

Legal challenges of Japanese offshore wind power generation

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論 説

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I Introduction

In recent years, Japan has promoted renewable energies, and in particular, offshore wind power. In November 2018, the Act of Promoting the Utilization of Sea Areas in the Development of Power Generation Facilities Using Maritime Renewable Energy, or heretofore, “the Act”, was enacted. It has been in effect since April 2019. This paper will focus on its background accomplishments and problems since its enactment, and its potential future.

(1) Background

In 2011, the Great East Earthquakes and Fukushima Nuclear Power Plant melt down caused the Japanese authorities to rethink Energy Policy. Renewable energy had already received much attention. In 2012, the government introduced the policy mechanism of Feed in Tariff for the renewable energies of solar and wind power energy¹. Feed in Tariff is a policy mechanism designed to accelerate investment in renewable energy technologies. It achieved this by offering long-term contracts to renewable energy produc-

¹ Agency for Natural resource and Energy Homepage for details. https://www.enecho.meti.go.jp/category/saving_and_new/saiene/kaitori/surcharge.html

ers, typically based on the cost of generation of each technology. In 2015, Japan joined the Paris Agreement and set the goal of increasing renewable energies to 30% of all energies by 2030².

Several international agreements concluded that reducing CO₂ emissions is necessary as a countermeasure against climate change. Among them were the Kyoto Protocol³, the Cancun Agreement, and the Paris Agreement which set CO₂ emission targets.

In Japan, after the Great East Japan Earthquake in 2011, the operation of nuclear power plants was suspended due to the melt down at the plant in Fukushima even though they had low CO₂ emissions.

As a result, Japan's electricity supply that was provided by nuclear power plants has since been supplemented by increasing amounts of coal and fossil fuels. This increase has made the achievement of CO₂ emission reduction targets quite difficult⁴.

As a result, the government reviewed its energy plan, and increased the goals of renewable energy. For example, in 2012, the feed-in tariff (FIT) promoted renewable energy such as solar and wind power. Currently, the feed-in tariff (FIT) costs more than 2 trillion yen. Because of its high costs, the government reviewed the FIT2019.

However, reduction in CO₂ emissions by renewable energies is still not enough.

² Global goal attainment of Paris Agreement: https://www.enecho.meti.go.jp/committee/council/basic_policy_subcommittee/2021/040/040_005.pdf

³ “Kyoto protocol Goal achievement plan” EPA Homepage: <https://www.env.go.jp/content/900447426.pdf>

⁴ Tsuyoshi Iketani, *Present and Future of Offshore Wind Power Energy*, Food and Construction(2019) vol60, 482.

On the other hand, as a result of the FIT system, the use of solar power has increased⁵. Regarding solar power, in Japan, where the population density is very high, there are some problems between the producers of solar power and nearby residents who are disturbed by the brilliance of the reflected light from the solar panels.

In the case of wind power, the land surface area where wind generators can be located is quite limited. For example, in national parks, even if the wind conditions are good, environmental regulations exist which make new construction difficult. Also, on-land wind power generators sometimes create problems such as loud noises and disturbing low frequency sound waves. Although the use of offshore wind power has not been widespread in Japan, the country is increasing its share as the world's main potential renewable energy source, a source also of great importance in European countries such as the United Kingdom, Denmark and Germany and so on⁶.

II Recent Laws

First, in 2016, the Japanese government revised its Harbor Law so that it could easily figure out who had the right to use harbors for the following 20 to 30 years (2019 revised⁷). For marine area beyond the harbors, no new laws were promulgated. Despite this, the government established that no interested parties could use the area for more than 3 or 5 years, although after 3 or 5 years, local governments could extend a given contract for

⁵ Izumi Ushiyama, *Present and Future prospect of Japanese Offshore Wind Power Energy*, Boiler research(2019) 4.

⁶ Global Offshore Market Outlook to 2031, Global Offshore Wind Report 2022 : Global Wind Energy Council, pp.84.

⁷ <https://www.mlit.go.jp/report/press/content/001312818.pdf>

another 3 or 5 years. This situation presented a big hurdle for the investment of wind power energy companies because they never knew if their contracts would be renewed.

The government therefore promulgated “the Act” of 2018 which established yet new procedures.

In addition, the government introduced legal unbundling governing the transmission and distribution of energy. The issue of which party can use existing transmission lines has been the biggest hurdle in starting wind power businesses.

Price regulations for wind power generation were lowered to facilitate the entry of new wind power companies⁸.

Based on this background, I would like to show the potential of offshore wind power generation, which is attracting increasing attention as renewable energy, and the current state of wind power generation⁹.

According to the wind map created by NEDO¹⁰, it can be seen that there are sites suitable for Wind Farms in the coastal areas. The coastal areas are off the prefectures of Hokkaido, Tohoku, Kyushu and Chiba. Due to the nature of Japan’s geography, which is surrounded by water, rather than installing windmills on land where noise and low frequency sound waves may affect the citizens as described above, the installation of offshore wind turbines is better suited to Japanese needs¹¹.

