

## Ex-Ante Evaluation (for Japanese ODA Loan)

Private Sector Investment Finance Division,  
Private Sector Partnership and Finance Department, JICA

### 1. Name of the Project

Country: Socialist Republic of Viet Nam

Name of the Project: Quang Tri Province Onshore Wind Power Project

Loan Agreement: May 21, 2021

Borrowers (3): Lien Lap Wind Power Joint Stock Company

Phong Nguyen Wind Power Joint Stock Company

Phong Huy Wind Power Joint Stock Company

### 2. Background and Necessity of the Project

#### 1. Development Relevance of the Project

(1) Current State and Issues of the Electricity Sector in Viet Nam and the Project's relevance to the Development Policies of the Vietnamese Government. Viet Nam has been experiencing robust economic growth, with an average annual GDP growth of 7.0% for the last three years for which data are available (2017-19). In parallel, annual power demand has been growing 9.0% on average during the same period. The Ministry of Industry and Trade projects that it will post an 8-8.5% increase from 2020 to 2025. Strong power demand is expected to continue. The Resolution of the Politburo on Orientations of the Viet Nam's National Energy Development Strategy of February 2020 aims to raise the installed generation capacity from 49 GW at the end of 2018 to 125-130 GW by 2030, an increase of more than 150%.

In the Nationally Determined Contribution (NDC) submitted to the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change in 2015, the Vietnamese government set out the target of reducing greenhouse gas emissions by 8% by 2030 compared to the base case (business-as-usual) scenario. Specific measures to this include the introduction of renewable energy sources ("renewables") to increase power supply and address climate change. At the same time, the Vietnamese government aims to supply 15-20% of the 2030 target of 125-130 GW from renewables. Of this renewable portion, the government plans to supply 6,000 MW (about 5% of the projected installed capacity in 2030) from wind power, according to the revised Seventh Power Development Plan (PDP VII). The country intends to take advantage of rich wind power resources in its mountainous regions and along its shoreline.

In Viet Nam's electricity sector, Vietnam Electricity (EVN), a state-owned power corporation, transmits and distributes power and continues to play a key role in the generation segment as well. However, recent years have seen the participation of domestic and foreign private businesses, chiefly in photovoltaic generation as independent power producers (IPPs), under a long-term power purchase agreement (PPA) in which EVN serves as the off-taker. To promote wind power generation by mobilizing private funds, the Vietnamese government introduced a feed-in tariff (FIT) scheme in 2018 in accordance with the Prime Minister Decision No. 39. Under the scheme, the FIT is set at 8.5 cent/kWh for onshore wind power producers who have already started operations or will do so by November 2021. However, the inadequate mobilization of private funds means a low

installed capacity of wind farms. According to the Ministry of Industry and Trade, the capacity of these farms that were operating as of September 2020 was 363 MW. Two major factors were involved in this low installed capacity: one is that only a few local firms have business expertise in wind power generation, which is more complex than photovoltaic generation in terms of construction work and operation and management (O&M), the other factor is that the risks involved in standard PPAs in Vietnam (unexpected supply-demand adjustments, fickle systems, etc.) impede foreign private banks from providing financing in the Vietnamese electricity sector (even photovoltaic IPP projects, in most cases, involve corporate finance through local sponsors rather than project finance).

The Project will construct and operate wind farms in Quang Tri Province in central Viet Nam to address some of the challenges facing wind power development and climate change in the country. It is identified as a priority project in the revised PDP VII.

## (2) Relevance to Japan's and JICA's Assistance Policies

The JICA Country Analysis Paper for the Socialist Republic of Viet Nam (June 2020) stresses the need to leverage Private-Sector Investment Finance for assistance in the country's renewables sector in order to address climate change and increase the country's power supply capacity. Japan's Country Assistance Policy for the Socialist Republic of Viet Nam (December 2017) identifies *Promotion of Economic Growth and Strengthening International Competitiveness* and *Response to Fragility* as two of the priority areas. Along these lines, JICA has implemented many technical cooperation projects, and ODA loan activities such as the Energy Efficiency and Renewable Energy Promoting Project and the Support Program to Respond to Climate Change. The Project is consistent with these analyses, policies, and achievements. The Project will help encourage green investments by corporations within the ASEAN region. It will also contribute to the Initiative on Overseas Loan and Investment for ASEAN, which was announced by then Prime Minister Shinzo Abe at the Japan-ASEAN Summit Meeting in November 2019. In addition, the Project will support the pursuit of economic prosperity as called for in the Vision for a Free and Open Indo-Pacific in that it will encourage the country to promote self-reliant development that takes advantage of its domestic energy resources.

## 2. Necessity of Assistance with Private-Sector Investment Finance

Since there have only been a few precedents for private-sector wind power generation projects, either through Japanese or local companies, in the field of renewable energy in Vietnam, this Project is expected to promote the replication of similar private-led projects. As it stands, the Vietnamese government's policy to restrict government guarantees amid growing public debt and country risk considerations makes it difficult for ordinary private financial institutions alone to extend long-term loans under a project finance scheme. This state of affairs highlights the need to provide assistance through Private-Sector Investment Finance.

