Offshore Wind Colloquium Brief

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Current Status and Future of Japan's Offshore Wind Power

SFO°C Solutions for Our Climate
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한국풍력산업협회 Korea Wind Energy Industry Association

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The 2nd Offshore Wind Colloquium, co-hosted by Solutions for Our Climate, the Korea Environment Institute, and the Korea Wind Energy Industry Association, invited President Jin Kato of the Japan Wind Power Association (JWPA) to have a discussion on the status of Japan's offshore wind deployment and future plans. The JWPA has 549 member companies and organizations, including businesses, local governments, and insurance companies.

The Colloquium featured President Jin Kato's presentation on "Japan's Offshore Wind Power System and Progress Status," followed by an open discussion on pre-submitted and on-site questions. The discussion session covered inquiries about Japan's legislative procedures concerning offshore wind laws, the roles of central and local governments, council operation methods, and criteria for bidding evaluations. Although slightly behind countries like the United Kingdom and Denmark where offshore wind power systems and industries have already matured, Japan is the first Asian country to establish the relevant regulatory framework and promote the deployment of offshore wind power.

This paper – Offshore Wind Colloquium Brief – presents a summary of the discussions from the 2nd Colloquium in a question-and-answer format. As the Colloquium focused on the general aspects of Japan's offshore wind, other topics that raise various discussion points, including bidding criteria and the operation methods of councils, will be addressed separately in greater detail in the upcoming colloquium series.

Summary
: Implications of the Introduction and Implementation Progress of Japan's Offshore Wind

1. Japan introduced the *Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities* in 2019, mandating the bidding procedures for selecting project developers. The project sites and developers are selected through the three stages of Promising Zone designation, Promo-

tion Zone designation, and bidding. As of 2023, there are currently 8 Promotion Zones and 10 Promising Zones, with the bidding process completed at three locations.

2. In Japan, the degree of acceptance within local fishing communities is taken into account before selecting potential sites. Prior consultations with local communities take place when selecting Promising Zones. When designating Promotion Zones, public-private councils are established, enabling discussions among the central government, local governments, representatives of the fishing industry, and experts. Public-private councils are run in a transparent manner, with their meetings broadcasted and meeting minutes publicly disclosed.

3. Another distinctive feature of Japan's offshore wind is the emphasis on the role of the local governments. Before the central government designates Promising and Promotion Zones, it receives information about the potential candidate sites from local governments. The local authorities, prior to submitting such information to the central government, undergo agreements with local residents, including fisheries workers.

4. The current bidding criteria in Japan apply equal weights to price competitiveness and project feasibility (implementation capability and ripple effect on the local economy). The bidding criteria can be utilized as an effective policy tool that aligns with the direction and value pursued in the course of renewable energy development.

The "Colloquium for Sustainable Deployment of Offshore Wind Power," jointly hosted and organized by Solutions for Our Climate (SFOC), the Korea Environment Institute (KEI), occasionally involving other relevant organizations, is a monthly platform that covers various topics. It brings together relevant stakeholders to explore strategies for promoting and expanding offshore wind in the Republic of Korea. The Colloquium Brief is a publication that summarizes the content of each colloquium.

Background: Japan's Offshore Wind Regulatory Framework and Objectives

Legal grounds of Japan's offshore wind power

In November 2018, Japan legislated the *Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities* ("*Renewable Energy Sea Area Utilization Act*") to establish a system to promote offshore wind power. Accordingly, a system has been introduced in which the Ministry of Economy, Trade and Industry (METI), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and local governments designate the sites for offshore wind.

Objectives of Japan's offshore wind power

The Japanese government outlines detailed objectives for offshore wind power policies. Through the 1st Vision for Offshore Wind Power Industry (2020), it announced the plan to reach 10GW in bidding for offshore wind by 2030 and expand the capacity to 30-45GW by 2040, including floating offshore wind. In relation to this, Japan, which currently lacks the industrial base for offshore wind power, targets to establish the relevant infrastructure in the next decade and reach 60% of domestic procurement, including generation, maintenance, and decommissioning, by 2040. The 6th Strategic Energy Plan announced in 2021 specifies a target to introduce 5.7GW in offshore wind power as a means of increasing the share of renewable energy generation.

Relevant legal plans

Japan establishes the Strategic Energy Plan every three years. The 6th Strategic Energy Plan announced in 2021 targets the 2030 share of renewables at 36-38%, including 5% generated from wind power. The revised goals are significantly more ambitious than the previous Strategic Energy Plan which outlines the renewable share of 22-24% and wind power of 2%. In alignment with this legal plan, the abovementioned objective to reach 5.7GW in offshore wind power by 2030 was established.

