Port of Tokyo Carbon Neutral Port (CNP) Implementation Plan 2.0

<Port of Tokyo Port Decarbonization Plan>

March, 2026

Tokyo Metropolitan Government

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Objective of the Port of Tokyo Carbon Neutral Port Implementation Plan 2.0 (Port of Tokyo Port Decarbonization Plan)

The Tokyo Metropolitan Government (TMG) has set a goal of achieving “carbon half” by 2030, with the aim of becoming fully carbon neutral (net zero CO_2 emissions) by 2050, and the entire TMG is working to reduce CO_2 emissions.

Given the role of ports as hubs for logistics and energy supply, there is a strong need to balance reductions in environmental impact with sustainable development. The presence or absence of environmental considerations and decarbonization initiatives is also an increasingly major factor for shippers and shipping companies when selecting a port.

As the gateway to Japan's capital, the Port of Tokyo is a driving force behind the country’s economic growth, and a core piece of social infrastructure that supports citizens’ livelihoods. As such, the port’s decarbonization is a matter of great significance for the sustainable growth of Japan as a whole and for improving its international competitiveness.

In March 2023, the “Port of Tokyo Carbon Neutral Port (CNP) Implementation Plan” was formulated to strategically promote decarbonization, and various related measures are underway, including the introduction of green energy (electricity supplied from renewable sources) to all container terminals, and promotion for the uptake of decarbonized cargo handling machinery.

However, with only a short time left before 2030, and in light of changing social conditions and domestic and international trends toward port decarbonization, the Port of Tokyo faces the need to become ever more proactive in promoting decarbonization.

Plans are also in place to reorganize and upgrade Oi Terminal, the port’s main wharf, not only to increase the volume of containerized cargo handled by augmenting facility capacity, but also to reduce vehicle congestion by relocating waiting zones and introducing a terminal reservation system, alongside the digitization of container loading slips that are currently processed as paper documents. This reorganization will function to advance digital transformation (DX) and logistics efficiency, working towards the achievement of decarbonization goals.

Based on the aforementioned, TMG is updating the Port of Tokyo CNP Implementation Plan to define new decarbonization initiatives for the Port of Tokyo, and will be working together with the private sector—namely, port transport business operators, shipping companies, and truck operators that utilize the port—to realize a decarbonized Port of Tokyo.

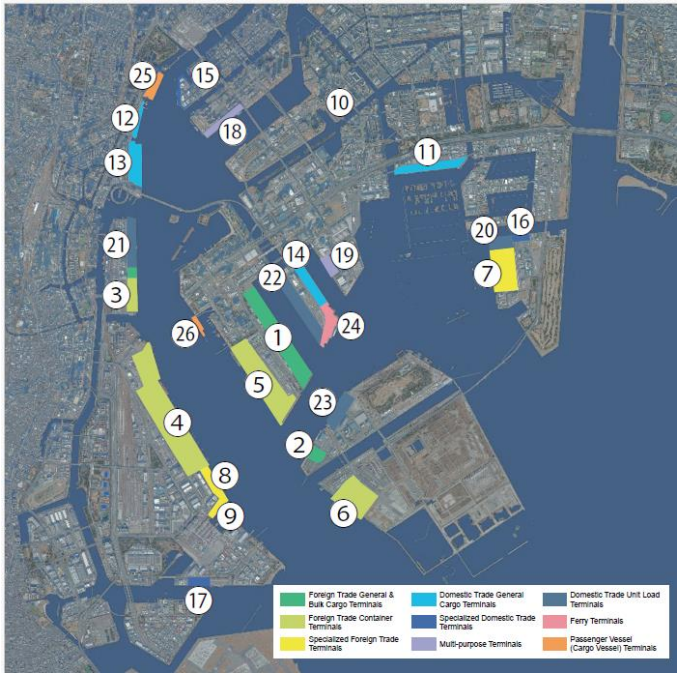
* The Port of Tokyo CNP Implementation Plan 2.0 is a “port and harbor decarbonization plan” pursuant to Article 50-2 of Japan’s Port and Harbor Act.

1 Overview of the Port of Tokyo

1.1 Features of the Port of Tokyo

（1）Role of the Port of Tokyo

The Port of Tokyo is among Japan's largest international ports, servicing the Tokyo metropolitan area, which hosts a population of approximately 40 million people. It functions as a central logistics hub connecting domestic and overseas markets, with large warehouses and sophisticated distribution centers clustered around each of its terminals. Furthermore, a cruise ship terminal and passenger facilities also enable it to serve as a base for tourism and international exchange. As such, the Port of Tokyo is an extremely vital part of Japan's social infrastructure, supporting urban activity through both the flow of goods and the flow of people.



List of Main Terminals at the Port of Tokyo

Area	No.	Name of Terminal
Foreign Trade General & Bulk Cargo Terminals	①	Odaiba Liner Terminal
	②	Bulk Cargo Terminal of Inner-Central Breakwater Reclamation Area
Foreign Trade Container Terminals	③	Shinagawa Container Terminal
	④	Oi Container Terminal
	⑤	Aomi Container Terminal
	⑥	Outer Central Breakwater Container Terminal
Specialized Foreign Trade Terminals	⑦	No. 15 Lumber Terminal
	⑧	Oi Marine Products Terminal
	⑨	Oi Foodstuffs Terminal
Domestic Trade General Cargo Terminals	⑩	Toyosu Terminal
	⑪	Tatsumi Terminal
	⑫	Hinode Terminal
	⑬	Shibaura Terminal
	⑭	No. 10 Terminal (East)
Specialized Domestic Trade Terminals	⑮	Tsukishima Terminal
	⑯	Wakasu Construction Material Terminal
	⑰	Oi Construction Material Terminal
Multi-Purpose Terminals	⑱	Harumi Terminal
	⑲	No. 10-1 Multi-purpose Terminal
Domestic Trade Unit Load Terminals	⑳	Wakasu Domestic Trade Terminal
	㉑	Shinagawa Terminal (Domestic Trade)
	㉒	No. 10 Terminal (West)
	㉓	Domestic Trade Terminal of Inner Central Breakwater
Ferry Terminals	㉔	Ferry Terminal
Passenger Vessel (Cargo Vessel) Terminals	㉕	Takeshiba Terminal
	㉖	Tokyo International Cruise Terminal (Passenger Vessels)

Figure 1-1: Overview of the Port of Tokyo

In 2024, the port handled approximately 83 million tons of cargo, with trade volume reaching around 24 trillion yen—the highest among domestic ports. As one of the country's leading ports, it drives the Japanese economy and underpins the livelihoods of citizens.

