Port and Harbor Policies in Japan

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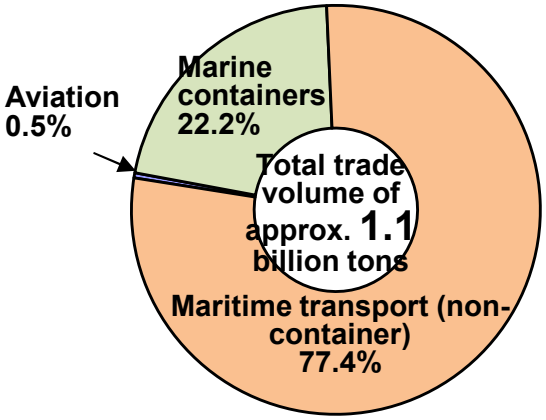
Contents

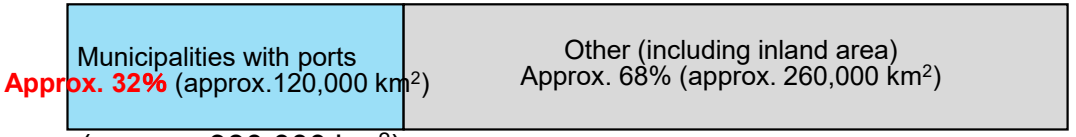
Ⅰ. Overview of Japanese ports

Outline of Ports and harbors in Japan



99.5% of Japan's trade volume is through maritime transports via ports

The percentage of land of municipalities with ports in the total land area of Japan



(approx. 380,000 km²)

Large cities or port towns are located

Tokyo Bay (Tokyo)

Kure Port (Hiroshima)

The percentage of the total population of municipalities with ports in the total population of Japan

(125.92M people)

Logistics and industrial functions are densely concentrated

Osaka Port (Osaka)

Chiba Port (Chiba)

The percentage of the total value of manufactured goods shipments from municipalities with ports in the total value of manufactured goods shipments, etc. in Japan

(approx. 323T yen)

Changes in Japanese port and harbor policies

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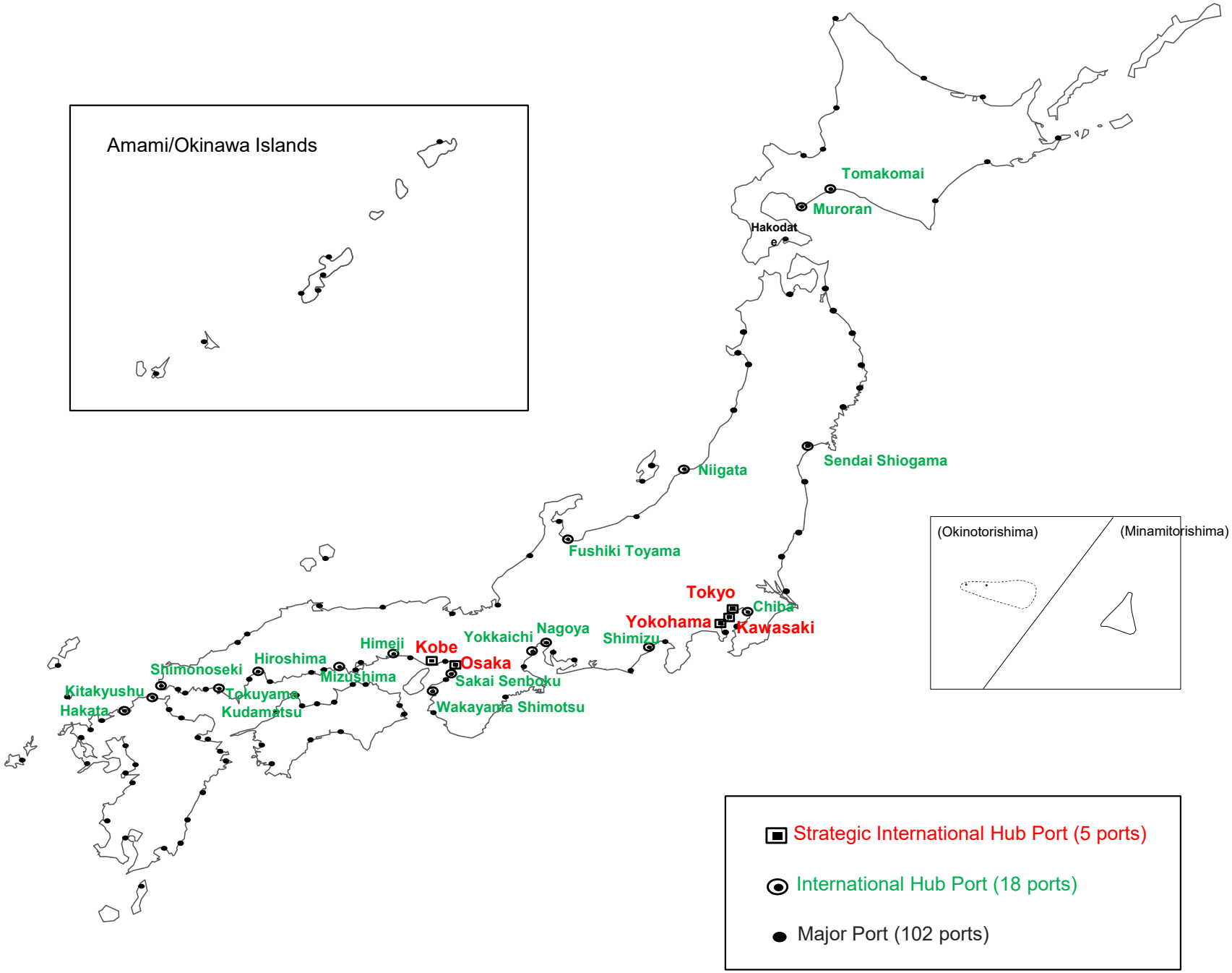
Year	Long-term harbor policy	Details of harbor space administration
1950s to 1970s	—	Quantitative expansion of logistics and industrial functions ・Secure extensive waterfront areas and vast industrial lands to address the rapid increase in logistics and the expansion of industrial production
1985	Ports of the 21st century	Creation of comprehensive port spaces ・Establish comprehensive port spaces where functions related to logistics, industry, and life are coordinated in harmonious manner
1990	Aim for rich waterfront	Comprehensive improvement of port space qualities ・Create unique and comprehensive port spaces through the redevelopment of inner harbor areas and the development of offshore artificial islands
1995	Ports that support the great era of exchange	Establishment of port network that support the great era of exchange ・Divide port functions, and focus on efficient allocation and investment such as facility centralization (central/core port allocation plan)
2000	Ports that connect living with the ocean and the world	Provision of high-quality logistic service with international competitiveness ・Establish maritime highway network
2018	PORT2030	Promotion of spatial design that generates brand value ・Redevelop waterfront areas by using private funds ・Utilize beaches and green areas as areas of sports activities and relaxation during leisure time at beaches for tourists.

Types and locations of ports and harbors



Ⅱ. Port development and management/operation scheme in Japan

Port management system in Japan

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○ A Port Management Body (PMB) refers to an entity that is publicly responsible for developing and preserveing ports as a whole, making them available for public use, and managing/operating them as an integrated infrastructure.

PMB structure

The Ports and Harbors Act assumes the following three possible establishment structures for PMB. The National Government is excluded from PMB candidate list.

①In cases in which an ordinary prefectural or municipal government becomes the PMB (Article 33-1 of Ports and Harbours Act)

②In cases where a prefecture or municipality jointly establishes an administrative association or cross-regional federation under Article 284-2 or Article 284-3 of the Local Autonomy Act and makes it serve as a PMB. (Article 33-1)

③In cases where a single or multiple relevant local governments establish a port authority either individually or jointly. (Article 4-1)

Port type	Total number	PMB				
		Prefecture	Municipality	Port authority	Administrative association	Total
Strategic International Hub Port	5	1	4	0	0	5
International Hub Port	18	11	4	0	3	18
Major Port	102	82	16	1	3	102
Local Port	807	504	303	0	0	807
Total	932	598	327	1	6	932

Basic policy and port plan

Basic Policy
(Article 3-2 of Ports and Harbors Act)

←Formulated by the National Government

・Basic policy on development, use, and maintenance of ports and on navigation channels to be developed and preserved.

Port Plan
(Article 3-3)

←Formulated by port management body (e.g., municipalities),and reviewed by the National Government in the case of major ports and/or higher ports.

・A master plan for long-term development, use, and maintenance of ports

Port Construction
(e.g., Articles 42, 43, and 52)

・The National Government, port management body, etc. are responsible for the construction, improvement, maintenance, and/or restoration of port facilities.

