

REPORT

On the role of the energy sector in local socio-economic development of Binh Thuan province, and proposals to international development organizations on providing support for the energy sector of Binh Thuan

1. The important role of the energy sector in local socio-economic development of Binh Thuan province

In 1992, Binh Thuan had 44/111 communes, wards and townships (39.6%) with access to electricity. The total number of households electrified was about 57,158 out of 163,000 households, accounting for 35%. Sales electricity and per capita consumption in the province was 24.45 million kWh and 28.47 kWh/person respectively. Up to now, after 30 years of re-establishing and developing, 124/124 communes, wards and townships are now having access to electricity (100%) and the number of electrified household is 341,017/341,795 households (99.77%); in which: the number of rural households having access to electricity is 205,935 out of 206,568 households (99.69%). Sales electricity in the province has reached 2,471 million kWh.

In terms of the power distribution network, Binh Thuan currently has three (3) 220/110 kV transformer stations (1,500 MVA) and twelve (12) 110/22 kV substations (1,179 MVA), 677 km of 110 kV transmission lines, 6,655 km of 22kV and 12.7 kV medium-voltage lines, and 27,441 22/0.4 kV and 12.7/0.2 kV substations (2,801 MVA), 3,422 km of 0.4 kV and 0.2 kV low voltage lines. In the past years, the deployment of investment and construction of power grid projects and works has helped to fully meet the power demand for important loads, production loads and local people's daily life; meeting the power demand in the dry season; and securing the power supply for major holidays and important local events. The target of improving the reliability of the power supply and shortening the time to access electricity has also been well performed and achieved. Regarding the power supply in Phu Quy island district, the safe, continuous and stable around-the-clock power supply for Phu Quy district has also been secured (by the availability of 10 MW diesel power plant, 6 MW wind power and 0.8 MWp solar power on the island), with the electricity output generated to the grid in 2021 reaching 24.193 million kWh.

In terms of power production, Binh Thuan is one of the localities having the highest potential of wind and solar energy in the country, featured by the average number of wind hours and sunshine hours higher than those in the South, and high and stable wind speed and solar irradiation which are very suitable and favorable for wind and solar power development. With those advantages, the Politburo has issued the Conclusion No. 76 -KL/TW dated 28/11/2013 identifying Binh Thuan as a national-level energy center. The Provincial Party Congress's Resolution has also set forth the task of untapping energy potential, creating favorable conditions and actively promoting the implementation of energy projects to make Binh Thuan soon becoming a national-level energy center.

Having determined and been well aware of the importance of renewable energy sources and in order to well implement the conclusion of the Politburo and the Resolution of the Provincial Party Congress, Binh Thuan has elaborated the provincial Wind and Solar Power Development Plan to 2020 with an outlook to 2030 in order to identify potential areas for wind and solar power development, forming legal basis and favorable conditions for investors to effectively capitalize on the province's resources, develop the local industries and contribute to ensuring the national energy security, specifically:

In the field of wind power, since 2010, Binh Thuan has developed its provincial wind power development plan for the period up to 2020, with a vision to 2030 and approved by the Ministry of Industry and Trade in 2012. Accordingly, the cumulative installed capacity is expected to reach about 2,500 MW by 2030, with a corresponding wind power output of 5,475 million kWh.

For solar power, Binh Thuan has also developed and submitted its provincial solar power development plan for the period to 2020 with a vision to 2030 to the Ministry of Industry and Trade for appraisal, which set the province's target of developing solar power by 2030 with a total installed capacity of approximately 6,199 MWp, with a corresponding output of about 9,769 million kWh of electricity.

The total capacity of the approved power sources in Binh Thuan is about 13,700 MW. Up to now, Binh Thuan has 48 power plants under operation with a total capacity of 6,520 MW, including:

- Thermal power: 04 thermal (coal-fired) power plants under Vinh Tan Power Center, with total capacity of 4,284 MW (including Vinh Tan 1: 1,240 MW, Vinh Tan 2: 1,244 MW, Vinh Tan 4: 1,200 MW, expanded Vinh Tan 4: 600 MW)

- Hydro power: 07 hydro power plants (819.5 MW);
- Wind power: 10 wind farms with total capacity of 335 MW;
- PV power: 26 solar farms with total capacity of 1,072 MW (1,348 MWp).
- Diesel: 01 diesel-fired power plant in Phu Quy island (10 MW);

The designed power output of 48 power plants in the province is about 31.6 billion kWh/year. Thus, the province's electricity and energy industries have made an important contribution to its socio-economic development and helped ensure the power supply for the southern key economic regions as well as the national energy security.