Question 1: How are offshore wind power sites selected in Japan?

In Japan, the Renewable Energy Sea Area Utilization Act regulates the site selection process of offshore wind power, which is similar to the Special Act on the Promotion of Wind Power Generation, or the Special Act on Offshore Wind Power currently being discussed in Korea. Per this act, the Japanese government designates the appropriate sites for offshore wind following the below procedures.

First, local governments submit their opinions and recommendations on potential Promising Zones[1] candidates to the provincial governments (hereinafter referred to as prefectures). Afterwards, the prefectures and the central government jointly select Promising Zones among the candidates and establish a council comprising of fisheries cooperatives and residents to compile and address requests and issues from the local community. As the establishment of a council is required, an area should identify local stakeholders and preemptively reach an agreement for the council establishment for it to be considered as a Promising Zone. Once an area follows such procedures, reaches an agreement with the locals, and meets the Promotion Zone requirements specified in the Renewable Energy Sea Area Utilization Act, the government designates it as a Promotion Zone and selects the developers through bidding. Criteria such as wind conditions, coordination with shipping routes and ports, grid access, impact on fisheries industries, and compliance with other laws are evaluated as requirements to be designated as a Promotion Zone.

Meanwhile, Japan continues to have discussions on adopting a centralized system for Maritime Spatial Planning (MSP), which enables the government to lead the planned utilization of sea areas, instead of local governments. According to the Renewable Energy Institute, a local Japanese think-tank, the developers of most Promising Zone candidates undergo preliminary work to designate their areas as Promising Zones, even before the prefectures provide the information. That is, although the final designation is made by the government, various developers essentially need to take up preliminary requirements in advance, such as identifying potential sites, coordinating with local stakeholders, and researching wind conditions. To address such inefficiency, a centralized system in which the government directly conducts the required investigations and coordination including securing grid, research of sites, protection of the maritime ecosystem, and coexistence with fisheries industries, is garnering attention. Currently, the METI is conducting research to assess the feasibility of introducing such a centralized system.

1 Japan's Promising Zones and Promotions Zones are equivalent to, respectively, the Preliminary Zones (Consideration Zones) and Power Generation Zones, in Korea's Special Act on the Promotion of Wind Power Generation and the Special Act on Offshore Wind Power.

Process of Zone Designation and Project Developer Selection Under Japan's Renewable Energy Sea Area Utilization Act

Local governments (cities, towns, villages) **collect information** and establish agendas.

Provincial governments (prefectures) provide information to the government and **propose candidate sites.**

Promising Zones are designated through discussions with relevant ministries and organizations.

Promising Zones are designated* after the agreement with the council.**

* Designated by the Minister of Economy, Trade and Industry and the Minister of Land, Infrastructure, Transport and Tourism

** Includes the METI and MLIT, fishermen, community residents, etc.

Bidding for project developer selection is conducted*.

* Enforced by the Minister of Economy, Trade and Industry and the Minister of Land, Infrastructure, Transport and Tourism

The Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources is recognized*, and the permission to occupy and use the zones is granted.**

* By the Minister of Economy, Trade and Industry

** By the Minister of Land, Infrastructure, Transport and Tourism

Source: Presentation by the JWPA and reconstruction of REI materials

Question 2: What is the role of local and provincial governments in offshore wind power development?

In Japan's offshore wind power development, local and provincial governments hold crucial roles and responsibilities in the planning and bidding processes. As prefectures are responsible for suggesting the Promising Zone candidates to the central government, if local authorities refuse to participate, even the initiation of the planning phase becomes challenging. In addition, discussions with local communities take place from the initial stages of site selection, as the local communities' consent to provide information is an essential prerequisite in selecting Promising Zones. In the later stages of council operation, maintaining close cooperation with local governments remains essential. JWPA explains that when the site selection begins with early-stage coordination with local communities and information provision to the central government, thereby forming a council, there are extremely rare instances where the project is suspended afterward.

Local and provincial governments play a significant role in the bidding evaluation process, as well. After local governments submit the review results to the prefectures, the prefectural governors make a comprehensive assessment on the opinions of the fishing industry and the contributions to the local communities, ultimately making the final proposals on regional community issues. According to the JWPA, local and provincial governments, not the central government, are entrusted with the authority to identify sites and evaluate bidding because they possess the most detailed knowledge about the local circumstances in the project site. They are capable of playing crucial roles in gathering and reconciling the opinions of stakeholders and coordination, which are important required processes in offshore wind power development. Although Japan has announced the introduction of a centralized system, local and provincial governments continue to be important players because it is inevitable to undergo consultations and coordination with the relevant stakeholders, including fishermen and community residents.