Management and administration of ports in Japan

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Port and Harbors Bureau, Ministry of Land, Infrastructure, Transport and Tourism (HQ)
- Formulate policy
- Budget appropriation
- Construct facilities (Only huge size ones)

↓ Supervising, budget, entrusting facilities

Port Management Body (PMB: Local Gov.)
- Develop individual port plan
- Construction facilities
- Maintenance of facilities
- Coordination

Port Terminal Corporation
- Conducting a specific part of duties on behalf of PMB
- Major stakes owned by local gov.

↓ Approve usages of facilities (upon each call)
Lease facilities (for mid/long term)

Terminal Operators
- Stevedoring companies

↓

Service Providers
- Pilot
- Tugboat
- Others

Classification of projects related to port development

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○The National Government or PMB will develop breakwaters, quays, channels/anchorage areas, etc., for use by the general public as public projects (port development projects).
○PMB will develop wharf areas, sheds, etc. as projects financed with bond proceeds (port function facility development projects).
○PMB and others will develop port-related areas/industrial areas as projects financed with bond proceeds (costal land development projects).
○In addition, PMB, local public organizations, port operating companies, and private sectors will develop port facilities which they think are necessary.

Harbor projects financed with bond proceeds

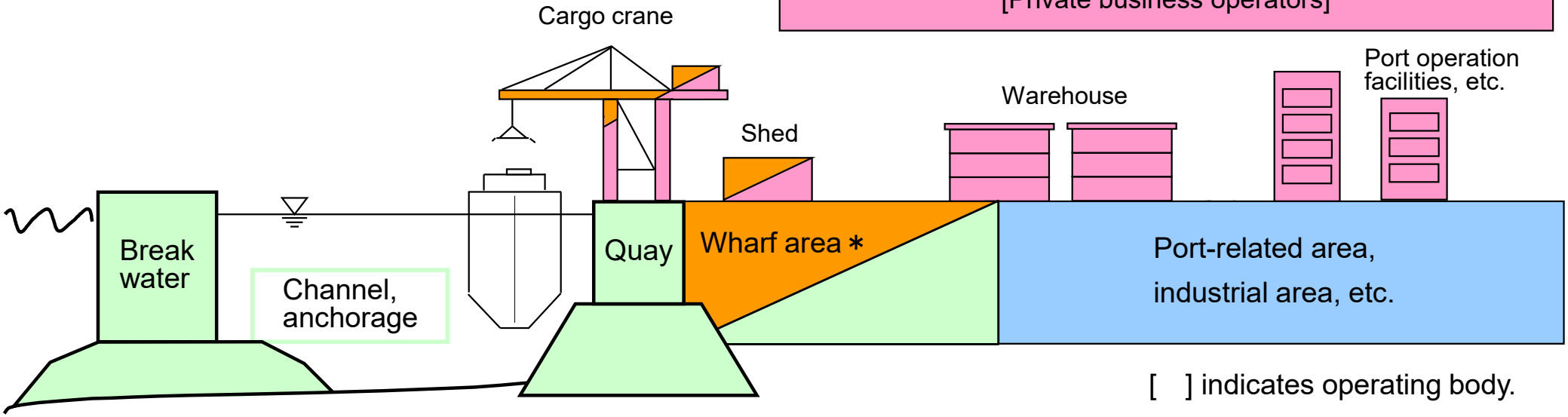
Port development projects
[National government or PMB]

(e.g., breakwater, quay, channel, anchorage)

Port function facility development projects
[PMB]

Costal land development projects
[PMB, etc.]

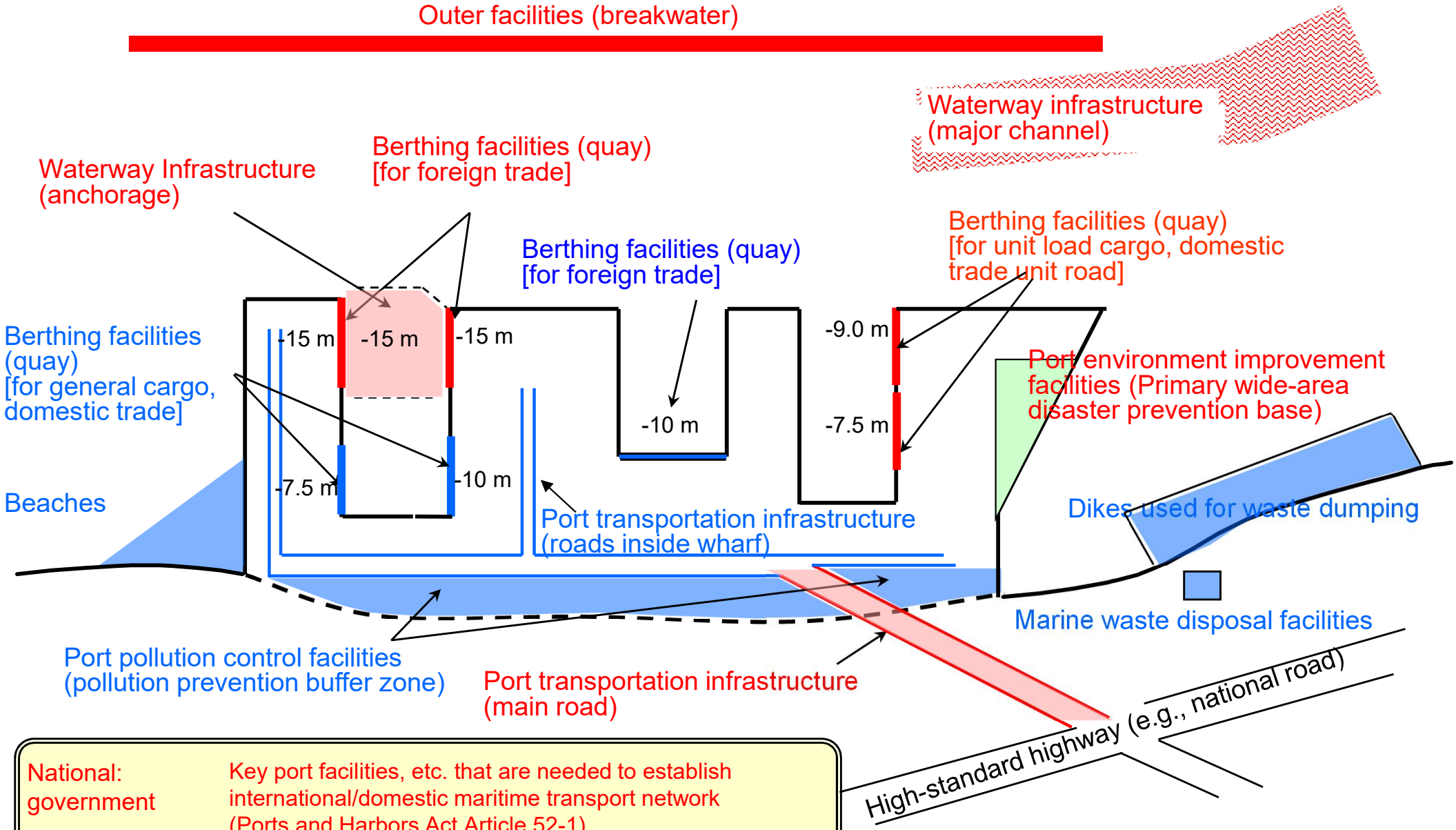
Port projects by private sectors (port operating companies)
[Private business operators]



[ ] indicates operating body.

* The National Government is responsible for developing only cargo handling areas associated with high-standard container terminals (those with earthquake-resistant quays with a depth of 16 meters or more) in international strategic hub ports.

