

Ex-Ante Evaluation (for Private Sector Investment Finance)

**Private Sector Investment Finance Division 1,
Private Sector Partnership and Finance Department,
Japan International Cooperation Agency (JICA)**

1. Name of the Project

- (1) Country: Socialist Republic of Vietnam (hereinafter referred to as “Vietnam”)
- (2) Project Site/Target Region: Ninh Thuan Province (currently Khanh Hoa Province)
- (3) Project Name: Onshore Wind Power Project in Ninh Thuan Province
- (4) Date of L/A Signing: December 20, 2022

2. Background and Necessity of the Project

- (1) Current Status and Issues of the Power Sector /Area and the Priority of the Project in Vietnam

Vietnam has achieved robust economic growth, with an average GDP growth rate of 7.0% over the past three years (2017–2019) (International Monetary Fund, 2020). Consequently, electricity demand during this period recorded a high average annual growth rate of 9.0% (Ministry of Planning and Investment General Statistics Office, 2020). The "Resolution on Guidelines for the National Energy Development Strategy" (2020) issued by the Political Bureau of the Communist Party of Vietnam sets a target of increasing power generation capacity from 69 GW at the end of 2020 to 125–130 GW by 2030. Due to the impact of COVID-19, the economic growth rate in 2020 stagnated at 2.9%, and electricity demand growth also remained at 2.9%. However, the draft of the 8th National Power Development Plan (2021) projects electricity demand growth for 2020–2030 at 9.1% in the base case, and electricity demand is expected to recover in tandem with the recovery of economic growth. In fact, electricity supply in August 2022 recorded a significant year-on-year increase of 10.8%.

Regarding climate change measures, in its “Nationally Determined Contribution (NDC)” submitted to the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change in 2015, the Vietnamese government set a target of reducing greenhouse gas emissions by 9% by 2030 compared to a baseline scenario without climate change measures, and identified the introduction of renewable energy (hereinafter “RE”) as a

specific policy measure. To balance increased electricity supply with climate change mitigation, the Vietnamese government aims for renewable energy sources to account for approximately 15–20% of the 125–130 GW of power generation capacity projected for 2030. Specifically, regarding wind power—which utilizes the abundant wind resources found in the country’s mountainous regions and along its coastline—the government has set a policy in the revised 7th National Power Development Plan to introduce 6,000 MW (approximately 5% of the 2030 generation capacity) by 2030.

In Vietnam’s power sector, the state-owned Vietnam Electricity Group (EVN) is responsible for transmission and distribution, and while EVN remains the primary player in the power generation sector, in recent years, IPP projects by domestic and foreign private operators—primarily solar power—have been introduced under long-term power purchase agreements (PPAs) with EVN as the off-taker. Regarding wind power, the Vietnamese government implemented Prime Ministerial Decision No. 39 in 2018 as a concrete promotional measure, introducing a feed-in tariff (FIT) system. As a result of setting the fixed purchase price for onshore wind power plants commencing operation by November 2021 at 8.5 cents/kWh for onshore wind power plants commencing operations by November 2021, aiming to promote wind power projects through the mobilization of private capital. As a result, 4,000 MW of wind power plants had reached commercial operation by the end of 2021. However, because wind power involves more complex construction and maintenance compared to solar power, there are a limited number of local companies with the necessary expertise. Additionally, foreign private banks remain cautious about arranging financing for the Vietnamese power sector due to risks associated with supply-demand adjustments and regulatory changes under the country’s standard PPAs (Even for solar IPP projects, with a few exceptions, financing tends to be limited to corporate loans for local sponsor companies rather than project financing backed by domestic capital), the mobilization of private capital has not progressed sufficiently.

This project aims to address these challenges related to power source development and climate change countermeasures by constructing and operating a wind power plant in Ninh Thuan Province (currently Khanh Hoa Province), southern Vietnam, and is positioned as a high-priority project in the aforementioned revised 7th National Power Development Plan.

(2) Japan’s and JICA’s Cooperation Policy and Operations in the Power

Sector

The Country Development Cooperation Policy for the Socialist Republic of Vietnam (December 2017) identifies as priority areas the promotion of Vietnam's growth and competitiveness, as well as addressing vulnerabilities, through the stable supply of energy. The JICA Country Analysis Paper for the Socialist Republic of Vietnam (June 2020) also analyzes that it is important to actively utilize overseas investment and financing to support the renewable energy sector, with the aim of enhancing power supply capacity and addressing climate change. To date, JICA has supported the introduction of renewable energy in Vietnam through overseas investment and financing projects such as the "Quang Tri Province Onshore Wind Power Project" and the "Phu Yen Province Solar Power Project" (a subproject of the Asian Infrastructure Partnership Trust Fund established with the Asian Development Bank (hereinafter "ADB")), as well as through the yen loan project "Program for Promoting Energy Conservation and Renewable Energy and Supporting Climate Change Measures."

Furthermore, this project promotes green investment by businesses within the ASEAN region and contributes to the ASEAN Overseas Investment and Financing Initiative announced by then-Prime Minister Abe at the Japan-ASEAN Summit in November 2019. Additionally, from the perspective of promoting self-reliant development through the utilization of domestic energy resources, this project contributes to the pursuit of economic prosperity under the "Free and Open Indo-Pacific" vision.