In the event of a large-scale disaster in the Tokyo metropolitan area, the port is able to function as a marine transportation base for the rapid transport of relief supplies to and from various regions, and will also serve to maintain the logistics activities needed to prevent ensuing economic stagnation.

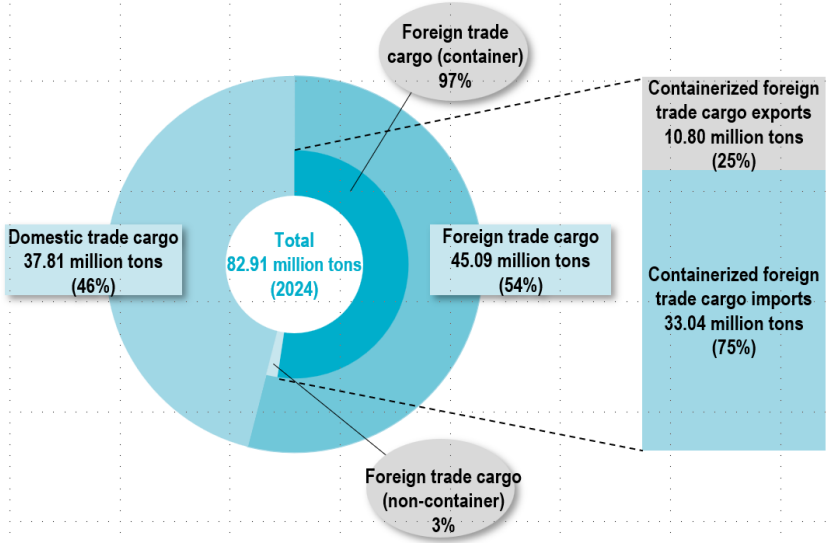


Figure 1-2: Cargo Volume Handled at the Port of Tokyo (2024)

Source: Created by TMG from "Port of Tokyo Status (2024)"

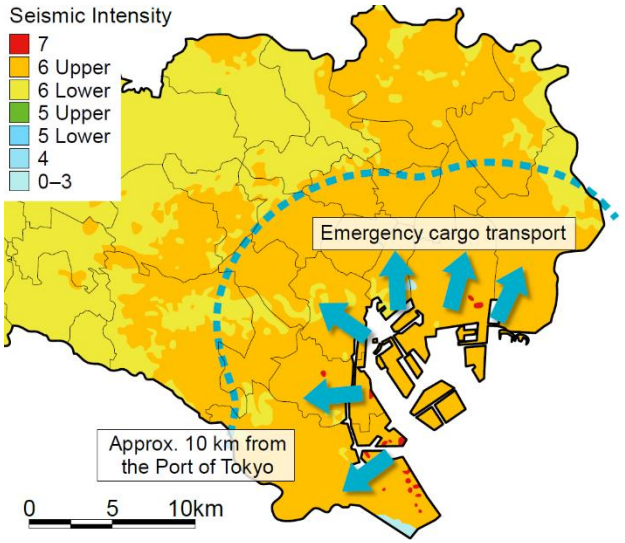


Figure 1-3: Transport of Emergency Supplies from the Port of Tokyo

Source: Actions for the Port of Tokyo following an earthquake directly under the Tokyo metropolitan area (March 2013)

Unit: Millions of yen

Rank	Port/Harbor	Prefecture	Total	Exports	Imports
1	**Port of Tokyo**	**Tokyo**	**24,620,172**	**8,164,996**	**16,455,176**
2	Port of Nagoya	Aichi	23,735,237	16,165,927	7,569,310
3	Port of Yokohama	Kanagawa	14,838,023	8,538,595	6,299,428
4	Port of Kobe	Hyogo	12,048,322	7,374,666	4,673,656
5	Port of Osaka	Osaka	11,004,894	4,638,977	6,365,917
6	Port of Chiba	Chiba	6,639,348	1,340,826	5,298,522
7	Port of Hakata	Fukuoka	6,110,717	4,617,600	1,493,117
8	Port of Mikawa	Aichi	4,606,909	3,741,291	865,618
9	Port of Kawasaki	Kanagawa	4,141,655	1,269,291	2,872,364
10	Port of Yokkaichi	Mie	3,520,687	1,121,616	2,399,071

Table 1-1: Trade Amount Rankings (Monetary Value)

Source: Compiled from trade statistics (FY2024)

（2）Trends in Foreign Trade Cargo

Of the approximately 45 million tons of foreign trade cargo handled by the Port of Tokyo in 2024, 97% was transported in containers; this comprised a volume of 4.17 million TEUs (twenty-foot equivalent units) of containerized foreign trade cargo.

Backed by a major consumption center, the port's functionality is strongly focused on imports, receiving goods essential for urban activity and daily life in the Tokyo metropolitan area, and its import-to-export ratio is approximately 3:1.

In terms of the share of cargo handled, daily commodities such as foodstuffs and furniture comprise a large portion of imports, while high-value-added products such as industrial machinery and automotive parts are strongly represented among exports. As a distribution hub for such goods, the port is a significant contributor to citizens' livelihoods and industrial activities in Japan.

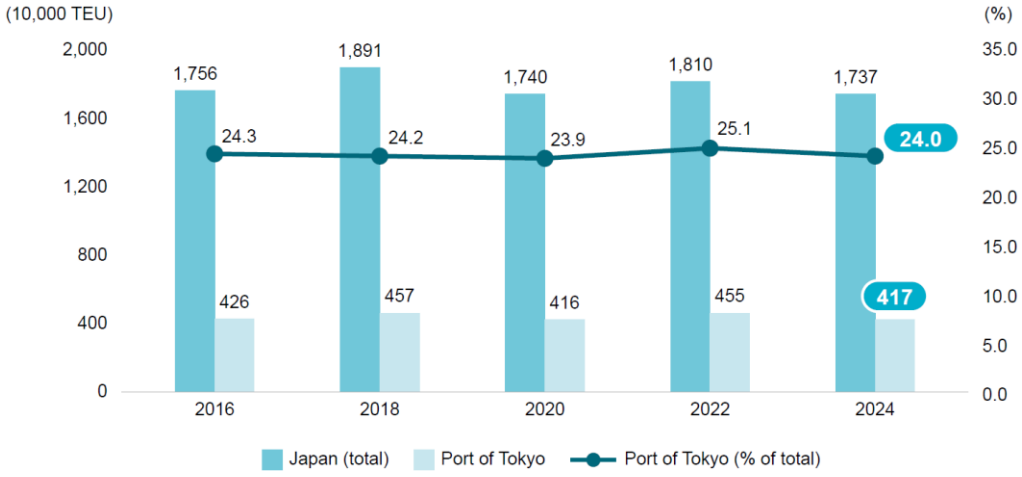


Figure 1-4: Share of Japan's Foreign Trade Container Cargo Handled by the Port of Tokyo