Roles of national and local governments in port development



National: government	Key port facilities, etc. that are needed to establish international/domestic maritime transport network (Ports and Harbors Act Article 52-1)
Local government:	Public port facilities other than above

Contribution share or subsidy rate by National government for port development projects

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Port Type	Project Implementing Body	Waterway/ outer facilities	Berthing facilities	Port transportation infrastructure	Land for port facilities, etc.
Strategic International Hub Port	National government	2 / 3 (* 3) 5.5 / 10 5 / 10 (* 6)	7 / 10 (* 1) 2 / 3 (* 1) 5.5 / 10 5 / 10 (* 6)	2 / 3 5 / 10 (* 6)	2 / 3 (* 2)
	Local government	5 / 10 4 / 10 (* 7)	5 / 10 4 / 10 (* 7)	5 / 10 4 / 10 (* 7)	
International Hub Port	National government	2 / 3 (* 3) 5.5 / 10 5 / 10 (* 6)	2 / 3 (* 3) 5.5 / 10 5 / 10 (* 6)	2 / 3 5 / 10 (* 6)	
	Local government	5 / 10 4 / 10 (* 7)	5 / 10 4 / 10 (* 7)	5 / 10 4 / 10 (* 7)	
Major Port	National government	5.5 / 10 5 / 10 (* 6)	5.5 / 10 5 / 10 (* 6)	5.5 / 10 5 / 10 (* 6)	
	Local government	5.5 / 10 (* 4) 5 / 10 4 / 10 (* 7)	5.5 / 10 (* 4) 5 / 10 4 / 10 (* 7)	5.5 / 10 (* 4) 5 / 10 4 / 10 (* 7)	
Local Port	Local government	4 / 10	4 / 10	4 / 10	

*1: Quay (limited to quake-resistant quays) for international maritime container terminals of international strategic hub ports.
For quays with a depth of more than 16m, the amount is 7/10, for those between 14m and 16m, the amount is 2/3.
*2: Loading area attached to a quay (limited to quake-resistant quays with a depth of more than 16m) for international maritime container terminals of international strategic hub ports.
*3: Channels/breakaways, and quays (limited to quake-resistant quays) for international maritime container terminals of international strategic hub ports or international hub ports.
*4: Facility development based on the Special Measures Law for the promotion of areas with nuclear power plants, etc.
*6: State-run constructions according to Article 52-1 and Article 1-5 of Ports and Harbors Act.
*7: Small-scale facilities related to docks, etc. for small boats.

Interest-free loan system to private sector (e.g., Special-purpose port and harbor facilities development projects)

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○For international strategic hub ports, interest-free loans are provided to private operators that develop cargo handling facilities (sheds) or storage facilities (warehouses) equipped with distribution processing functions.

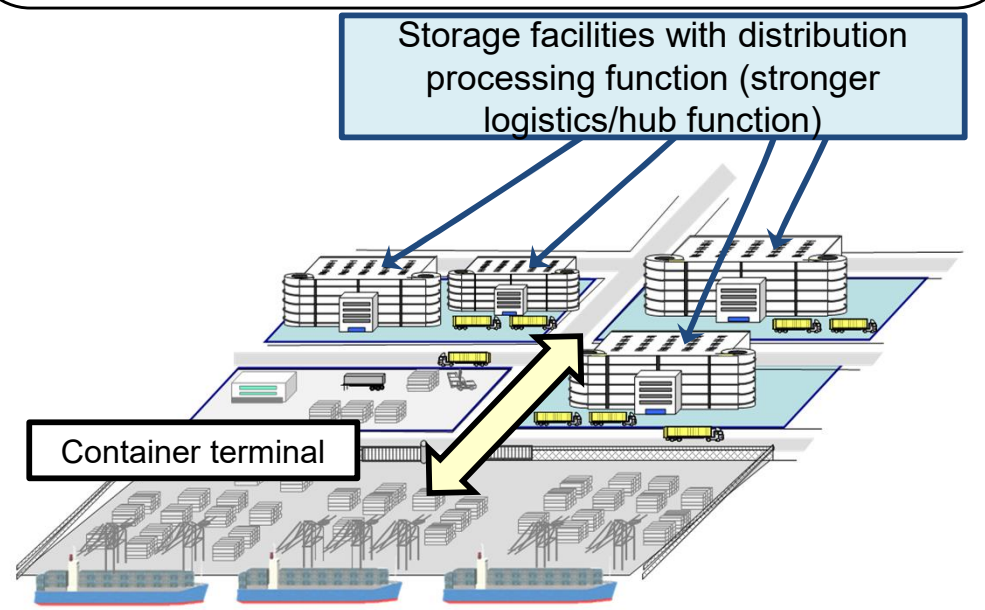
[Detail of support]

[Subject facility]
Logistics facilities (shed and warehouse) near the wharf

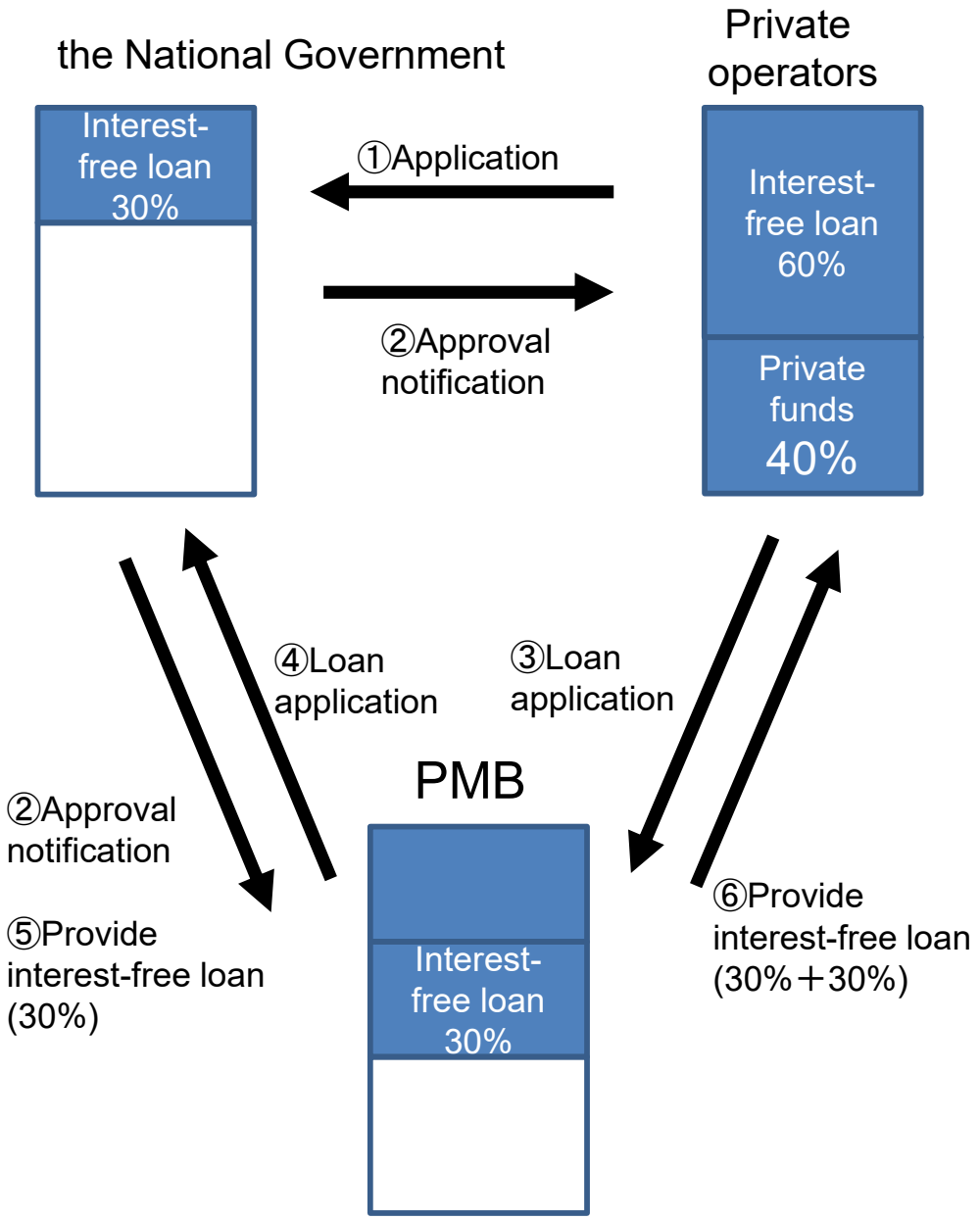
[Subject port]
International container strategic hub port (Keihin Port, Hanshin Port)

[Lending ratio]
National Government : PMB : Private operator
＝ 3 : 3 : 4

[Repayment period]
20 years



[Image of international container strategic hub port]



[interest-free loan provision scheme]

Example of Port Development: Overview of Yokohama Port

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Container Terminal
Vehicle Terminal
Cruise Terminal

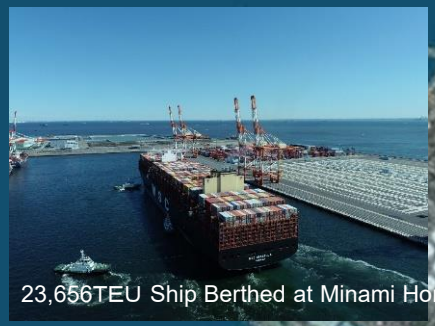
Shinko Pier Cruise Ship Terminal

Shinko Pier No.9 Berth

Osanbashi Pier

Strengthened Cruise Ship Acceptance Features

Yamashita Pier



23,656TEU Ship Berthed at Minami Honmoku Pier

Metropolitan Expressway Bayshore Route

Honmoku Pier CD Interchange

4 PCC Vessels berthing at T3-T8 at Daikoku Pier

Minami-Honmoku Hama Road

MC1
MC2
MC3
MC4

CD
B C
D1
D4
D5

Honmoku Pier

Bay Bridge

Available for cruise ship and vehicle handling

Relocation & Consolidation of Container Functions

Container Terminal

Shin-Honmoku Pier

Daikoku Pier

Increased Container Handling

Increased Vehicle Handling

Example of Port Development:
Enhancement of the International Maritime Container Terminal at Shin-Honmoku Pier

