

Understanding taiwan's offshore wind industry

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Here, Open Access Government speaks to Gwo-shyh Song, Chairman of MMA Global Aqua, and explores the challenges, successes and long term plans for the offshore wind power projects in Taiwan

Can you provide an overview of the current state of the offshore wind industry in Taiwan and its significance in the country's energy transformation?

Taiwan had no experience in offshore wind power development in the past.

The offshore wind power industry includes wind farm developers, who conduct environmental assessments of wind farms, as well as wind turbine system suppliers, marine engineering companies, cable manufacturers, and wind farm operators.

Therefore, the Ministry of Economic Affairs allows 100% foreign ownership to attract foreign investment and gradually increases domestic demand to cultivate local related companies in order to achieve the goal of offshore wind power localization.

Taiwan's offshore wind power development is divided into three stages:

1. Demonstration wind farm
2. Potential site
3. Block development

In January 2013, the Taiwan offshore wind farm demonstration project was opened for bidding; In April 2017, the first phase of Ocean Wind Power's Ocean Zhunan Wind Farm began commercial operation, becoming the first officially operating offshore wind farm in Taiwan.

In 2018, the government launched a large-scale development of offshore wind power, announced the "Offshore Wind Power Planning Site Capacity Allocation Procedures", and launched the "selection" and "bidding" for offshore wind power.

On April 30, 2018, the selection was completed, with a total of 3,836 MW allocated; on June 22, the same year, the bidding was completed, with a total of 1,664 MW allocated. The total of the selection and bidding is 5.5 GW, which will be completed in stages from 2020 to 2025.

Could you elaborate on the specific policies or incentives that have attracted international developers to invest in Taiwan's offshore wind sector?

The Taiwanese government supports the development of domestic offshore wind power projects through a series of policies, regulations, and investments to achieve the goals of energy diversification, carbon reduction, and energy security. These policies and measures help to attract investment, promote technological innovation, and drive the growth of renewable energy in Taiwan.

In addition to setting relevant policies to increase the share of renewable energy, especially wind energy, the government sets offshore wind power installation capacity targets to encourage investors to participate in projects. It also provides fixed buyout prices or reasonable repurchase prices to ensure the feasibility and return on investment of offshore wind power projects.

Furthermore, the government invests in offshore infrastructure, such as dedicated wind power ports, transportation facilities, and power grids, to support the construction and operation of offshore wind power. In terms of environmental regulation, the government also ensures that offshore wind power projects comply with environmental regulations and requires environmental impact assessments to reduce the potential impact on the ecology and environment.

The Taiwanese government has established the "Offshore Wind Power Demonstration Incentive Regulations" to encourage the development of offshore wind power. The regulations provide financial assistance to companies that install offshore demonstration wind farms. The government will provide up to 50% of the cost of installing demonstration offshore wind turbines.

What are the major challenges and opportunities in meeting Taiwan's localization requirements for offshore wind projects, including "Made in Taiwan" components?

There are the following challenges and opportunities to meet localization requirements:

- a. Costs increased: Localizing the supply chain may increase costs, including production, equipment investment, and labour costs.
- b. Technology transfer: Introducing new technologies or transferring technologies may require time and resources.
- c. Performance quality: Ensuring that locally produced components meet international standards.
- d. Supply chain risk: Reliance on a local supply chain may increase risk, especially in the event of natural disasters or supply chain disruptions.
- e. Job opportunities: Local production will create jobs, helping to boost economic growth and technical training.

- f. Technology development: Conducting technology transfer and research and development has the potential to promote the development of new technologies in Taiwan.
- g. Local industry: Strengthening the development of Taiwan's wind energy industry could help establish a local supply chain and promote the formation of industrial clusters.

Could you share some of the key challenges the developers encountered in offshore wind projects?

The main challenges faced are as follows:

- a. Environmental challenges: Taiwan's typhoons and northeast monsoons create unfavourable conditions for construction.
- b. Localization: Meeting the Taiwanese government's localization requirements, including the use of "Made in Taiwan" components, may present challenges in terms of supply chain management and cost control.
- c. Environmental protection and community opposition: Offshore wind power projects may have an impact on local ecosystems and marine environments, leading to opposition from environmental groups and local communities.
- d. Financial and investment challenges: Offshore wind power projects require significant investment, which may present challenges in terms of financing, risk management, and return on investment.
- e. Talent training difficulties

What is your long-term vision for MMA Global Aqua's role in the offshore wind industry?

Our company can establish long-term partnerships with a portion of the wind power developers to support the development and operation of offshore wind power projects, such as:

- a. Infrastructure design and construction: to understand seabed topography and geomorphology that is essential for the design of wind power infrastructure.
- b. Submarine cable laying: to assist in planning and implementing submarine cable laying to ensure its stable operation.
- c. Environmental impact assessment (EIA): to assess the impact of the project on the marine environment to ensure the sustainability of wind turbine operation.
- d. Regular monitoring and maintenance: to provide regular seabed topography and geomorphology monitoring services to ensure the stability of the wind turbine infrastructure and respond quickly to any changes in topography.

- e. Technology development: to promote our company's research and development of new technologies and methods to improve seabed exploration techniques, and improve accuracy and efficiency.

The above roles can ensure the success and sustainable operation of offshore wind power projects in the marine environment. Through effective cooperation, we can better manage the risks of wind power infrastructure, improve project efficiency, and ensure compliance with environmental standards.

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