Source: Created by TMG based on "Port of Tokyo Status" and Port Modernization Promotion Council materials

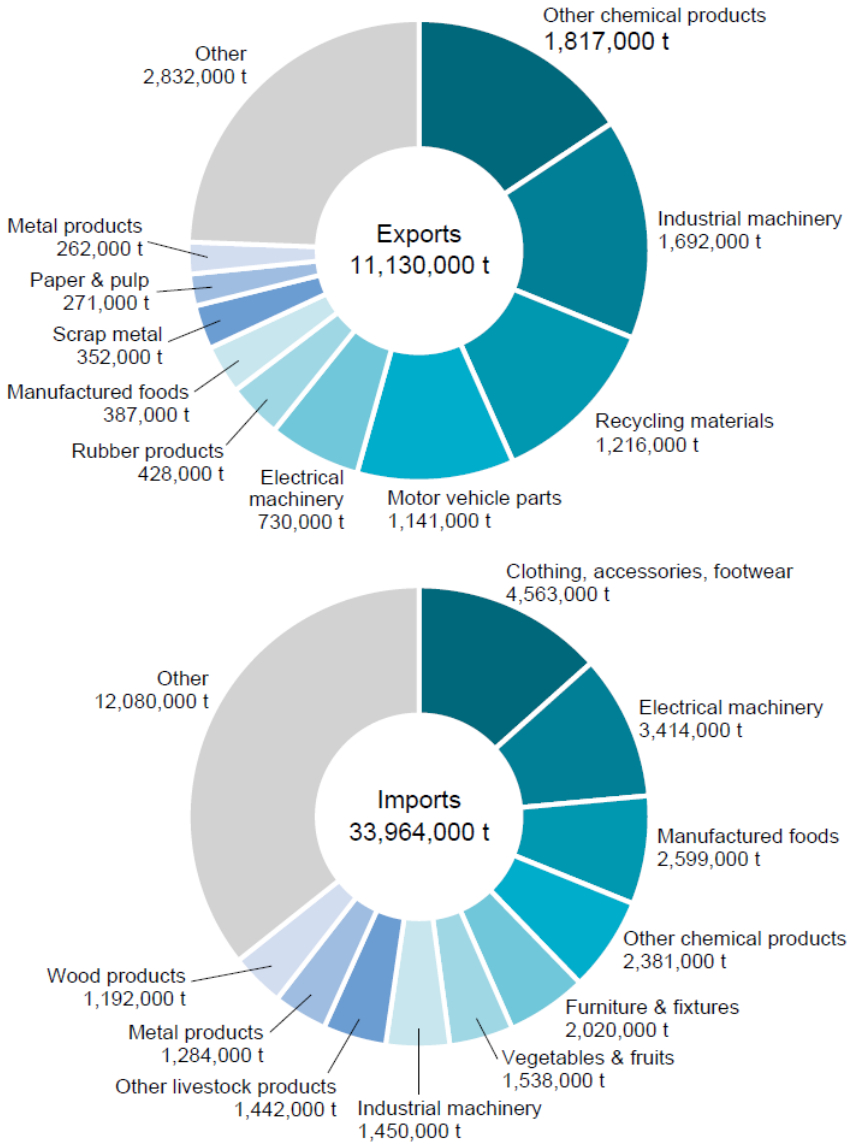


Figure 1-5: Share of Containerized Foreign Trade Cargo by Category

Source: Created by TMG from "Port of Tokyo Status (2024)"

（3）Trends in Domestic Trade Cargo

The Port of Tokyo also plays an important role as a hub for coastal marine transportation in Japan, and handled approximately 38 million tons of domestic trade cargo in 2024.

In addition to regular RORO (roll-on/roll-off) vessel and ferry services connecting production and consumption areas nationwide with the Tokyo metropolitan area, a robust feeder transport network primarily links ports along the Pacific coast of eastern Japan. In order to improve logistics efficiency and reduce environmental impact while facilitating import/export connections between domestic regions and the rest of the world, support for private operators undertaking a modal shift from trucking to shipping (domestic marine container transport) is also provided. Furthermore, the port serves as a transportation hub for delivering daily necessities and passengers to Tokyo's island regions, contributing to the betterment of island residents' lives and promoting local industry.

