

## Signing of a MOU to study a method of supplying green power through offshore wind power generation from the Yokohama waterfront area

The City of Yokohama has signed a memorandum of understanding with TEPCO Power Grid, Inc., Ocean Power Grid, Inc, TODA CORPORATION, and MUFG Bank, Ltd. to investigate ways to supply green power through offshore wind power generated in the Yokohama waterfront area.

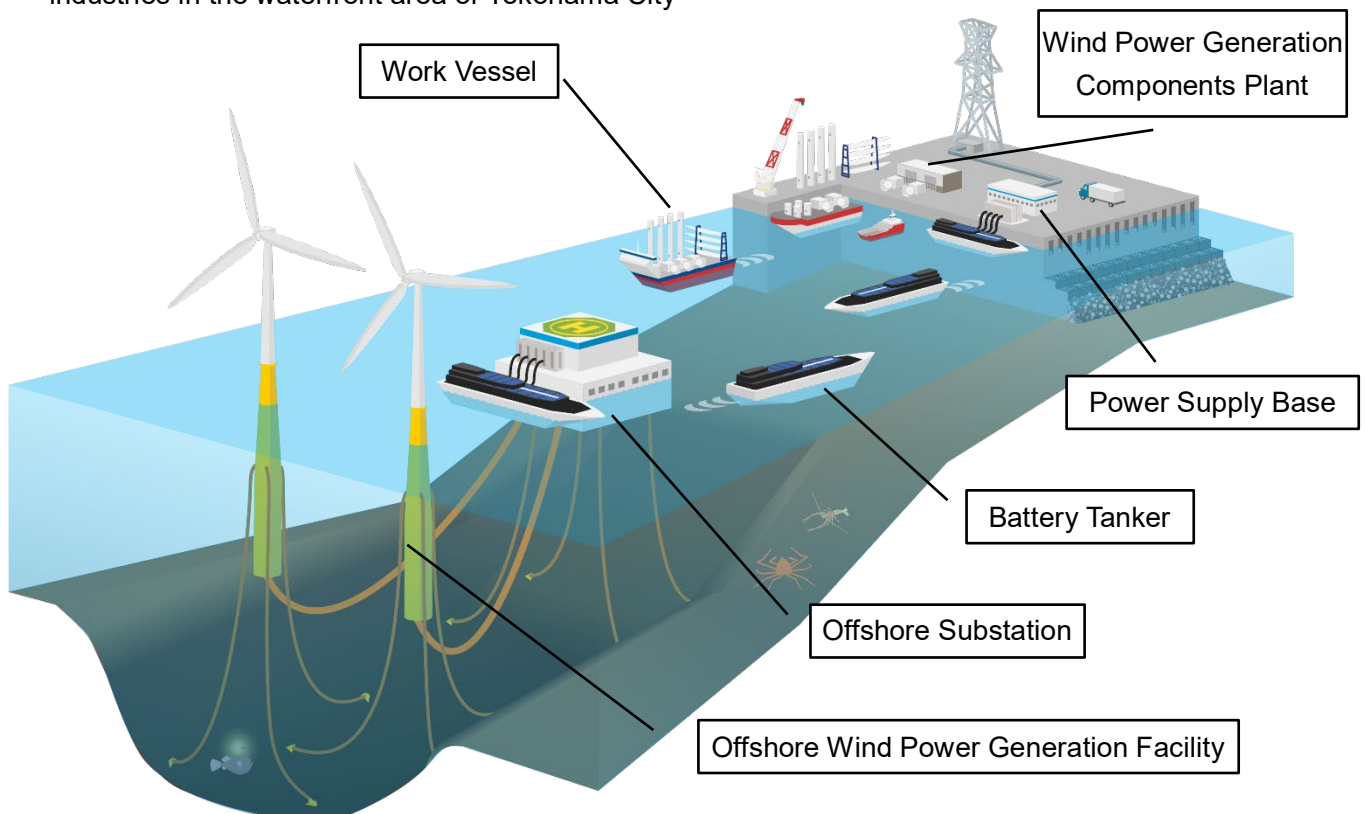
Based on the proposal to fully introduce renewable energy as the main power source as indicated in the next Basic Energy Plan, all parties will work together to turn the Port of Yokohama into a carbon-neutral port. Moreover, we will strive to supply renewable energy to a wide area and will study ways to supply electricity derived from offshore wind power generation from the Yokohama waterfront area, as well as the regional co-creation of industries related to offshore wind power generation projects.



From left: Ms. Ikuko Sato, Managing Executive Officer, TEPCO Power Grid, Inc., Mr. Taisuke Yoshida, General Manager, Tokyo Government & Public Institutions Business Office, MUFG Bank, Ltd., Mr. Toshihide Hirahara, Deputy Mayor, City of Yokohama, Mr. Tomomi Nakai, Corporate Officer, Senior General Manager, GX Administration Division, TODA CORPORATION, Mr. Masahiro Ito, Representative Director of Ocean Power Grid, Inc.  
(at the head office of MUFG Bank, Ltd.)