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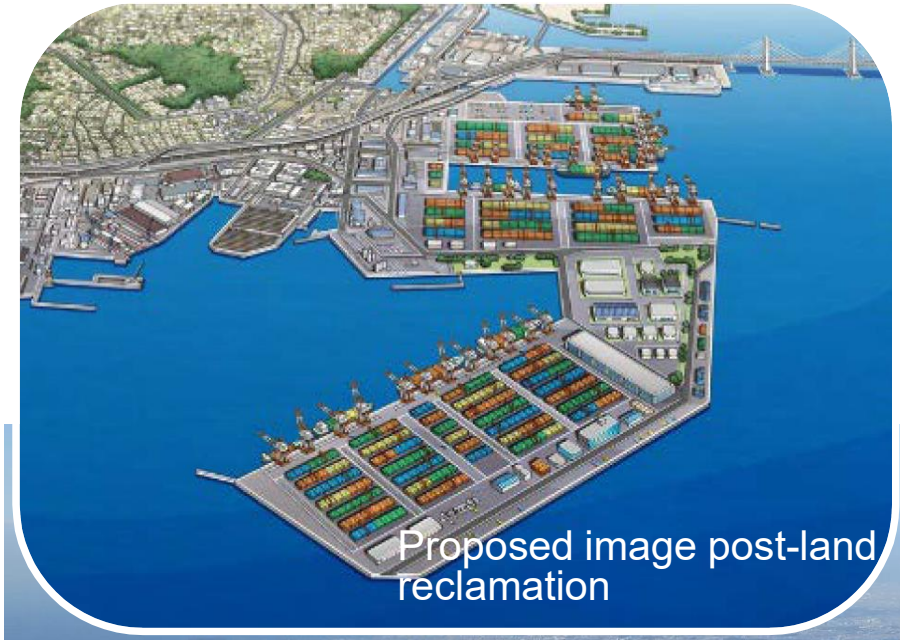

[Construction Outline]

○ Project Period: JFY 2019 – 2031
○ Total Project Cost: 310 Billion Yen (*Includes cost of restructuring Honmoku Pier)

<Shin-Honmoku Pier Section>
Main Facilities:
1,000m Wharf (Water Depth approx. -18m～), Levee (Wave Break), Breakwater, Cargo handling area, Roads, Cargo Handling Facility
<Honmoku Pier Section>
Main Facilities:
Reorganization of Honmoku BC, D5, CD Wharves, Honmoku A, Roads, Honmoku BC, Cargo Handling Facility, etc.

Example of Port Development: Division of roles between the National government and the city of Yokohama

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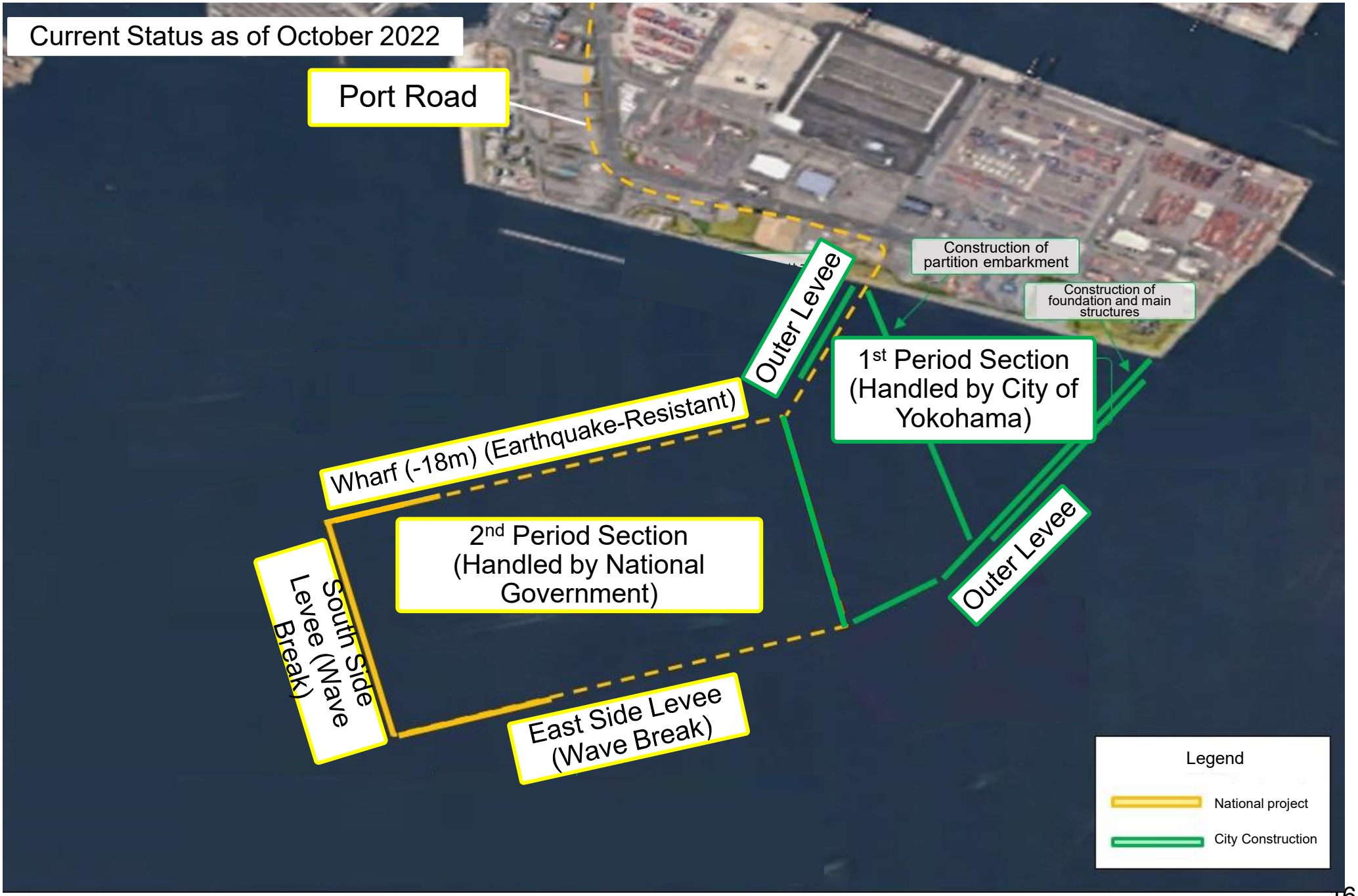
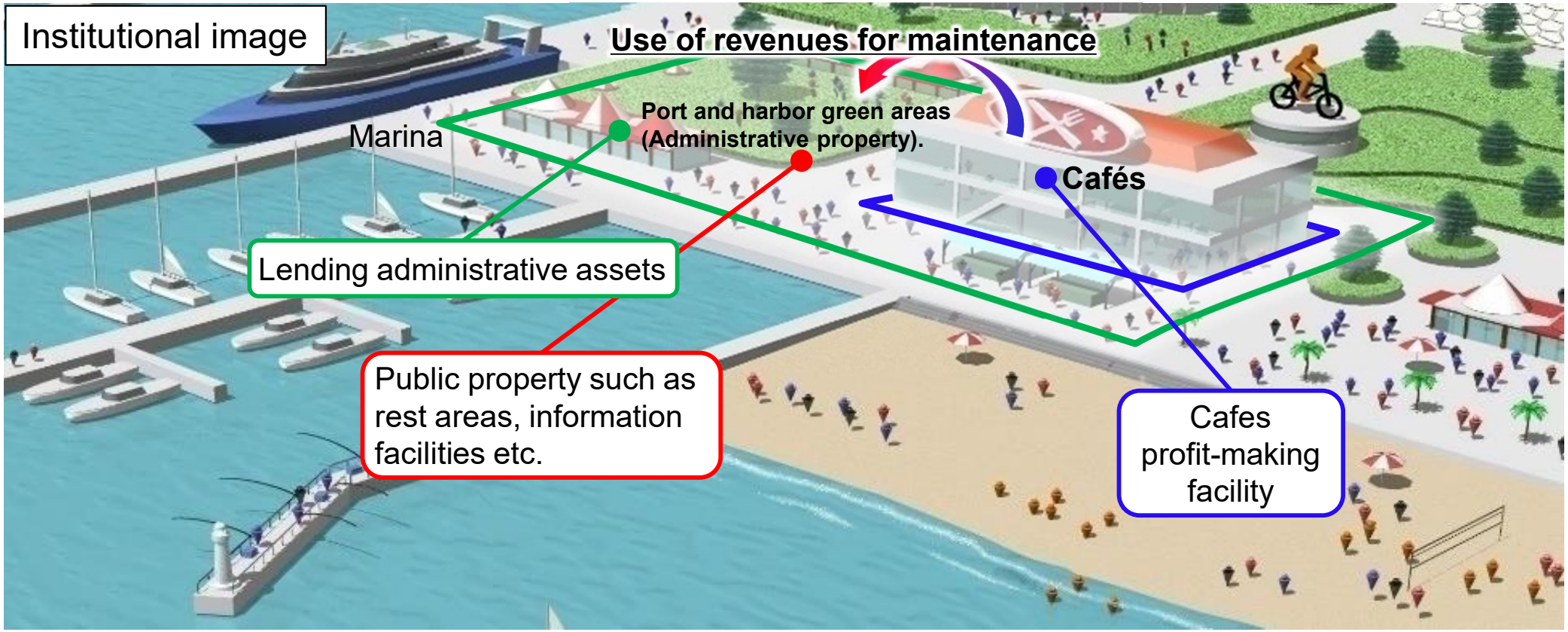


