnams-economy-expands-738-best-rate-in-a-decade>

⁵ 'General overview of Vietnam's Energy Situation', *Energypedia*. Available at <http://energypedia.info/wiki/Vietnam_Energy_Situation#General_Overview_of_Viet_Nam.27s_Energy_Situation>.

⁶ 'Overview', *World Bank*. Available at <<http://www.worldbank.org/en/country/vietnam/overview>>.

⁷ Decision No. 1028/QĐ-TTĐ, on the approval of the National Power Development Master Plan for the 2011-2020 Period with the Vision to 2030, and Decision No. 428/QĐ-TTĐ on the approval of the Revised National Power Development Master Plan for the 2011-2020 Period with the Vision to 2030.

⁸ Revised Power Development Plan VII (**PDP 7**), released in 2017.

⁹ PDP 7



this potential for renewable energy that is presently being largely neglected.

2. Wind Energy Benefits

It is widely accepted that renewable energy is a healthy energy source for the environment, through minimised air pollution and reduced greenhouse gas emissions. Additionally, wind energy provides several benefits that support the transition to clean fuel sources, such as enhanced energy security, creation of domestic jobs, and significant cost benefits.

2.1 Enhanced Energy Security

One of the most attractive benefits of wind energy is the enhanced energy security it provides. Because of the indigenous nature of the source, the local economy is insulated from the volatility associated with imported fuel prices and other unpredictable factors associated with importation of energy sources.

2.2 Sustainability

Wind energy is sustainable. Wind is generated by the sun's heating of the atmosphere, the rotation of the earth, and the earth's surface irregularities. Therefore, so long as the sun shines and the wind blows, the energy produced can be channeled to send power across the grid.

2.3 Domestic Jobs and Industries

A huge benefit is the development of local industries and the creation of domestic jobs. Based on the industry's long supply chain, the sector has the potential to create a significant number of local jobs. Currently, the global wind industry currently employs about 1.15 million people worldwide¹⁰.

2.4 Attractive to International Investment

In 2017 alone, 107 billion dollars were invested globally into the industry. In Vietnam, foreign investors have

turned their attention towards the nation's wind energy sector over the past several years. International investment into Vietnam is undoubtedly a major advantage for the continued growth of the economy.

2.5 Cost Effective Option

Wind energy is one of the lowest-priced renewable energy technologies available today. At four-six US cents per kilowatt hour (**kWh**) (depending on the wind resource and project financing), the low cost serves as a major benefit.

3. On the Global Scale

Over the past several years, wind energy has become an important renewable energy source both domestically and worldwide. In 2016, over 54 gigawatts (**GW**) of wind power were installed globally. According to a recent report by the Global Trade Association, the cumulative global capacity of wind power grew by more than 12 percent in 2017, to reach a capacity of 486.8 GW worldwide¹¹.

Within its borders, Vietnam's abundant potential for wind energy is just beginning to be exploited. Over 3,000 kilometres (**km**) of coastline coupled with the monsoonal climate make the country an ideal candidate for wind energy development. In the Department of Commerce's Renewable Energy Top Markets for United States Exports published in 2016, Vietnam wind power generation market ranks number 28. The country is considered to have an unrivaled supply of wind resources in Southeast Asia. The German International Agency estimates Vietnam's wind energy potential at 10 GW, while the World Bank Wind Atlas offers a more optimistic estimate of 24 GW. Nevertheless, the Vietnamese government has acknowledged this large potential in the PDP by targeting wind energy production to reach 800 megawatts (**MW**) by 2020 and 6,000 MW by 2030¹². While these numbers are attainable, legal and regulatory

¹⁰ | RENA: Renewable Energy and Jobs- Annual Review 2018

¹¹ 'Global wind power capacity to surpass 800 GW by 2021'. Available at <www.climateaction.org/news/global-wind-power-capacity-to-surpass-800-gw-by-2021>

¹² National Power Development Plan (PDP) VII (revised).



barriers need to be broken in order to facilitate such vast development.

