

# Grasp of Current State and Issues of Spatial Development in Coastal Areas

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Port, Coastal, Marine Department

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## 1. Introduction

In response to the global demand for decarbonization and sustainable economic development, as well as the need to improve the safety of power plants, trends in the utilization of the sites of former thermal power plants developed in the coastal areas of our country and the operation status of offshore wind power plants in port areas, which are being introduced as one of the renewable energies, have been summarized and introduced in this paper.

## 2. Trends in the utilization of the sites of former thermal power plants in the coastal areas

**Table-1** shows the main characteristic cases of the utilization of the sites of former thermal power plants in the coastal areas. In the table, "safety education facilities" refer to the facilities to learn about safety by simulating past electric power disasters and accidents, and "comprehensive technology centers" refer to the facilities that consolidate factories, warehouses, and training facilities for electric power company employees. Furthermore, it is worth mentioning that the site of the former thermal power plant in Shimizu Port, which had been vacant for nearly 20 years, was newly developed as a distribution warehouse by a steel trading company, and the site of the Sendai Power Plant was used to develop a base for recycling corporate and regional waste.

**Table -1 Characteristic cases of the utilization of the sites of former thermal power plants**

Old facilities	New facilities
Karatsu Power Plant (Saga)	Safety education facilities
Iwakuni Power Plant (Yamaguchi)	General Technology Center
Shimizu Power Plant (Shizuoka)	Distribution warehouse of a steel trading company
Sendai Power Plant (Kagoshima)	Waste recycling facility
Kainan Power Plant (Wakayama)	Works of an ironworks construction company

## 3. Trends in the location of offshore wind power plants

In our country, the introduction of offshore wind power is steadily progressing. Commercial operations have already started in port areas, and promotion areas have been designated in general sea areas. **Table-2** shows the operational status of commercial offshore wind power plants in various regions.

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**Table -2 Examples of use of offshore**

**wind power plants**

Port name	Time of operation	Number of wind turbines
Port of Akita	January 2023	13 mounds
Port of Noshiro	December 2022	20 mounds
Ishikari Bay New Port	January 2024	14 mounds

Japan's first commercial offshore wind power plants are in operation at Akita Port and Noshiro Port. The total project cost (total for both ports) is approximately 100 billion yen, and 1 wind turbine with a generating capacity of 4.2 MW (megawatt) is installed in each port. The generated electricity is sold to Tohoku Electric Power Co., Inc. Japan's largest offshore wind power plant is operating in Ishikari Bay New Port, and its total project cost is about 80 billion yen. In addition, 1 large wind turbine with a generating capacity of 8 MW is adopted here for the first time in our country.

**4. Future Issues to Consider**

As future issues to be considered, issues that are thought to surface in the coastal area in the future will be organized and measures that should be taken in the coastal area will be considered after integrating the case study of reorganization in the Keihin coastal area that is being carried out concurrently, the results of the case study of reorganization in the coastal area that was carried out in the past year, and the results of hearings with business operators that were conducted as appropriate.