In addition, Binh Thuan also has some power plants which are under preparation for investment and construction such as: Vinh Tan 3 thermal power plant (1,980 MW) under Vinh Tan Power Center which is under preparation for construction; Son My Power (LNG) Power Center, with a total capacity of 2 plants of 4,500 MW, under preparation for investment and expected to start construction after 2022; one investor who is applying for approval of additional inclusion of Ke Ga LNG-fired power project with a capacity of 3,600 MW to the PDP; and 08 investors registering and proposing offshore wind power projects with a total capacity of 22,200 MW.

Particularly in the field of offshore wind power, the Prime Minister and the Ministry of Industry and Trade have approved the investment policy to allow Enterprize Energy Company to conduct research and survey for Thang Long Offshore Wind Power Project (from Ke Ga cape in Ham Thuan Nam) with the proposed capacity of 3,400 MW. Currently, the investor has completed the formulation of the supplementary power development plan and submitted it to the Ministry of Industry and Trade for appraisal.

2. Proposals to international development organizations for supporting Binh Thuan province's energy sector

In order to contribute to the effective implementation of the Politburo's Resolution No. 55-NQ/TW dated 11/2/2020 on orientations of Viet Nam's National Energy Development Strategy to 2030 with an outlook towards 2045, the Prime Minister's Decision No. 2068/QD-TTg dated 25/11/2015 approving Viet Nam's Renewable Energy Development Strategy to 2030 with an outlook towards 2050, the Resolution of the 14th Binh Thuan's Provincial Party Congress (*in which the Resolution identified the renewable energy and processing industry as one of the three important pillars to be focused on and prioritized development in the 2020-2025 period, in addition to tourism, marine sports and high-tech*

agriculture) and the implementation of the policy on mobilizing social resources for power sources and investments in the province, encouraging and creating favorable conditions for all economic sectors, especially the private sector, to participate in energy development, contributing to ensuring the national energy security and sustainable socio-economic development, Binh Thuan has reported and proposed to the Ministry of Industry and Trade to consider the inclusion of power source and grid projects in the locality into the draft National Power Development Plan for the period 2021-2030 with a vision towards 2045, especially offshore wind power projects with a total capacity of about 25,200 MW which was reported to the Prime Minister for consideration and approval of prioritized power source development projects in the period of 2021 - 2030 with a vision towards 2045 to capitalize on the locality's advantages and potentials, contributing to ensuring national energy security.

From the development perspective and orientations, the local energy industry will actively contribute to ensuring the power supply for Binh Thuan and the southern key economic regions, the national energy security, and sustainable socio-economic development. The energy development must be aligned with the national energy development strategy, in line with the socio-economic development plan and in harmony with the development of other economic sectors of the province to ensure socio-economic effectiveness. In addition, it is necessary to well ensure the conditions of synchronous/adequate infrastructure, especially the infrastructure for connection to the power grid and power transmission to load areas throughout the country, protecting the ecological environment, solving social issues and ensuring the national defense and security.

Regarding the offshore wind power, there are many special requirements for survey, design, procurement (especially big wind turbines, from 9.5 MW/turbine to 15 MW/turbine), processing & fabrication, offshore installation, operation, maintenance, connection to the national power transmission system and financial arrangements, etc. which are much different from those for nearshore and onshore wind power projects and totally different from other forms of renewable energy. Therefore, it is recommended that international development organizations:

- To consider providing financial and technical support for Viet Nam in developing supportive policies and breakthrough mechanisms for offshore wind power in alignment with the Viet Nam Marine Strategy, bidding methods and (survey/investment) investor selection methods, commitments with the Government of Viet Nam on socio-economic development, national

security and defense, electricity price calculation, power purchase agreement and plans for connecting offshore wind power projects to the national grid in accordance with the priority mechanism for pioneering projects, bringing socio-economic benefits, thereby creating an attractive investment environment for subsequent projects.

- Currently, the database related to technical potential of offshore wind in the whole province as well as specific wind data of each ocean area of districts, towns and cities do not have sufficient and reliable information for the locality to identify the potential and specific locations as a basis for orienting, calling and attracting investors for their interest and intention to carry out procedures for investment, construction and development of offshore wind power projects in Binh Thuan province, contributing to effectively exploiting the economic development potential of the province. Therefore, it is kindly requested international development organizations to consider providing financial and technical support to conduct surveys, measure wind speed, collect information and set up offshore wind data sets for Binh Thuan province as a basis for the local identification of potential, specific location for developing offshore wind power projects.

- At the same time, in order to sustainably develop the renewable energy industry in general and the offshore wind power industry in particular, the province is really interested in technology transfer and attraction of large investments in development of supporting industries in order to quickly develop and gradually increase the localization of technical equipment, especially high-tech equipment and source technologies such as large-sized wind turbines and the environmental industry to treat expired renewable energy machines and equipment in order to reuse and recycle in the most efficient manner./.