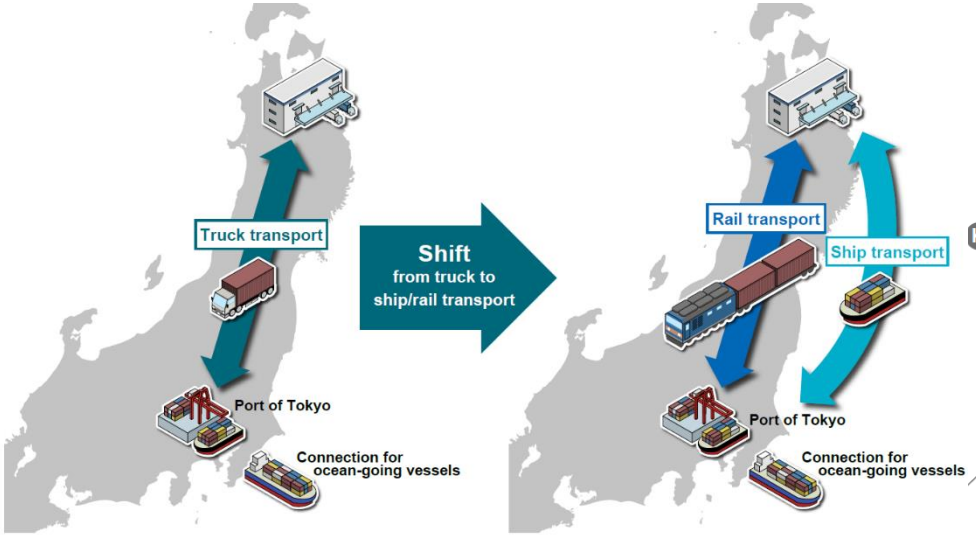


Figure 1-6: Modal Shift with Coastal Vessels and Railways

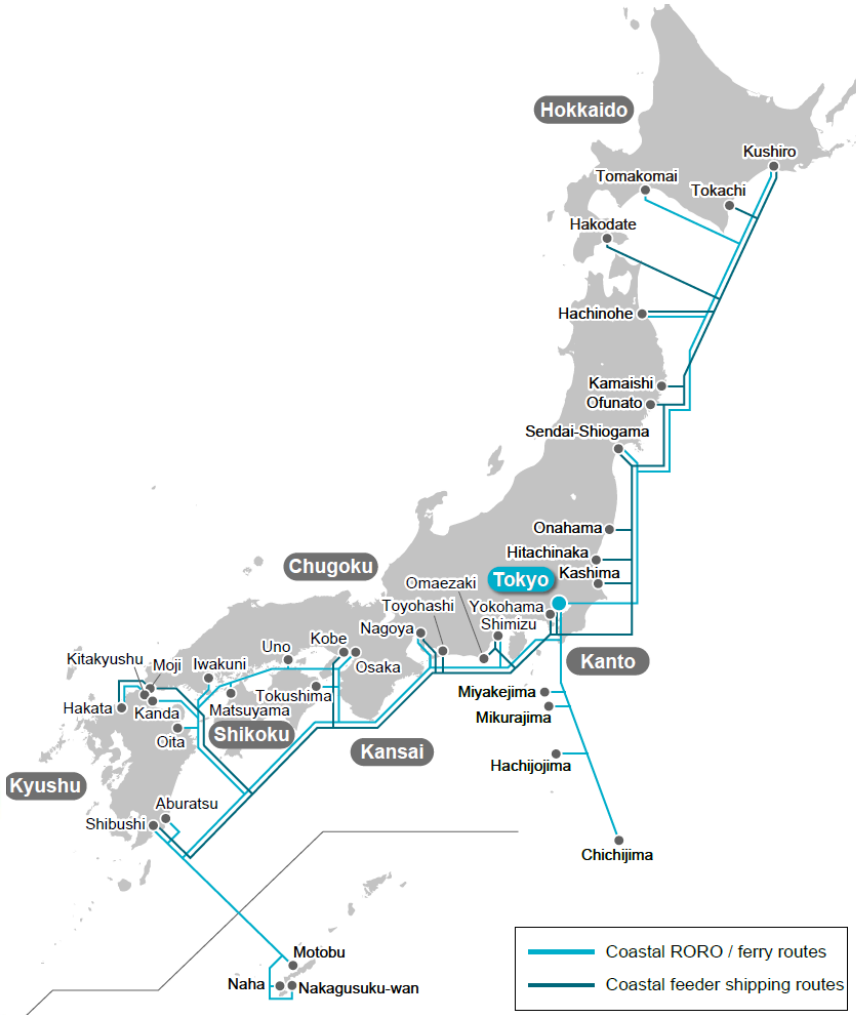


Figure 1-7: Domestic Shipping Routes Serving the Port of Tokyo

Source: Created based on TMG “List of Major Coastal Service Routes” webpages (Coastal RORO, Ferry; Coastal feeder)”

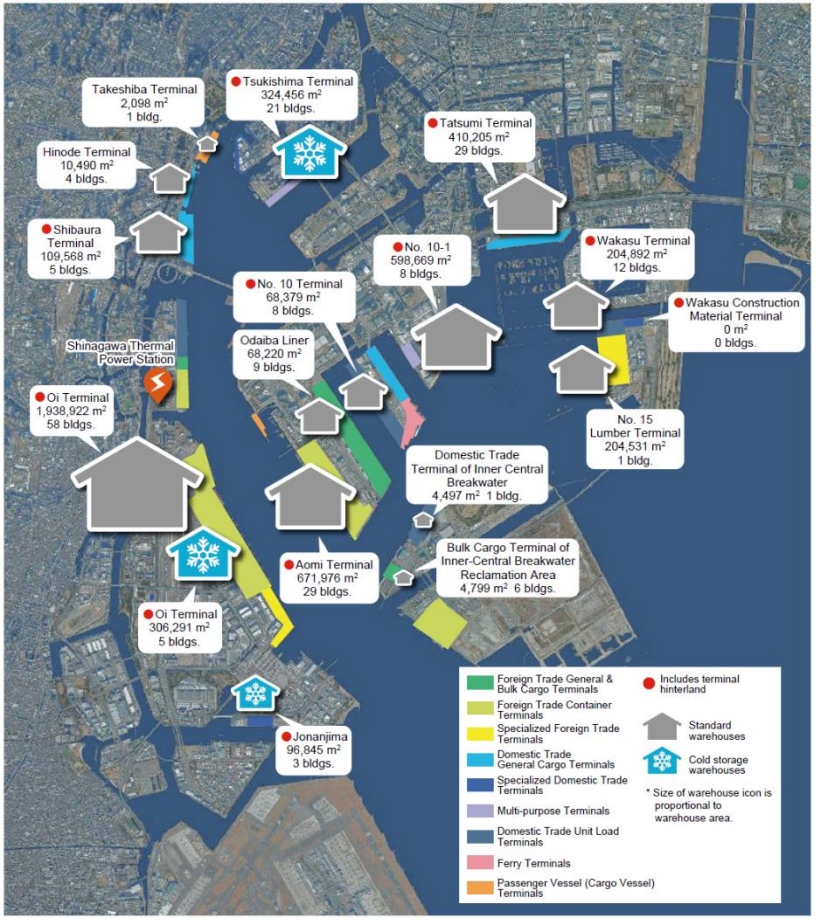
（4）Status of Areas Surrounding Terminals

A number of logistics facilities that handle sea cargo, including warehouses and cold stores, are found on land adjacent to the terminals, with clusters of warehouses having formed in some areas of the port.

These facilities handle storage and inbound/outbound logistics for most cargo handled at the Port of Tokyo, which is transported among the various terminals and out to Japan's regions.