The first wind farm in Vietnam, the 24 MW Phu Lac plant, began operations in 2016 in Binh Thuan province. As of June 2018, 7 wind farms have been installed in Vietnam with a total capacity of 189.2 MW¹³. Over 40 additional wind power projects with a total capacity of 5,000 MW have been registered, although only 3 projects, with a total of 50 MW, have been added to the national grid. In an attempt to grow this number, provincial authorities, under the approval of the government, have offered various incentives for investors¹⁴. These incentives include the waiver of land lease fees for the project's lifetime, corporate income tax (CIT) exemption for the first four years, 10% CIT for the next nine years, and waiver of import tax for fixed assets in renewable projects. Additionally, such regional authorities have called on the Ministry of Industry and Trade (MoIT) to review and shorten the evaluation time for a project's basic design, along with a request to raise the feed-in tariff.

4. Recent Progress

In June 2018, the Global Wind Energy Council held its first ever Vietnam Wind Power conference in Ha Noi, between German and Danish embassies and the Vietnamese government, to promote progress in the field. During the seminar, the Global Wind Energy Council recommended the abolishment of major regulatory barriers in the sector to ease the investment process. Additionally, the foreign embassies suggested the creation of a National Wind Power Association.

The most important recent change made in the industry is the increased feed-in tariffs (FiT). According to Decision No. 39/2018/QD-TTg issued on 10 September 2018, the FiT for wind energy projects has been increased from US cents 7.8/kWh to US cents 8.5/kWh for onshore wind power projects and US cents 9.8/kWh for offshore wind power projects. This increase, effective as of 1 November 2018, is expected to have a positive impact

on the wind energy industry by providing a more commercially viable FiT for investors and developers in the Vietnamese market. Existing projects will be eligible for the new tariff for the duration of their power purchase agreement.

5. Moving Forward

In order to create long-term, sustainable development in the field, there are several key changes that should be implemented by the Vietnamese government.

5.1 Government Transparency

Under the current law, the Vietnamese government strictly regulates the retail price of electricity, pursuant to recommendation by the MOIT and approval by the Prime Minister. However, Vietnam Electricity (EVN) has absolute discretion to increase or decrease the price within a margin of up to 5 percent, twice a year without seeking approval from MOIT or the Prime Minister when input parameters, such as fuel prices or foreign exchange rates, change significantly¹⁵. This creates a great deal of uncertainty for investors in the sector. To encourage foreign investment in the field, more transparency in electricity rate forecasting is needed.

Additionally, the legal framework is unstable, and the regulatory environment is largely underdeveloped. Administrative burdens for investors, through national or provincial master plan requirements, inhibit investment and development significantly. Additionally, some projects may also require the approval of the Prime Minister or the MOIT before moving forward.

5.2 Direct Power Purchase Agreement

As it stands, the current Power Purchase Agreement (PPA) is comparatively short when compared to PPAs used in other conventional power projects, and fails to sufficiently address a number of key issues that are important to foreign investors. Under Vietnam's PPA, EVN is the sole oftaker and, although required to purchase all electricity generated by the project, it is not

¹³ "Vietnam advised to develop wind power" *Vietnam Investment Review*, 08/06/2018. Available at <www.vir.com.vn/vietnam-advised-to-develop-wind-power-59940.html>.

¹⁴ "Ninh Thuan aspires to be Vietnam's heart of green energy", *Vietnam Investment Review*, 21/06/2018. Available at <www.vir.com.vn/ninh-thuan-aspires-to-be-vietnams-heart-of-green-energy-60351.html>.

¹⁵ <https://www.export.gov/article?id=Vietnam-Power-Generation>



required to pay the tariff in the event of overhaul or maintenance of the electricity grid. There are few limitations to these interruptions and there are no “take or pay” obligations. This is a huge deterrent for foreign investors, based on the lack of power distribution and control over sector.

Experts in the field have suggested the need for a Standardised Commercial PPA, whereby industrial energy buyers can purchase directly from energy producers, rather than using EVN as a middle-man. While Circular 16 has outlined the new model PPA, nothing at this time has been rolled out.

6. Conclusion

Vietnam’s increasing demand for energy and large wind energy potential have caused many investors to turn their attention to Vietnam in the past few years. Now with a more bankable FiT and consequential increase in security for banks and investors, it is expected that the industry will open up and many of these projects may now be realised.

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