## 3. Project Description

(1) Project Objective

The Project is designed to help meet the strong power demand in the Socialist Republic of Viet Nam with renewables by constructing onshore wind farms.

(2) Project Site / Target Area

Quang Tri Province, the Socialist Republic of Viet Nam

(3) Project Components

The Project's total capacity is 144MW along with transmission lines, substations, and other related facilities, in three project sites and supply power thus generated to the grids under a 20-year power purchase agreement (PPA) with EVN.

(4) Total Project Cost

250 million USD

(5) Schedule

May 2020: Construction initiated

September 2021: Construction completed

(6) Project Implementation Structure

1) Borrowers (3): Lien Lap Wind Power Joint Stock Company, Phong Nguyen Wind Power Joint Stock Company, and Phong Huy Wind Power Joint Stock Company

2) Entity Executing the Projects: Same as above

3) Operation and Maintenance Entity: Vestas for WTG part and Bao Lam Energy Joint Stock Company for BOP part

(7) Cooperation and Sharing of Roles with Other Donors

1) Japan's Assistance Activities

Related ODA undertakings include the Energy Efficiency and Renewable Energy Promoting Project (L/A signed in November 2009, totaling 4,682 million yen) and the Support Program to Respond to Climate Change (for Viet Nam) (VII) (L/A signed in January 2017, totaling 10 billion yen).

2) Other Donors' Assistance Activities

- The ADB has previously financed three photovoltaic generation projects in Viet Nam. (JICA participated in all these projects through the Leading Asia's Private Infrastructure Fund (LEAP) within the ADB.) Co-financing with the ADB will allow for appropriate risk control in implementing the Project.

- The German aid agency GIZ helped design the wind power FIT system applicable to the Project.

(8) Environmental and Social Consideration / Cross-Sectoral Issues / Gender Category

1) Environmental and Social Consideration

(i) Category: B

(ii) Reason for Categorization: The Project's potential adverse impacts on the environment are deemed insignificant as defined by the JICA Guidelines for Environmental and Social Considerations of April 2010 ("the JICA Guidelines"), in terms of sector description, project description, and site description.

(iii) Environmental Permit: The permit was obtained after the completion of an environmental

impact assessment (EIA) as required by Vietnamese law.

(iv) Anti-Pollution Measures: The Project will take measures to mitigate the impacts on air quality, water quality, noise levels, and solid waste during the construction and operation phases so as to meet domestic and international environmental standards.

(v) Natural Environment: The project area is not situated in or near any sensitive areas such as a national park. No flight routes of migratory birds cut across the area or its surroundings. Measures to prevent bird collision will be put in place. Therefore, the adverse impact on the natural environment is expected to be minimal.

(vi) Social Environment: The Project involves the acquisition of land (totaling around 63 hectares, including land for turbines, transmission lines and towers and internal roads). The land acquisition and corresponding support for livelihood restoration will be implemented in accordance with Vietnamese laws and the JICA Guidelines.. There will be no involuntary resettlement. No objection was raised against the implementation of the Project during the public consultation process.

(vii) Other/Monitoring: The EPC and O&M contractors will monitor the impact on air quality, noise levels, water quality, and solid waste during the construction and operation phases in accordance to the environmental monitoring plan.

2) Promotion of Poverty Reduction: None in particular

3) Promotion of Social Development: None in particular

4) Category of Gender:GI (Gender mainstreaming needs assessment and analysis project)

5) Other Important Issues: None in particular

#### 4. Targeted Outcomes

##### (1) Quantitative Effects

Operation and Effect Indicators (3 sites in total)

Indicator	Baseline	Target (2 years after loan disbursement completion)
CO <sub>2</sub> emissions reductions (ton/year)	0	143,190

##### (2) Qualitative Effects

A better living environment for communities and local economic stimulation due to an improvement in the power supply and demand situation; climate change mitigation; encouragement for commercial banks to support similar projects through project finance; expansion of the renewables market for Japanese companies.

#### 5. Lessons Learned from Past Projects

##### (1) Evaluation Findings of Similar Past Projects

The ex-post evaluation of a similar past project in Mongolia noted that aging grid facilities failed to meet increasing demand. This resulted in an inadequate capacity of the existing facilities upon connection to the Central Energy System which temporarily affected the amount of electricity transmitted. The lesson learned for future projects is that it will be useful to analyze the grid capacity via a feasibility study or similar study and take such analyses into account during project feasibility assessment.

(2) Lessons for the Project:

For this Project, the capability of the local grid to handle the installed capacity of the Project as well as future load capacity was examined and reviewed with the help of technical consultants and confirmed by State authorities. The resulting study showed that the local grid has the capability to receive power not only from the Project but also neighboring power plants.

## **6. Evaluation Results**

The Project is relevant to some of the issues facing Viet Nam as well as the country's development policies. It is also consistent with Japan's and JICA's assistance policies. Additionally, the Project will contribute to three of the SDGs: Goal 7 (clean energy), Goal 13 (climate action), and Goal 17 (partnership). Therefore, it is highly necessary for JICA to support the implementation of the Project.

## **8. Plan for Future Evaluation**

(1) Indicators to be Used

As shown in Section 4 of this evaluation sheet.

(2) Timing:

An ex-post evaluation will be conducted two years after loan disbursement completion.

End