In addition to logistics functions, there are also cement-related factories and energy facilities, namely thermal power plants located at the Oi and Shinagawa Terminals.

As of 2025, only the Shinagawa Thermal Power Station is in operation.



Warehouses & cold stores behind Oi Terminal
Source: Aerial photograph from the TMG Bureau of Port and Harbor website

Shinagawa Thermal Power Station
Source: JERA Co., Inc. website

Warehouse cluster adjacent to Aomi & Odaiba Liner Terminals
Source: Aerial photograph from the TMG Bureau of Port and Harbor website

Figure 1-8: Distribution of Warehouses and Other Facilities in the Hinterlands of the Port of Tokyo

（5）Road & Rail Network Supporting the Port of Tokyo

Connecting to the port is a well-developed road network, starting from the capital city of Tokyo, that is used by a plethora of shippers and logistics companies in the Tokyo metropolitan area and across eastern Japan.

In addition, the Tokyo Freight Terminal, located near the Oi Container Terminal, operates a regular service for the transport of shipping containers by rail to and from the Morioka Freight Terminal, which can transport 40ft high cube containers, and is connected to major regions throughout Japan by the greater rail network.

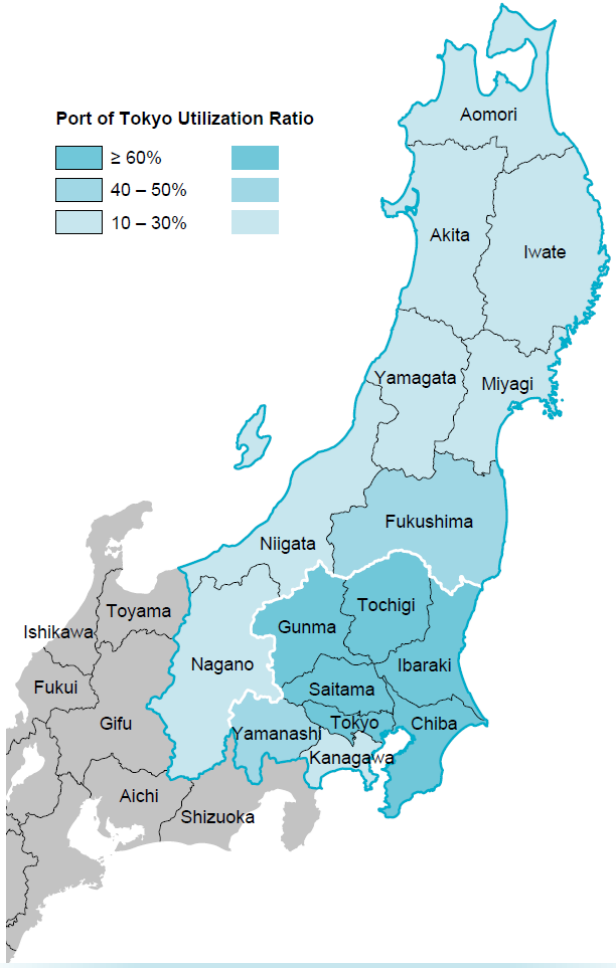


Figure 1-9: Tokyo Port Utilization in East Japan (2023)

Source: “National Survey on Import/Export Containerized Freight Flows” (FY2023)

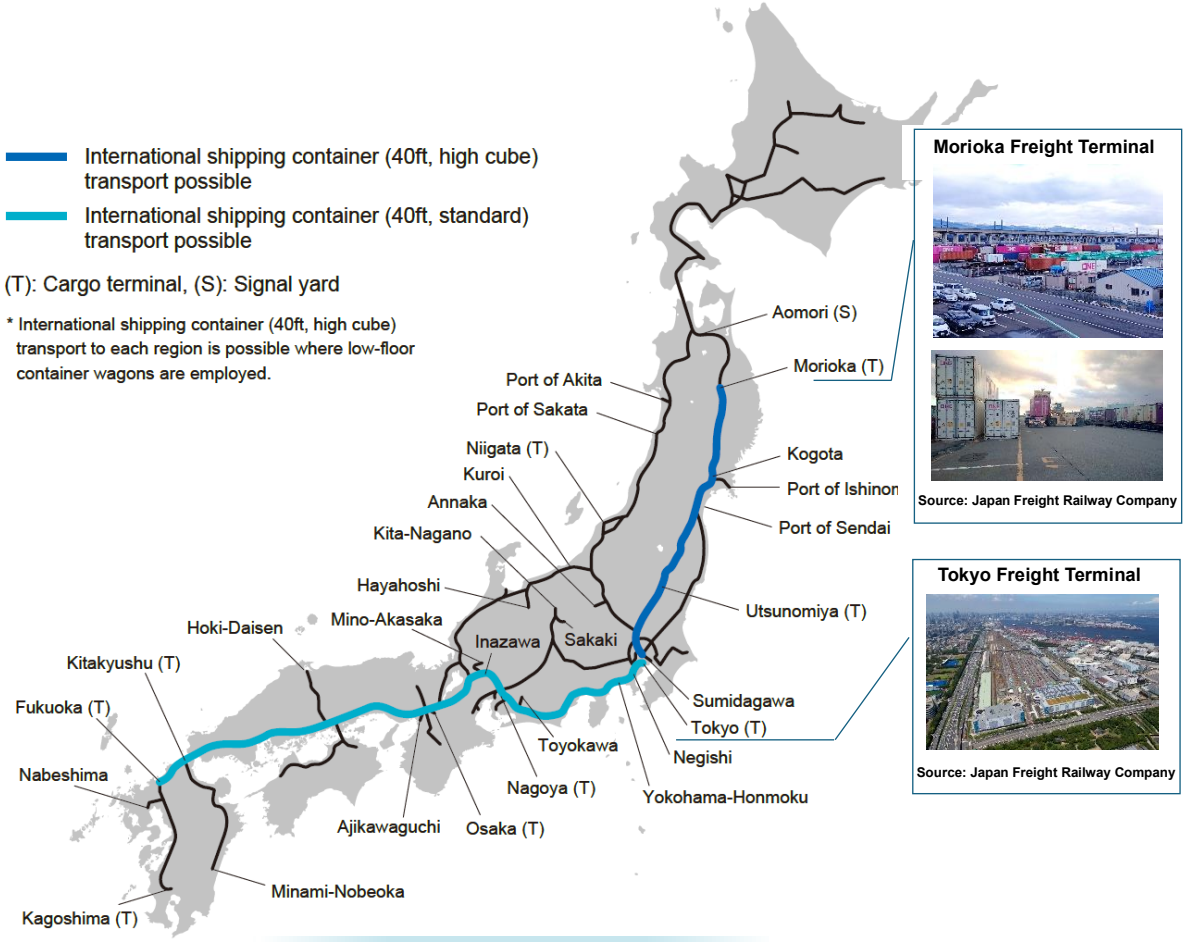


Figure 1-10: Rail Network Diagram

Source: Materials provided by Japan Freight Railway Company

1.2 Positioning of Port Decarbonization Initiatives in the Port Plan and Local Government Action Plans Under the Act on Promotion of Global Warming Countermeasures