## 1 Purpose of the Memorandum of Understanding

- (1) The City of Yokohama : Promoting the formation of a carbon neutral port at the Port of Yokohama  
Study of regional co-creation in industries in the Yokohama waterfront area for the supply of green power to the Yokohama waterfront area and the industrialization of offshore wind power generation
- (2) TEPCO Power Grid, Inc. : Stabilization of the balance between supply and demand of electricity in the Yokohama waterfront area  
Study on the development of an essential power supply base to cope with fluctuations in the balance of supply and demand of electricity in the Yokohama waterfront area.
- (3) Ocean Power Grid, Inc : Promote studies on use and application of battery tankers  
Implementation of the world's first transmission of green power derived from offshore wind power generation by a battery tanker
- (4) TODA CORPORATION : Offshore wind farm construction  
Study on the construction of an offshore wind farm utilizing the knowledge of the first practical application of floating offshore wind power generation facilities in Japan
- (5) MUFG Bank, Ltd. : Promote study of financing methods for offshore wind power generation projects, etc.  
In addition to the study of financing methods related to (4) above, study of regional co-creation in industries in the waterfront area of Yokohama City



Floating offshore wind farm utilizing a battery tanker (image)

Offshore wind farms consist mainly of wind power generation facilities, operation monitoring facilities, onshore substations, and transmission lines, as well as submarine transmission cables, port facilities, and offshore substations. The study under this MOU will consider the use of battery tankers as a means of power transmission.

## 2 About Offshore Wind Power

It is the “trump card” toward making renewable energy the main source of power in Japan, with the aim of forming 30 GW to 45 GW of floating and bottom-fixed type projects by 2040. In addition, we intend to provide the necessary conditions to enable the installation of offshore wind power generation in Japan's vast exclusive economic zones.

In particular, with regard to floating offshore wind power generation, the project will promote cost reduction and mass production through technological development, strengthen the domestic supply chain and international expansion through the establishment of production and installation infrastructure and optimal offshore construction methods, and strongly promote human resource development through collaboration between industry and educational research institutions.

|   |                            | FY2013(actual results) | FY2022(actual results) | FY2040(forecast)             |
|---|----------------------------|------------------------|------------------------|------------------------------|
| <b>Amount of electric power generated</b> |                            | 1.08 trillion kWh      | 1.00 trillion kWh      | Approx. 1.1~1.2 trillion kWh |
|   | <b>Renewable Energy</b>    | 10.9%                  | 21.8%                  | Approx. 40~50%               |
|   | <b>Solar Power</b>         | 1.2%                   | 9.2%                   | Approx. 23~29%               |
|   | <b>Wind Power</b>          | 0.5%                   | 0.9%                   | Approx. 4~8%                 |
|   | <b>Hydroelectric Power</b> | 7.3%                   | 7.7%                   | Approx. 8~10%                |
|   | <b>Geothermal Power</b>    | 0.2%                   | 0.3%                   | Approx. 1~2%                 |
|   | <b>Biomass Power</b>       | 1.6%                   | 3.7%                   | Approx. 5~6%                 |
|   | <b>Nuclear Power</b>       | 0.9%                   | 5.6%                   | Approx. 20%                  |
|   | <b>Thermal Power</b>       | 88.3%                  | 72.6%                  | Approx. 30~40%               |

Source: The Seventh Basic Energy Plan (draft) and related materials (December 25, 2024)

## 3 Future Perspective for Electricity Demand in the Waterfront Area of Yokohama City \*

In the Yokohama City waterfront area, the demand for electricity is expected to increase due to the development of the Minato Mirai 21 district, the redevelopment of the Yamashita Pier, and the development of the Shin-Honmoku Pier, etc. In addition, the balance of electricity supply and demand is expected to change with the progress of decarbonization, and the need for new supply bases to meet the future demand for electricity is increasing. (\* Forecast by TEPCO Power Grid, Inc.)

## 4 About Battery Tanker

Battery tankers are the world's first means of transporting electricity by sea, storing it in onboard storage batteries. Japan has set a goal of achieving carbon neutrality by 2050 and is actively introducing renewable energy, including consideration of extending offshore wind power to the exclusive economic zones (EEZ). Since Japan's waters are deep, especially in the EEZ, and water depth below 300m amounts to approximately 10% of the water area where power can be transmitted by conventional means, strengthening the means of transmission becomes one of the challenges. Therefore, battery tankers are expected to have potential as a means of solving these issues.



Image of Battery Tanker

## 5 Introduction of each company

### (1) TEPCO Power Grid, Inc.

A wholly owned subsidiary of TEPCO Holdings, Inc., General Electricity Transmission and Distribution Utility\* serving the Kanto area, all of Yamanashi Prefecture, and part of Shizuoka Prefecture. Kanagawa Prefecture is served by TEPCO Power Grid, Inc.

\*A business that provides a consignment supply and a regulated supply of electricity in its service area using electric facilities for transmission and distribution that it maintains and operates (from the website of the Agency for Natural Resources and Energy).

### (2) Ocean Power Grid, Inc.

A wholly owned subsidiary of Power X (established on February 9, 2024). Through the development and business formation and operation of battery tankers, the company aims to create an offshore power grid. Electricity itself is transported by ship, and this company is working to implement the explosive growth of renewable energy.

### (3) TODA CORPORATION

TODA CORPORATION is a general engineering and consulting company that conducts research, planning, design, supervision, and construction related to architectural and civil engineering projects. The company is also involved in real estate-related businesses and renewable energy projects such as floating offshore wind farms.

### (4) MUFG Bank, Ltd.

MUFG is a consolidated subsidiary of Mitsubishi UFJ Financial Group, Inc. Within the “MUFG Way”, it has as its main guiding principle, “Committed to empowering a brighter future.” The company is also committed to solving issues faced by all stakeholders, including customers, in order to achieve a sustainable environment and society.



## Carbon-Neutral Port Initiatives at the Port of Yokohama

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