New system to develop port green spaces and other facilities by private operators

Concept of the new system established by the revision of Port Low

In port green spaces, **developing income-generating facilities (e.g. cafés) and returning the income they generate to green spaces**
A certification system that paves the way to **lend green spaces and other public property to private operators undertaking renewal,** is implemented.



⇒ **Creation of lively and high-quality spaces that optimally exploit the waterfront line by further promoting private sector input.**

New system to develop port green spaces and other facilities by private operators

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Support measures for certified private operators.

- Lending of green spaces and other administrative property (Special provisions of the National Property Act).

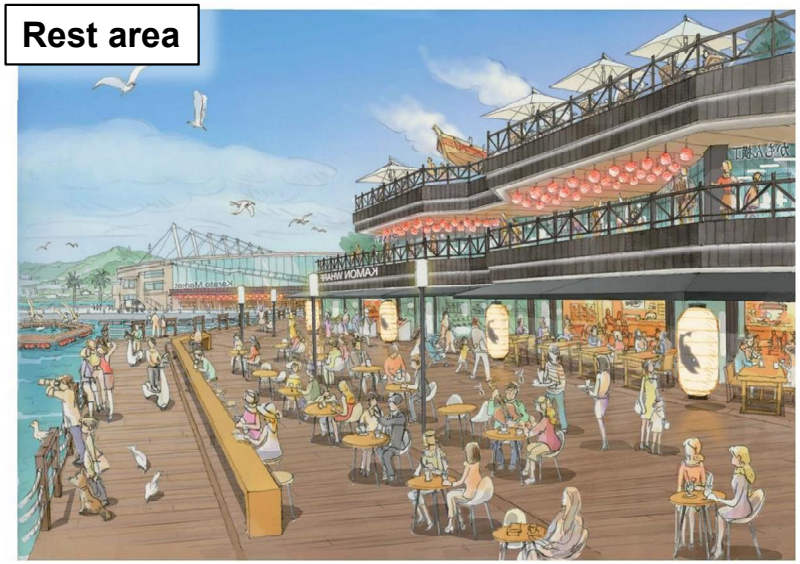
  Expanding the scope of administrative property that can be leased (In addition to land for building ownership purposes, open spaces such as squares and marine structures such as fishing piers can also be leased.)

- Special provisions for granting permission for occupancy in port areas.

  One-stop service for the necessary permit procedures to build marine structures such as fishing piers

Examples of public facilities to be developed by certified private operators (image)

Rest area



Information facilities

Ⅲ. Examples of recent port policies

Carbon Neutral Port (CNP) initiative illustrated

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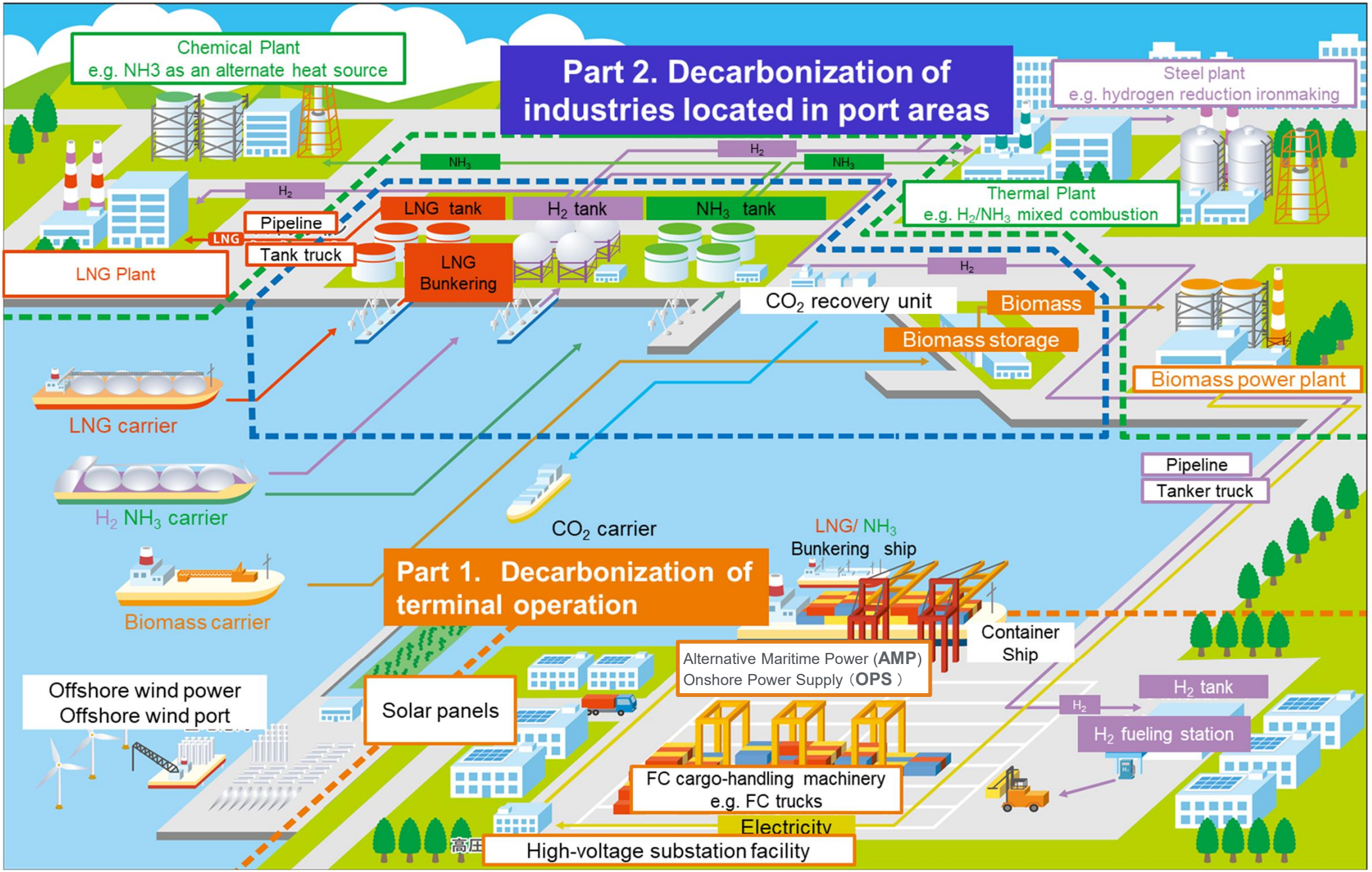


Part 1. Decarbonization of terminal operation

- Zero- and near zero-emission fuel bunkering facilities are essential in ports and harbors zero- and near zero-emission ship operations.
- **It is also important to reduce emissions from ports**, which are the nodal points between land and sea **to realize "Green Shipping Corridor"**.
- **MLIT promotes "Carbon Neutral Ports Initiative"**, including introduction of zero- and near zero-emission cargo handling equipment and onshore power supply facilities.

Support for zero- and near zero-emission fuel ships operation

Supplying zero- and near zero-emission fuel to ships

Source : Central LNG Marine Fuel Japan Co.