(3) Other Donors' Activities

The Asian Development Bank (ADB) and other institutions are providing financial support for wind power projects in Vietnam.

3. Project Description

(1) Project Description

① Project Objective

This project aims to increase the supply of electricity generated from renewable energy in Vietnam through the construction and operation of a wind power plant and related facilities in Ninh Thuan Province, southern Vietnam, thereby contributing to sustainable economic growth and the reduction of greenhouse gas emissions.

② Project Components

The project involves the construction and operation of a wind power facility

with a rated capacity of 88 MW, along with related facilities such as power transmission and transformation equipment. Electricity generated by these facilities will be supplied to the power grid under a 20-year power purchase agreement with the Vietnam Electricity Corporation.

③ Beneficiaries of this project (target group)

Vietnam

(2) Estimated Project Cost: 152 million US Dollar (Of which 25 million US Dollar are financed by JICA)

(3) Schedule:

Completion in September 2021

(4) Project Implementation Structure

1) Borrower: BIM Wind Power Joint Stock Company

2) Guarantor: None

(5) Collaboration and Sharing of Roles with Other Donors: Co-financing with the ADB.

(6) Environmental and Social Considerations

① Category Classification: B

② Basis for Category Classification: Under the “Japan International Cooperation Agency Guidelines on Environmental and Social Considerations” (promulgated in April 2010), this project is deemed to have no significant adverse environmental impacts, taking into account sectoral, project, and regional characteristics.

③ Environmental Permits and Approvals: Although an Environmental Impact Assessment (EIA) is not required under Vietnamese domestic law, the preparation of an Environmental Conservation Plan is mandatory, and it was approved on March 25, 2021. All environmental permits and approvals required under domestic law have been obtained.

④ Pollution Control: Mitigation measures will be implemented to ensure compliance with Vietnamese national standards regarding impacts on air quality, water quality, and noise levels during construction and operation, through appropriate management of equipment and materials, as well as restrictions on generator operation. For waste management, measures such as proper collection and disposal by licensed contractors will be implemented. Although shadow flicker will occur during operation, this is mitigated through periodic turbine shutdowns and the planting of tall trees.

⑤ Natural Environment: While the project site partially overlaps with an

area designated as an Alliance for Zero Extinction (AZE) site, the EIA survey confirmed that *Cycas pachypoda* (a Vietnamese endemic cycad), the species cited as the reason for the AZE designation, is not present within the project site. Therefore, adverse impacts on the natural environment are expected to be minimal.

- ⑥ Social Environment: Since this project is being implemented within salt fields owned by the sponsor (BIM Group), there will be no land acquisition or resettlement of residents.
- ⑦ Other/Monitoring: During construction, the equipment delivery and installation contractor and the civil engineering contractor monitored air quality, noise, water quality, and waste. During operation, the borrower will monitor noise, water quality, waste, and shadow flicker. In addition, ecosystem monitoring by qualified personnel will be conducted for two years after completion.

(7) Cross-Sectoral Issues: None

(8) Gender Category: GI(S) (Gender-Integrated Project)

<Activity Details/Reason for Classification>

In addition to setting targets for the employment of a certain number of female employees (at least 8 out of 38 total) and female engineers and managers (at least 3), indicators aligned with a gender perspective have been established, such as the utilization of companies owned or managed by women (at least 1 company) and the implementation of sexual harassment prevention training for employees (at least 90%). Therefore, this project is classified as a Gender-Integrated Project.

(9) Other Important Issues: None

4. Project Impact

(1) Quantitative Effects

1) Outcomes (Operational and Effect Indicators)

Indicator	Baseline	Target Value (2023) (2 years after project completion)
Maximum Output (MW)	0	88
Electricity Generation at Transmission Point (GWh/year)	0	251
Capacity utilization rate (%)	0	36.5

CO ₂ Emission Reduction (t/year)	0	124,029
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(2) Qualitative Effects

Diversification of power sources; promotion of private investment in renewable energy and related sectors

5. External Factors and Risk Control

None

6. Lessons Learned from Past Similar Projects

Lessons learned from past similar renewable energy projects indicate that, due to aging power grid infrastructure and a situation where capacity expansion could not keep pace with rapidly increasing demand, existing grid capacity proved insufficient after grid connection to the central power system, temporarily affecting power transmission volumes. Consequently, the lesson learned is that it is useful to conduct analyses in advance—such as through feasibility studies—and incorporate these findings into the assessment of project viability for future projects.

For this project, we carefully examined the capacity of power plants scheduled to connect to the regional grid in 2030, as well as the capacity of the grid infrastructure, including a review by technical advisors. We confirmed that the grid can accommodate not only this project but also the power supply from surrounding power plants.

7. Evaluation Results

This project aligns with the host country's development challenges and policies, as well as Japan's and JICA's cooperation policies and analyses. By promoting the diversification of renewable energy sources through collaboration with private-sector operators and the ADB, it is expected to contribute to SDG Goals 7 (Energy), 13 (Climate Action), and 17 (Partnerships). Furthermore, as it facilitates the entry of private and foreign companies into the host country's renewable energy sector, there is a strong need for support through overseas investment and financing.

8. Plan for Future Evaluation

(1) Indicators to Be Used in Future Evaluations

As described in Section 4.

(2) Future Evaluation Schedule

Two years after project commencement: Ex-post evaluation

End