⁸ <https://www.meti.go.jp/press/2021/03/20220325006/20220325006.html>

⁹ https://www.meti.go.jp/shingikai/energy_environment/yojo_furyoku/pdf/002_02_01.pdf

¹⁰ NEDO(refer to NeoWins Offshore wind condition map) https://appwdc1.infoc.nedo.go.jp/Nedo_Webgis/index.html

¹¹ *Supra note 4.*

At present, two offshore wind farms are under construction in the harbors of Akita Prefecture. It is believed that when all potential wind turbines are operating, including locations where environmental assessments are being conducted, 5.39GW of energy will be produced. This amount of energy exceeded the 2015 government's goals, and the government's projected goals have become quite ambitious. Now the government has set the goals to 5.7GW by 2030.

III The role of the new Act

In 2018, the Japanese government revised the Harbor Act and additionally created the New Law to promote Offshore wind power plants. Thanks to these new provisions, already a new offshore wind power plant project is in progress in Akita prefecture.

The New Law provides a 30-year lease for the offshore wind power companies which makes the project much more lucrative for investors¹².

In addition, the New Law requires that the process for selecting offshore wind power plant sites must be done by a public process to take into consideration the needs of all stakeholders¹³.

Unlike the shallow waters of the coast of Europe, the coastal waters around Japan become very deep close to the coast line, where the wind conditions, currents, and bedrock are complicated. Considering the potential for offshore

¹² *Dawn of Japan, System, Infrastructure Installation, how to gradually grow its potential*, Compass(2019)11.

¹³ Interviewed by Tsuyoshi Nakazaki Environment Division Director, Port and Harbors Bureau, Ministry of Land, Infrastructure, Transport and Tourism, *Broadening area of occupation Public Offering System from Port and Harbor area to General Sea*, COM-PASS(2019)p.16.

wind power generation in Japan in the future, it is not enough to just adopt a shallow water type of offshore wind power plant such as the kind used in Europe.

Under the new law, companies can build floating of shore wind farms in areas of all depths.

Its operational guidelines require local governments to conduct stakeholder hearings during the site selection process¹⁴. This hearing data is used in strategic environmental assessments of wind power (over 10,000 KW). These strategic environmental assessments will take from three to five years. Most of the companies complain about the length of this process. As a result, the Ministry of the Environment has begun to encourage some local governments to do zoning to explore the potential of wind power as a model project¹⁵. While it is important to minimize the environmental damages, the practice is unfortunately still not common.

Most Japanese offshore wind turbines are expected to be built along the coast. Due to the high seawater temperatures around Japan and the high diversity of marine life, conditions vary from place to place, and various environmental assessments in offshore and coastal areas are considered differently¹⁶.

¹⁴ https://www.enecho.meti.go.jp/category/saving_and_new/saiene/yojo_furyoku/dl/legal/guideline.pdf

¹⁵ Announcement of Zoning manual by local government on Wind Power generators, <https://www.env.go.jp/content/900511122.pdf>

¹⁶ For example, as ‘Zoning result of Offshore Wind Power generator in Naruto City’, Naruto City Homepage: https://www.city.naruto.tokushima.jp/kurashi/kyodo/kankyorenewable_energy/yojo_furyoku.html

IV Stakeholder balance

As mentioned above, a strategic environmental assessment is required at the business project planning stage. In addition, many potential wind energy sites overlap with areas where communal fishing rights exist.

Since offshore wind power projects do not necessarily need to use the entirety of a site, measures to coexist with fishermen are sought from the outset. It is very important to establish agreements between the wind energy enterprises and fishermen, as well as with large companies controlling fishermen's interests.

The Gotojima floating offshore wind power plant project in Nagasaki can serve as a useful example for other fishermen and wind energy enterprises, in ways such as using fishing vessels as patrol boats, making the site a rich reef for fishermen, and promoting local development.

On the other hand, fisheries compensation in monetary terms is not high because of the availability of their locations. Evaluations of the pros and cons for fishermen of course vary according to individual cases and negotiations between the parties. There are big arguments for fishermen's rights, but fisheries' unions sometimes agree to wind power and receive compensation without the consent of their fishermen¹⁷.

Few years ago, FIT was revised and replaced by FIP(Feed in Premium)¹⁸. Until 2023 however, FIT prices for wind power are uncertain and price competition will most likely intensify¹⁹. There are some concerns that some

¹⁷ Kazuki Kumamoto, "What are fisheries right?", Nihonhyoronsya, 2018. Shinji Kirihara, Harmonize with Offshore Wind Power and Fisheries, Kinzoku(2019),p324.

¹⁸ https://www.meti.go.jp/shingikai/enecho/denryoku_gas/saisei_kano/pdf/022_02_00.pdf

¹⁹ *Supra note 1.*

of the profits owed to fishermen and local stakeholders, such as the establishment of coral reefs, will decrease.