（1）Positioning of Port Decarbonization Initiatives in the Port Plan

The Port of Tokyo 9th Revised Port Plan (November 2023) sets forth a target period of around the years 2033 to 2037, and the basic philosophy “Port of Tokyo, an ever-evolving port that creates the future: Realization of a Smart Port”. On the environmental front, in order to create “A Green Port for the Future,” based on the Port of Tokyo CNP Implementation Plan, the city will promote the use of next-generation and renewable energy, as well as initiatives to decarbonize port facilities, such as supplying vessels with shoreside power to negate the need for idling.

（2）Positioning of Port Decarbonization Initiatives in Local Government Action Plans Under the Act on Promotion of Global Warming Countermeasures

In March 2021, TMG formulated a "Zero Emission Metropolitan Government Action Plan" to guide the operations of the prefecture and municipality as stipulated in Article 21 of the Act on Promotion of Global Warming Countermeasures, and is taking initiative in curbing greenhouse gas emissions.

In September 2022, a new "Tokyo Metropolitan Government Basic Environmental Plan" was also formulated as an action plan to guide the policy of local government. By mitigating the risks of climate change and promoting measures for recycling of resources that take into account all stages of the supply chain, TMG aims to achieve net zero emissions by 2050, as well as carbon half (compared to 2000 levels) by 2030, being the key to achieving the former goal.

In March 2025, the "Zero Emission Tokyo Strategy: Beyond Carbon Half" was formulated to further accelerate efforts amid the worsening climate crisis and major changes in social conditions. A new goal of reducing greenhouse gas emissions by at least 60% by 2035 was set by TMG, with Tokyo pitched to become a "decarbonized city" that serves as a model for the rest of the world.

（3）Positioning of Port Decarbonization Initiatives in the Tokyo Container Vision 2050

The "Tokyo Container Vision 2050" was formulated in March 2025 to show a future vision for the Port of Tokyo's container terminals in 2050, a direction to be aimed for, and a path to be taken to achieve this. The future vision for 2050 outlined therein is to achieve world-class efficiency and sustainability through a resolute strengthening of the functions of the Port of Tokyo, to drive Japan's economic growth and protect the livelihoods of its citizens as a nucleus of the global supply chain, and to hold the direction of becoming a sustainable "zero emission terminal" with low environmental impact.

Figure 1-11: Depiction of Oi Container Terminal After Large-Scale Renewal

（4）Scope of Plan

In principle, the scope of this plan covers the waterfront districts and port zones designated as subdivisions, as follows.
This plan's scope is to be reviewed as necessary when deemed appropriate.

Category	Scope
Terminals (inside terminals)	Terminals managed and operated by the Port & Harbor Administrator, Tokyo Port Terminal Corporation, and private companies
Terminal hinterland (outside terminals)	Business activities of private companies (warehouses, cold stores, factories, etc.) located behind the terminals and using the Port of Tokyo for their business
Vessels / Vehicles	Logistics activities in the Port of Tokyo by vessels (marine transport) and vehicles (truck transport) conducted via the terminals