Decarbonization for port operation

Onshore power supply to vessels

RTG mounted with FC Power pack

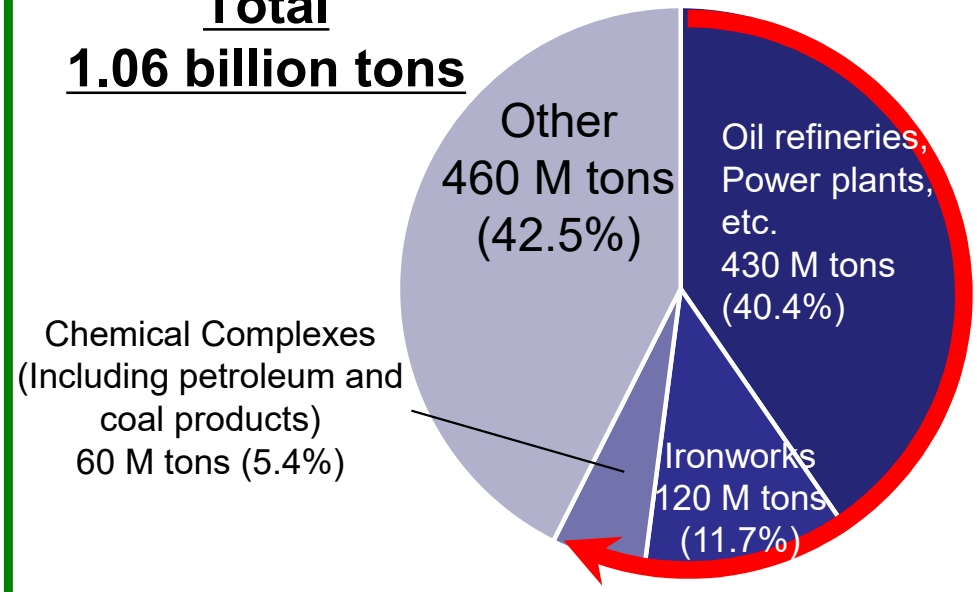
Source : MITSUI E&S Co., Ltd.

Part 2. Decarbonization of industries located in port areas

- In Japan, most refineries, power plants, ironworks, and the chemical industries are located in ports and coastal areas.
- It is necessary to support the reduction of GHG emissions from ports and coastal areas by facilitating the receiving and storing of hydrogen and/or ammonia in ports.

CO_2 emissions in Japan (2020)

Total 1.06 billion tons



[Source] Prepared by MLIT based on the website of National Institute for Environmental Studies

[Production]

Liquefaction plant

[Transportation]

Marine transportation

[Receive & Storage]

Terminal

Use (domestic)

Preparation for introduction of offshore wind power generation facilities

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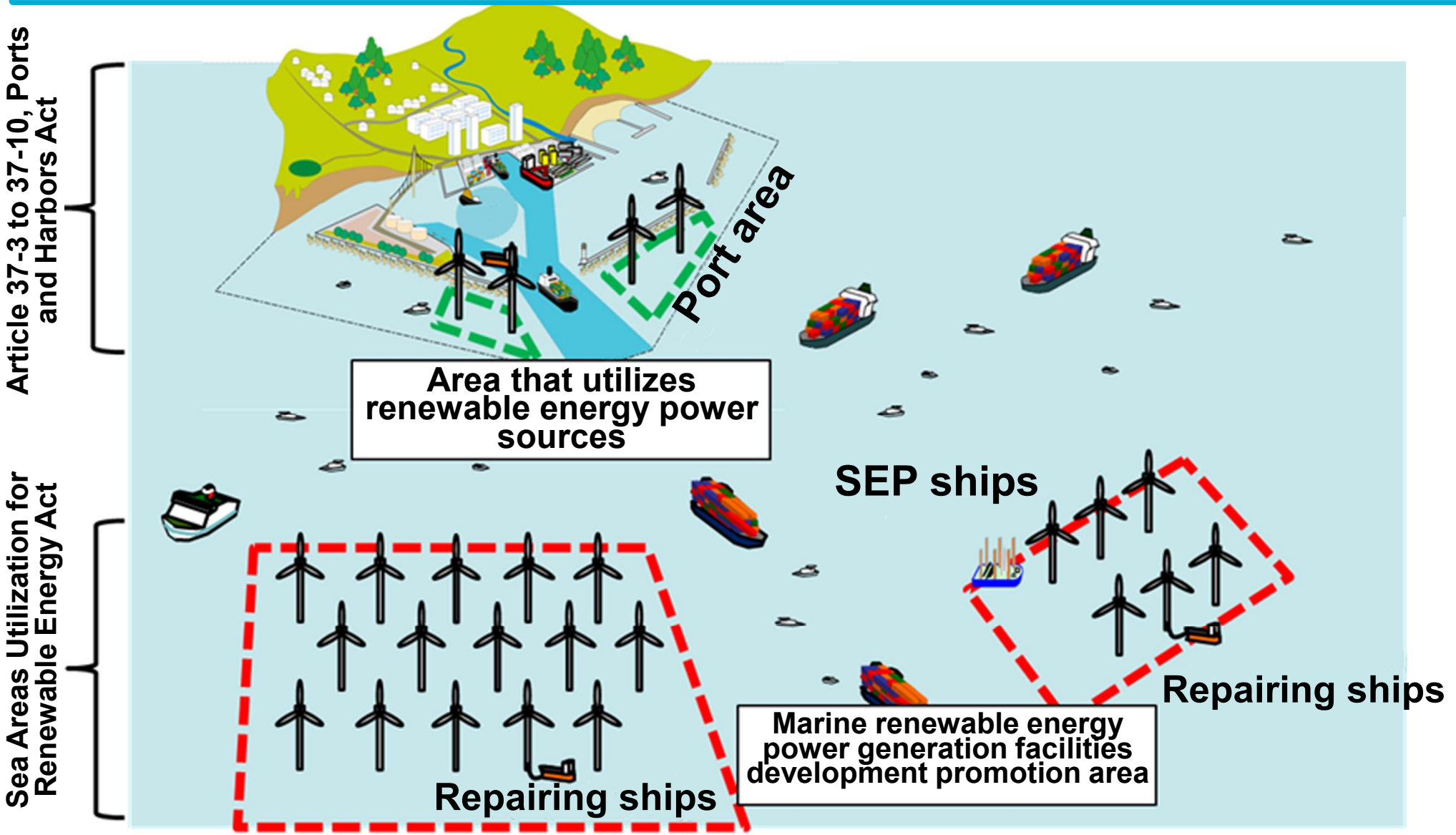
① **Introduction of offshore wind power generation facilities in port areas**
Revised Ports and Harbors Act (Came into force in July 2016)
② **Introduction of offshore wind power generation facilities in general sea area**
Sea Areas Utilization for Renewable Energy Act (Came into force in April 2019)
③ **Establishment of wharf lending system in base ports**
Revised Ports and Harbors Act (came into force in February 2020)



Promotion of utilization of offshore wind generation

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- Establish a system that allows power generation operators to occupy sea areas for decades in port areas and general sea areas.
- For port area, operators have been selected for 6 ports across Japan. Among them, Akita Port and Noshiro Port started operation in January 2023 as the ports used for the first commercial-base large-scale offshore wind power generation project in Japan.
- For general sea area, operators have been selected for 5 local areas (4 sea areas) throughout the country. Public offering of operators began in other 4 local areas at the end of December 2022.
- As the acceleration of project formation, utilization of offshore wind power generation will be promoted through systematic development of hub ports essential for the installation and maintenance of power generation facilities.

Location of promotion areas, etc. related to offshore wind generation (As of Dec. 2023)