Question 3: How is local community acceptance ensured in Japan?

In Japan, community acceptance is ensured by local and provincial governments engaging in proactive discussions with relevant stakeholders from the initial site selection process, operating councils, and running benefit- sharing mechanisms.

Councils discuss the overview of the projects, their impact on the local communities and mitigation measures, strategies for ensuring the coexistence with the fisheries industry, and methods for monitoring the impact of the commercial operation of offshore wind power on the fishing industry. The council convenes three to four times on average per each Promotion Zone candidate site. The relatively fewer meetings in comparison to Korea are attributable to the previously agreed discussions between the local governments and local stakeholders before the information provision, as stipulated as requirements for offshore wind power development in the Renewable Energy Sea Area Utilization Act. That is, since a preliminary agreement has already been reached before the establishment and operation of the council, further council meetings can proceed in a swift manner. Another important factor in running a successful council is securing transparency. Japan has a transparent decision-making process - it discloses the council discussion materials and meeting minutes on national websites and provides live broadcasts for those unable to attend in person.

Japan's benefit-sharing mechanism for offshore wind power takes the form of funds. Project operators follow the guidelines set forth by the METI to establish funds based on a specific cost (rate) per capacity, which is determined by the council at the time of bidding. In accordance with the guidelines, the funds are to be used to promote coexistence with and development of local communities and the fishing industry, with their fairness and transparency secured. Meanwhile, compensations are separate from the benefit-sharing mechanism. In case the fishing catch reduces after the construction of offshore wind farm, the developer should compensate for the loss in fisheries accordingly.

Question 4: How is the bidding process conducted, and what are the criteria used for selecting developers?

In Japan, the project bidding evaluation comprises of 'power generation cost' and 'project feasibility,' each carrying an equal weight of 120 points. For the cost, the developer with the lowest bidding price is given the full 120 points. The project feasibility points cover the project implementation capacity (80 points), as well as coordination with the local community where the Promotion Zone is located and the ripple effect on the local economy (40 points). It is especially noteworthy that Japan attempts to secure community acceptance by assigning a substantial score to 'coexistence with the local community,' as the country is still in the early stages of introducing offshore wind power.

Following this bidding process criteria, in the results of the first public bidding (Round 1) announced in December 2021, a consortium led by Mitsubishi Corporation won all biddings for the three sea areas (two in Akita Prefecture and one in Chiba Prefecture, total combined capacity of 1.68GW). The key determining factor for such a result was the substantially low bidding prices of 11.99 JPY/kWh - 16.49 JPY/kWh. In particular, Mitsubishi bid approximately 12 JPY/kWh for the Yurihonjo sea area in Akita Prefecture, demonstrating the potential for lowering the offshore wind power prices through the bidding system.

Meanwhile, Japan introduced a new bidding evaluation criterion for Round 2, specifying the start date for commercial operation. In Round 1, project developers were selected based on price competitiveness, which led to some issues where the completion date of the projects did not align with the 2030 target outlined in the 6th Strategic Energy Plan.

Question 5: What challenges lie ahead for offshore wind power in Japan?

Key challenges hindering the deployment of offshore wind power in Japan are the power grid and its operating system. Since offshore wind is a large-scale power generation source, it requires the same large-scale regional consumption from the generation site to areas with high electricity demand. Accordingly, corresponding transmission networks and region wide operations are required, but Japan's current power supply system is independently operated by each power company in a given region. Therefore, the JWPA proposes that establishing a national TSO (Transmission System Operator) to facilitate demand-based consumption across wider regions is required.

Furthermore, the JWPA notes the limitations in inter-agency administration and collaboration as challenges to be addressed. The METI, the government department responsible for offshore wind power generation in Japan, outlines the provision of renewable energy at low costs as a key performance indicator. As a result, the expansion of offshore wind power is limited in terms of its connection to building and promoting related industrial infrastructure. The JWPA's outlook is that addressing those limitations is necessary to enable a transition to a renewable society.

References

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Solutions for Our Climate (SFOC) is an independent policy research and advocacy group that aims to make emissions trajectories across Asia compatible with the paris Agreement 1.5°C warming target.

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