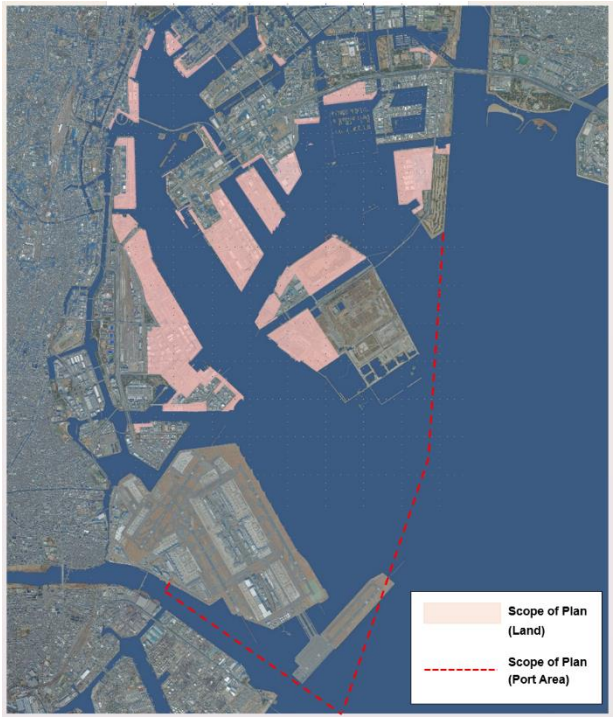


Figure 1-12: Scope of the Port of Tokyo CNP Implementation Plan 2.0

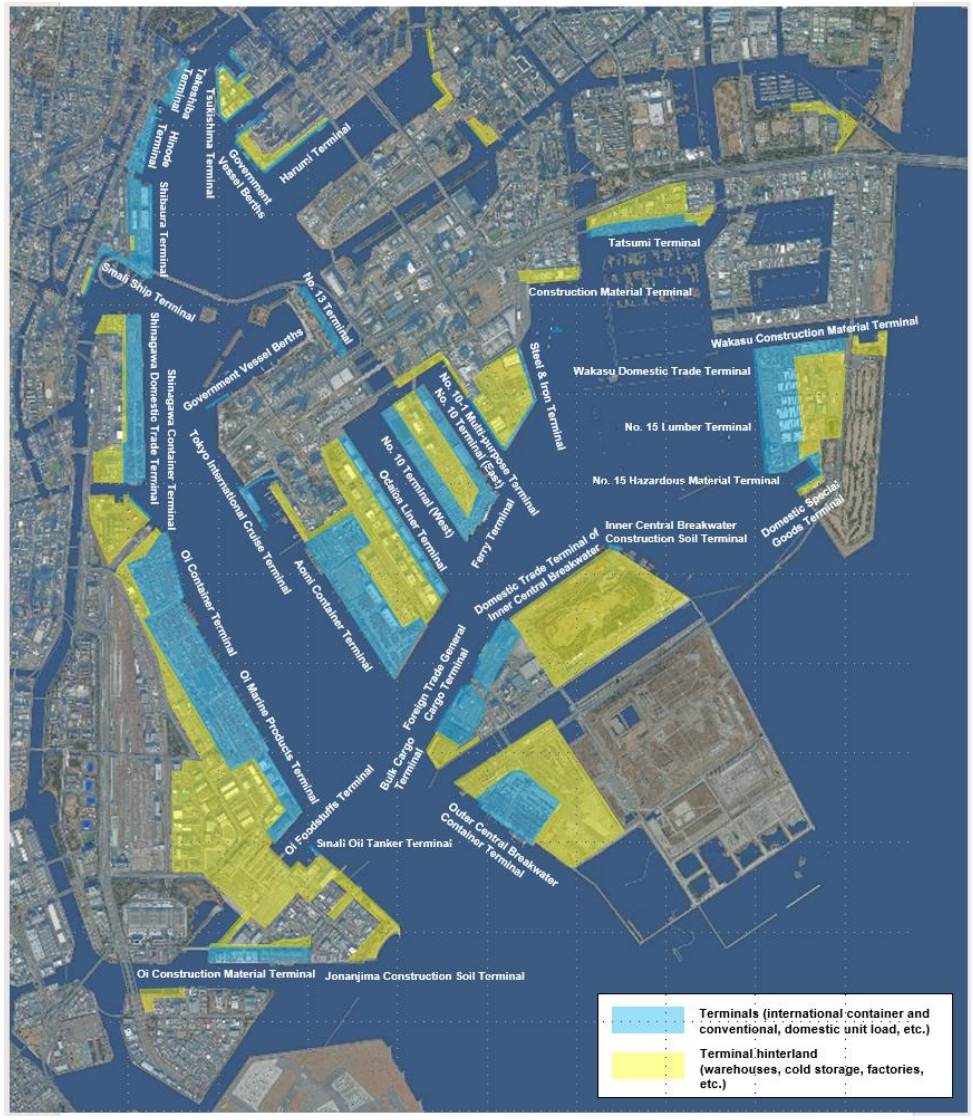


Figure 1-13: Land Classification

Table 1-2: Facilities and Administrators in Scope of Plan (1/2)

Category			Target Facilities, etc.	Owner/Administrator
Terminals (inside terminals)	Foreign Trade Container Terminals	Shinagawa Container Terminal, Oi Container Terminal, Aomi Container Terminal, Outer Central Breakwater Container Terminal	Cargo handling machinery (gantry cranes)	Tokyo Port Terminal Corporation
			Cargo handling machinery (in-yard machinery)	Shipping companies, port transport business operators
			Sheds, warehouses	Port & Harbor Administrator, port transport business operators
			Refrigerated container power source, administration buildings, lighting facilities, etc.	Tokyo Port Terminal Corporation, shipping companies, port transport business operators
	Foreign Trade Conventional Terminals	Odaiba Liner Terminal, Bulk Cargo Terminal of Inner-Central Breakwater Reclamation Area, Oi Marine Products Terminal, Oi Foodstuffs Terminal, No. 15 Lumber Terminal	Cargo handling machinery (in-yard machinery)	Port transport business operators
			Sheds	Port & Harbor Administrator, Tokyo Port Terminal Corporation, port transport business operators
			Consignor contact office, lighting facilities, etc.	
	Domestic Trade Unit Load Terminals	Shinagawa Terminal, No. 10 Terminal (West), Wakasu Domestic Trade Terminal, Domestic Trade Terminal of Inner Central Breakwater	Cargo handling machinery (in-yard machinery)	Port transport business operators
			Sheds	Port & Harbor Administrator, port transport business operators
			Refrigerated container power source, administration buildings, lighting facilities, etc.	
	Domestic Trade Conventional Terminals	Takeshiba Terminal, Hinode Terminal, Shibaura Terminal, Tatsumi Terminal, Tsukishima Terminal, Harumi Terminal, No. 10 Terminal (East), Ferry Terminal, No. 10-1 Multi-purpose Terminal, Oi Construction Material Terminal, Wakasu Construction Material Terminal, Jonanjima Construction Soil Terminal, Inner Central Breakwater Construction Soil Terminal	Cargo handling machinery (in-yard machinery)	Port transport business operators
			Sheds, warehouses	Port & Harbor Administrator, port transport business operators
			Refrigerated container power source, consignor contact office, lighting facilities, etc.	
	Passenger Vessel Terminals	Tokyo International Cruise Terminal	Administration buildings, lighting facilities, boarding bridge, etc.	Port & Harbor Administrator
		Harumi Terminal	Administration buildings, lighting facilities, etc.	Port & Harbor Administrator
	Private Terminals	Other terminals	Cargo handling machinery (in-yard machinery)	Port transport business operators, etc.

Table 1-2: Facilities and Administrators in Scope of Plan (2/2)

Category			Target Facilities, etc.	Owner/Administrator
Terminal Hinterland (outside terminals)	Common	Industry located in the waterfront districts, etc.	Sheds (and auxiliary facilities)	Port & Harbor Administrator, warehouse companies, etc.
			Warehouses (and auxiliary facilities)	Warehouse companies
			Refrigerated warehouses (and auxiliary facilities)	Refrigerated warehouse companies
			Factories (and auxiliary facilities)	Cement companies, petrochemical companies, etc.
			Vanpools, chassis pools	Port & Harbor Administrator, Tokyo Port Terminal Corporation, port transport business operators
			Other port-related facilities, etc.	Port & Harbor Administrator, private companies
			Thermal power station (and auxiliary facilities)	Power generation companies
		Other	Seagrass bed generation projects, green spaces (marine parks, etc.)	Port & Harbor Administrator
Vessels / Vehicles	Common	Ocean-going vessels, coastal vessels	Vessels at berth	Shipping companies
		Incoming trucks	Container trailers	Freight forwarders
			Other trucks	
Other	Common	Other	Decarbonization for port construction	Port & Harbor Administrator

2 Basic Policy on Promoting Effective Port Utilization to Accelerate Decarbonization through Public-Private Partnerships

2.1 Initiatives for Reducing Emissions and Maintaining and Enhancing Absorption of Greenhouse Gases

Terminals (inside terminals)

At the Oi, Aomi, Shinagawa, and Outer Central Breakwater container terminals, which handle containerized cargo at the Port of Tokyo, diesel is the primary source of power for cargo handling machinery and vehicles entering and leaving the port. In working towards decarbonization of the terminals, it is necessary to assess trends in technological development and renewable energy supply, and seize opportunities to undertake new terminal development and reorganization works.