In addition, the revised Fisheries Act, which came into in 2020, includes provisions that “Where there are no fishing rights, local prefectures will set fishing rights in such areas.”

For example, if the prefecture permits, some new companies will get offshore fishing rights. They can negotiate compensation with the offshore wind power companies, agree to the project on the site, receive compensation, and desert the venture if business stops working²⁰.

The revised Fisheries Act regulates provisions that “ In order to further develop fishery productivity, the central government, along with the prefectures, shall be responsible for appropriately conserving and managing marine resources and shall take necessary measures to prevent and resolve disputes over the use of fishing grounds.” I think these provisions need to include guidelines for protecting the interests of small fishermen.

According to the Strategic Environmental Assessment, coastal or offshore wind needs to be surveyed separately.

In particular, coastal offshore wind farms for non-fishing effects, low frequency sounds, very low frequency sounds, migratory bird issues, and landscapes all need to be carefully considered²¹.

As an example, in a case decided by Yamaguchi’s lower court, an AMA diver woman claimed an injunction based on her fishing rights. The court held that “offshore wind power does not infringe on fishing rights and the

²⁰ *Supra note 14.*

²¹ Assessment on Environmental Impact on Wind Power Plants, NEDO Homepage <https://www.nedo.go.jp/content/100890009.pdf>

site can be used as a fishing reef²².”

While that decision may seem rational, it is important to think carefully about the AMA woman diver’s culture. According to some articles, divers collecting abalone and shellfish usually keep information about fishing grounds secret to prevent overfishing by traders.

The female diver culture protects the bounty of the sea by adjusting the timing of shellfish harvesting based on its own rules for protecting natural resources²³.

But when a newcomer starts a development in the area, what will happen? There are only a few governmental processes that protect environmental interests in advance. There are no guidelines to protect historical culture²⁴ like the AMA.

From this perspective, the process of consensus building with fishermen needs to be carefully considered and encouraged²⁵. Fortunately, a few positive factors reduce this problem.

First, the AMA problem does not arise within offshore law, since divers only can dive to a depth of around 10 meters. Secondly, on offshore wind farms, very low frequency issues don’t exist, because they are far from the coast. Thirdly, while floating offshore wind turbines can be expensive to install due to their distance out at sea, their wind conditions are more favorable and their size is comparatively large. Fourthly, it is also believed that bird collisions with these turbines will decrease when windmills become larger and their rotation speed decreases²⁶.

²² Yamaguchi Chiho Saibansyo, Oct 2, 2018, Hei 30.(LEX/DB 25561621).

²³ Hiroshima Koto Saibansyo, Jun 26, 2019, Rei 1.(LEX/DB 25563719).

²⁴ Saiko Saibansyo, Jul 3, Rei 2. (LEX/DB 25566904).

²⁵ *Supra note* 16 Kirihara 324.

²⁶ Assessment Report p.185, <https://www.nedo.go.jp/content/100758581>

At present, there is an example of floating offshore wind power generation in the Gotoh Islands, which were first selected as a site under the new law²⁷. Originally, it was an offshore wind power plant that was constructed as a national demonstration project by Kyoto University and Toda Construction, and it has been operating without problems²⁸.

Although it may become difficult to construct wind farms only with private funding, at least in terms of stakeholder risk, the Gotoh Islands type of offshore wind power generation project is a good model.

V Conclusion

The government needs to invest aggressively in large vessels, facilities and human resource related to maintenance. Zoning is an efficient way to balance stakeholders' interests. The creation of guidelines to minimize environmental damages to fisheries is equally important. If constructive policies are followed, the future of floating offshore wind power plants clearly has tremendous potential in Japan.

It would be beneficial for Japan to compare the background of offshore wind power industry and the role played by the government with the European model. We must take into consideration cultural values, ecology and diversity, scenic views among others.

Two factors that contributed to the rapid introduction of offshore wind

²⁷ Designated by government operation, worked in harmony with fisheries in Gotoh city Nagasaki Prefecture, Renewable Energy Institute (2017)1-18.

²⁸ *Toda Corporation Expansion of Floating system wind power in the offshore of Gotoh City*, COMPASS (2019).

power in Europe were the heavy investment by each individual country and the diversion of SEP[Self-Elevating Platform] vessels used in oil and gas development. In Japan, there have been not so many large SEP vessels, so it is inevitable that the construction costs will be higher than in Europe. However, in recent years, large models of ships that can assemble wind turbines on the sea in Japan have been built. Measuring and mapping wind flow is not easy either, but, technology is gradually advancing and those sensors, which do not need towers could be utilized. Moreover, the development of harbors that can withstand the load of large wind turbines will be essential. For these reasons, we should consider the movement of wind farms from coastal areas to offshore locations as the most intelligent solution. Therefore, coordination of stakeholder's varying interests will be important.

In the future, I would like to broaden the scope of my study of the issues involved in the balance of stakeholder's interests, which have been widely explored in oil and gas development in the United States.

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