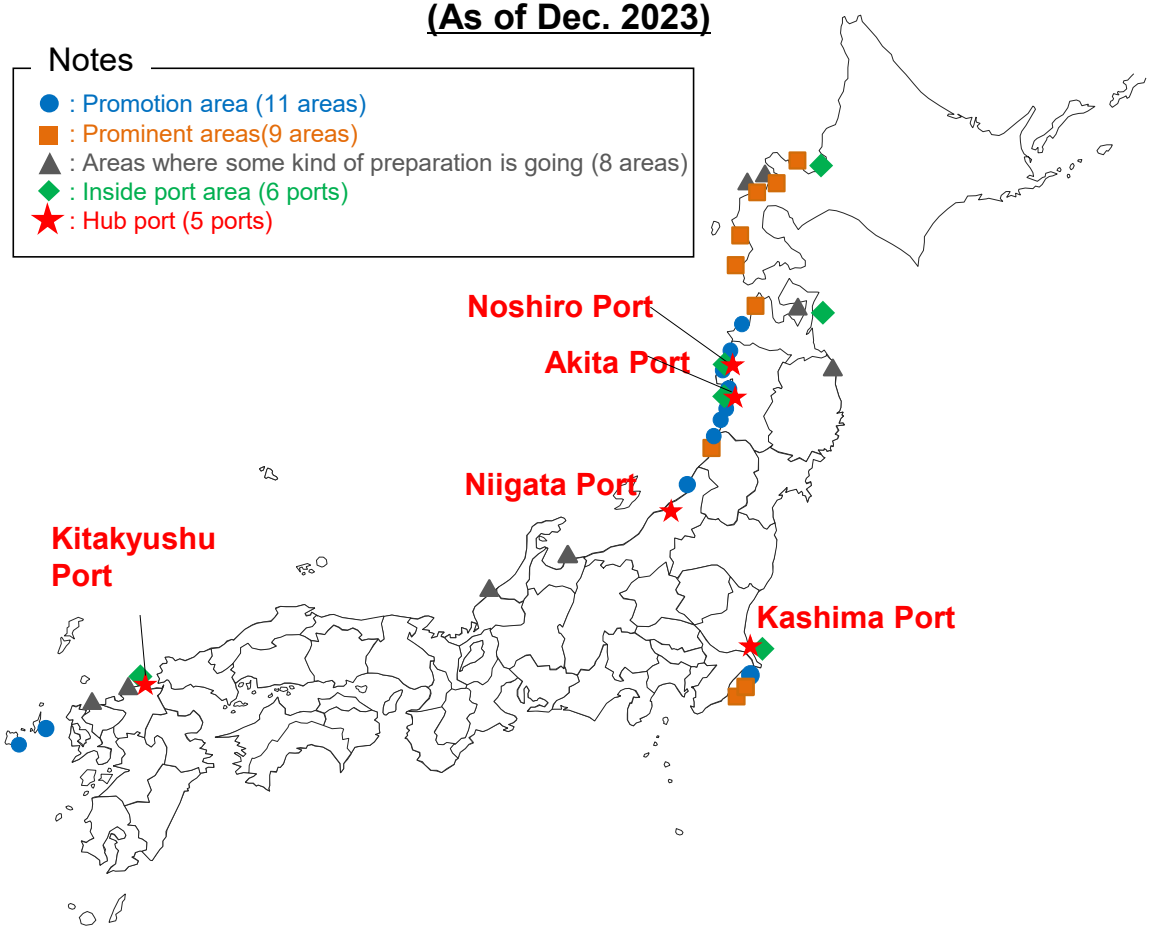
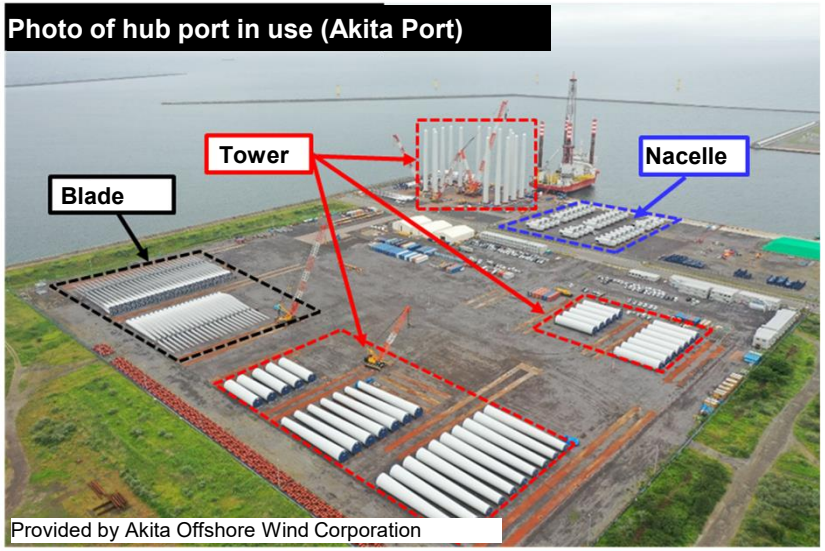


Photo of hub port in use (Akita Port)



Provided by Akita Offshore Wind Corporation

Photo by Akita Offshore Wind Corporation

Scale of hub ports (base ports) for offshore renewable energy power generation facilities, etc.

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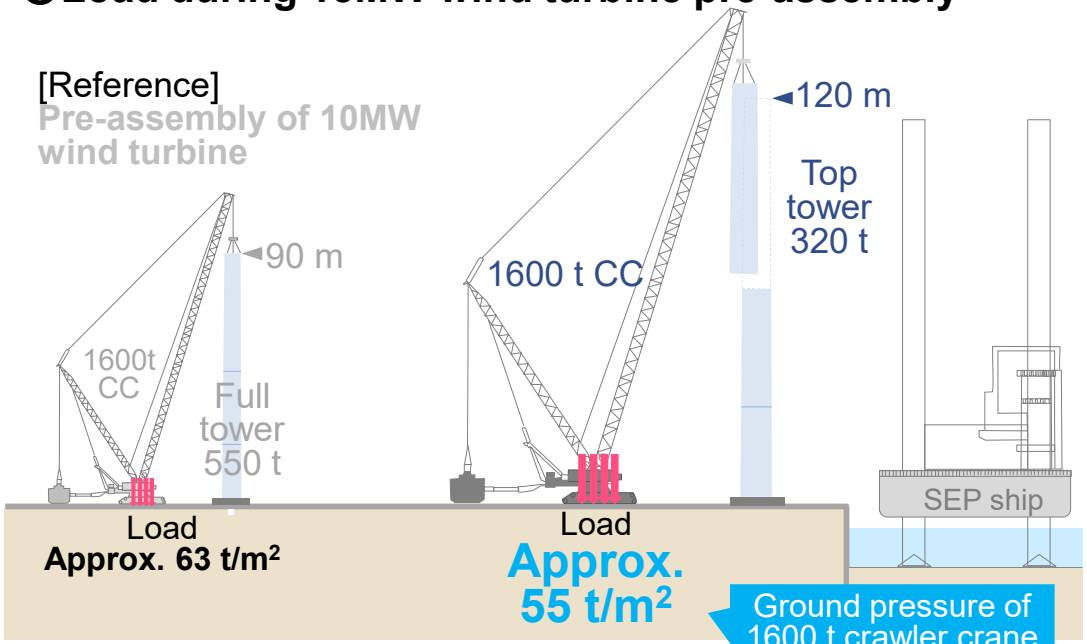
○The installation and maintenance of wind power generation facilities needs ports with wharves that meet the requirements for load-bearing capacity and size to handle heavy and large materials.

Load bearing capacity (Ground bearing capacity)

In order to support the pre-assembly of a 15 MW wind turbine, various construction techniques, such as load distribution using crushed stone with a ground bearing capacity of approx. 35 t/m², are needed.

* The ground bearing capacity for a standard container ship wharf is typically approx. 3 t/m².

○Load during 15MW wind turbine pre-assembly



Necessary land area

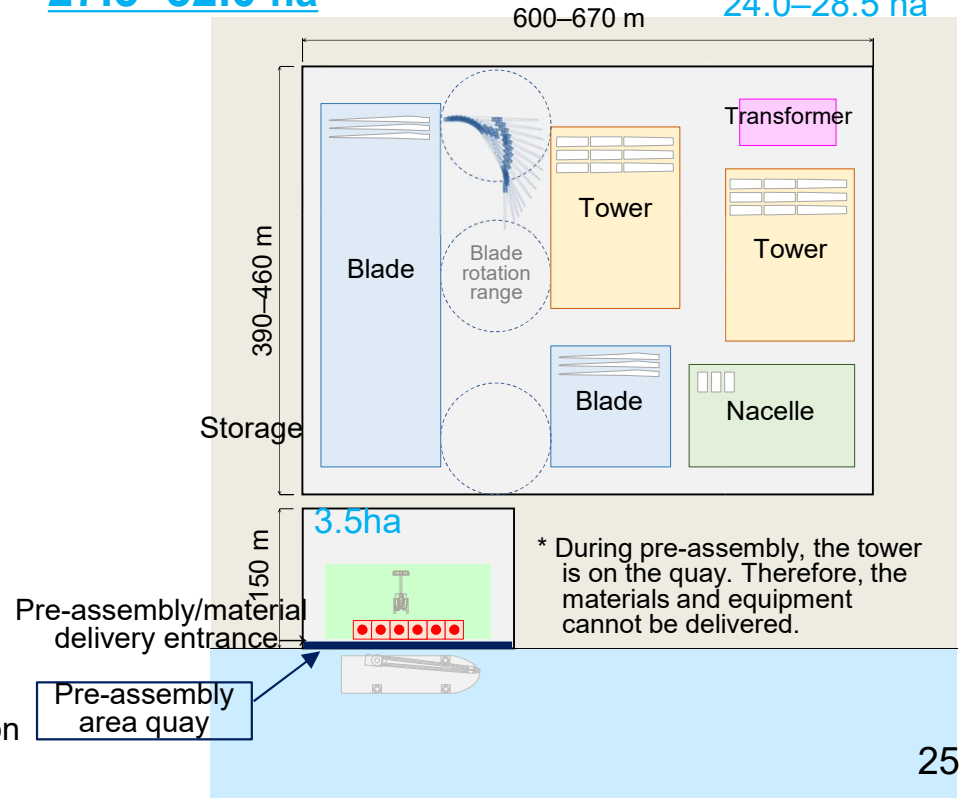
The land area required for the construction of a 500,000 kW power plant is **approx. 27.5–32 ha** when only using the wharf area for pre-assembly (PA).

* If simultaneous delivery of pre-assembly and materials is possible, such as by using adjacent wharves, it can be managed with a smaller area

[Wind turbine / tower installation]

land area needed

27.5–32.0 ha



- Accommodate a ground bearing capacity of 35t/m² through load distribution

“Blue infrastructure expansion project at ports to nurture life”

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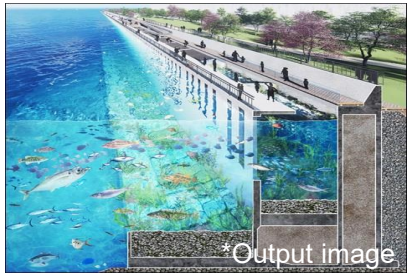
- The Ministry of Land, Infrastructure, Transport and Tourism started “Blue Infrastructure Expansion Project at Ports to Nurture Life” from the fiscal year 2022, with an aim to contribute to achieving carbon neutrality by expanding CO2 absorption sources using blue carbon ecosystems and to build rich marine environments through biodiversity.
- Defining seaweed beds, tidal flats, and bio-cohesive port structures are positioned as “Blue Infrastructure,” short-term, intensive efforts to create an environment conducive to the conservation, restoration, and creation of Blue Infrastructure are promoted to expand them to seas across Japan.

Blue infrastructure

[Seagrass bed]

[Seaweed bed]

[Mudflat]



[Bio-cohesive port structure]

[Primary initiatives]

① Promotion of pioneering initiatives in blue carbon (nationwide)

・Establishment of organizations aimed at facilitating exchange among stakeholders (formation of alliances) and the creation of matchmaking support websites

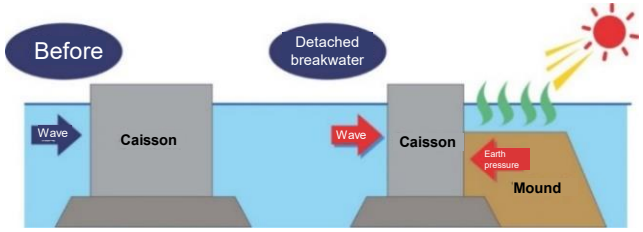
② Examine a simple calculation method to estimate the expansion effect of greenhouse gas absorption sources

・Develop drones capable of efficiently monitoring the growth of seaweed beds using green laser technology that can penetrate underwater

Drone (prototype)

③Strengthen measures related to environmental conservation in the design and construction of port facilities.

・Consider standardizing structures to be biologically coexisting.



Develop shallow areas on the land side by innovating the breakaway structure

Ⅳ. Cooperation between Viet Nam and Japan

Establishment of Vietnamese port management system as a result of technical cooperation project

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Project for improvement of port management system in Vietnam

- Project for improvement of management system in Viet Nam was undertaken between 2005 and 2009, while MLIT participated as a survey team.
- The main objectives are:

  1) improving the port management capabilities of VINAMARINE, and

  2) enhancing the efficiency of port operations through the entry of the non-government sector, using Cai Mep Thi Vai International Port as a model case.
- After the project, Vietnam Maritime Code was amended in 2015, leading to the establishment of a port management system in Vietnam.

Discussion memorandum sign/exchange

Joint Coordinating Committee (JCC) meeting

Reference: https://openjicareport.jica.go.jp/pdf/11955044_01.pdf

Introduction and current status of port technology standards

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Update of the memorandum of understanding regarding establishment of port standards in Vietnam

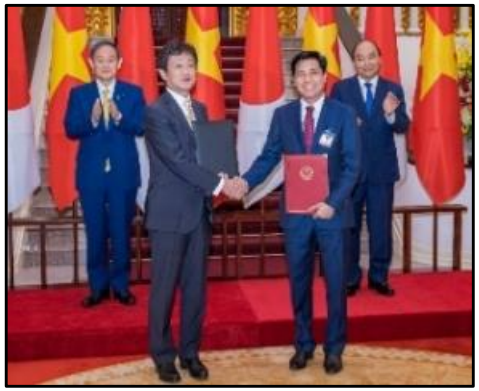

Photo at the memorandum exchange in October 2020

Discussion with Vietnam

①Promote the international standardization of Japan's technical standards
②Apply the method for developing Vietnam's national technical standards to support the development of technical standards in other Asian countries

○Customize to suit the circumstances of the partner country

○Actively expanding to other countries

Example of the development of industrial-location-type port (Lach Huyen International Gateway Port)

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Overview

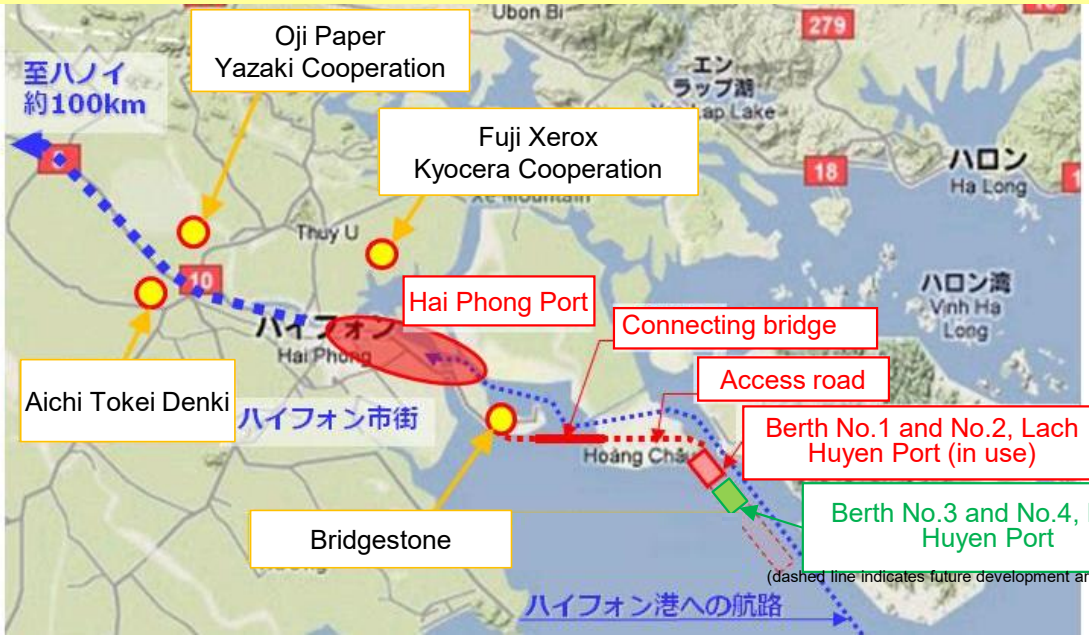
Lach Huyen Port has been separated into a public investment portion to be developed with a yen loan and a private investment portion to be developed and operated by a Japan-Vietnam joint venture.

Public portion: breakwaters, dredging and land reclamation facilitated by yen loans

Private portion: quays, cargo handing machinery and operation

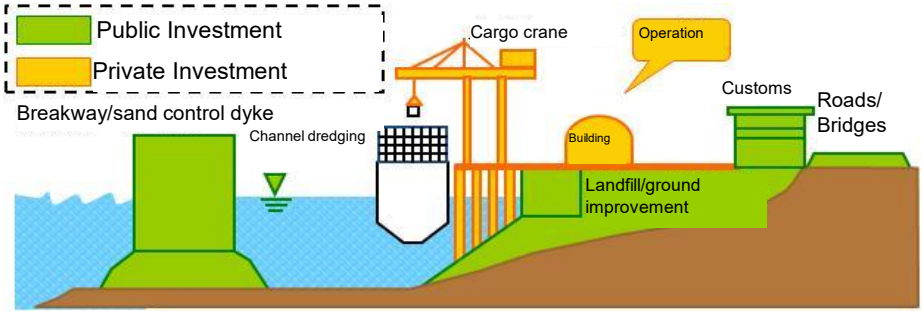
Operation started in 2018

Project-related locations and names of major companies in the area



● Project Overview

Container terminal (Pier length: 750 m (2 berths))
Quay depth: 14 m; channel depth: 14 m;
breakwater: 3,230 m; sediment control groin: 7,600 m



Role sharing between public and private sectors at Lach Huyen Port (vertical separation system)

* Tied by STEP (e.g., ground improvement method, steel pipe sheet pile well foundations)