The policy for initiatives is to work towards achieving CO_2 reduction targets by way of continued green energy uptake, aimed at decarbonizing the electricity consumption of container terminals. For one, container loading slips, which are currently processed on paper, will be digitized. To promote zero-emissions cargo handling machinery at container terminals, subsidies are in place to offset the cost of introducing cargo handling machinery that utilizes next-generation energy sources such as hydrogen, along with other initiatives for the uptake of hydrogen-powered units. Green energy is also to be introduced at all TMG-related port facilities, including cruise terminals and sheds.

In FY2028, the reorganization and upgrade of Oi Terminal is to commence—a major opportunity to promote decarbonization at the Port of Tokyo. Integrated terminal use will be promoted through expansion of the container terminal, vehicle congestion alleviated by rearranging waiting areas and establishing a terminal reservation system, DX and logistics efficiency improvements made, and further zero-emissions cargo handling machinery introduced. By way of such efforts, the Port of Tokyo intends to achieve carbon neutrality in its terminals by 2050.

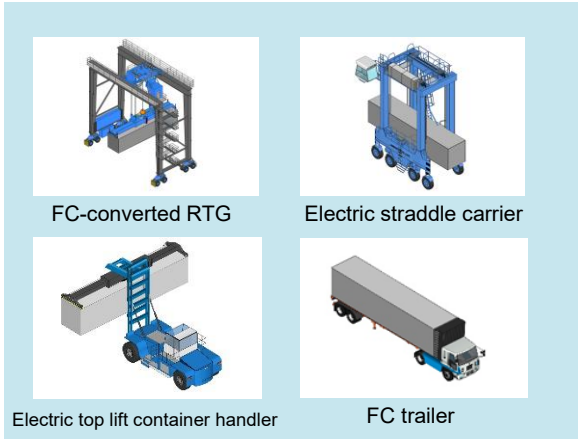


Figure 2-1: Decarbonized Large Cargo Handling Machinery

Figure 2-2: Depiction of Container Terminal Expansion Through Reorganization and Upgrade of Oi Container Terminal

Terminal Hinterland (outside terminals)

Many warehouses and cold stores are situated behind the terminals, together with which an important part of the Port of Tokyo's logistics functionality is borne. As some of these warehouses are beginning to show their age, their fossil fuel consumption from electricity for cargo handling machinery and air conditioning is considerable, making for a challenge to the port's energy decarbonization goals.

The policy for initiatives is to further the efficient and comprehensive decarbonization of port areas, including the hinterlands, through public-private partnerships that act to promote energy-saving measures, deploy green energy, support the introduction of solar power generation equipment such as AIR Solar (Anywhere Innovative Renewable Energy; perovskite-based solar cells), and promote zero-emissions cargo handling machinery and facility upgrades.

Initiatives toward 2035, the new target year established in this plan, include expanded deployment of solar power equipment such as AIR Solar on the warehouses and rooftops of private businesses, and for electricity produced by private businesses in the Port of Tokyo to be effectively utilized among operators across the port. In addition, TMG is utilizing Japan's "Decarbonization Leading Areas" system and relaxing regulations around the installation of structures in the Port of Tokyo in order to boost EV and hydrogen station developments, thereby promoting decarbonization in the terminal hinterlands.

In the future, green energy is planned to be rolled out for all facilities in the terminal hinterlands, and zero-emissions conversion for buildings will be promoted wherever private enterprises rebuild their business facilities. By way of such efforts, the Port of Tokyo intends to achieve carbon neutrality in the terminal hinterland by 2050.

Vessels / Vehicles

As for the decarbonization of vessels and vehicles in the Port of Tokyo, in addition to building upon measures and emissions reduction targets outlined by the International Maritime Organization (IMO) and other industry bodies, the status of uptake for next-generation electric-, hydrogen-, ammonia-, and methanol-powered units in Japan and abroad is being closely monitored and reflected in the port's decarbonization initiatives.

The policy for initiatives is to, through an incentive system that reduces or exempts entry fees for vessels with a low environmental burden, promote uptake and port calls for environmentally friendly ships. There are also measures to counter traffic congestion, including the introduction of a container loading/unloading reservation system based on Container Fast Pass (CONPAS)* technology developed by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and the promotion of a modal shift away from truck transport.

Along with the continuation of the incentive system for environmentally friendly vessels, initiatives for 2035 include infrastructure improvements such as shoreside power supply facilities for cruise ship terminals with the aim of curbing greenhouse gas emissions from vessels at berth. Further, the plan aims to achieve its planned targets by promoting measures to reduce vehicle congestion, such as through the advancement of the container loading/unloading reservation system and modal shift.

Given the anticipated shift to next-generation energy sources such as hydrogen and ammonia for all vessels and vehicles, and the popularization of environmentally friendly trucks such as EVs and fuel cell (FC) powered units, TMG is utilizing Japan's "Decarbonization Leading Areas" system and relaxing regulations around the installation of structures in the Port of Tokyo, aiming to stimulate future EV and hydrogen station developments. By way of such efforts, the Port of Tokyo intends to achieve carbon neutrality for ships and vehicles by 2050.

* This system aims to improve the efficiency and productivity of container logistics by eliminating congestion in front of container terminal gates and shortening the time container trailers spend at the terminal.

2.2 Initiatives Contributing to Port and Waterfront Area Decarbonization

TMG shall cooperate with companies throughout the port and waterfront areas to support the introduction of next-generation energy supply facilities, and to improve logistics efficiency through greater uptake of rail and other modes of transport, thereby promoting efficient and comprehensive decarbonization of port areas, including the hinterland, through public-private collaboration.

3 Plan Targets

3.1 Plan Period

The period of this plan shall be until the year 2050. In addition, three targets are set for the short-term (2030), mid-term (2035), and long-term (2050), in order to advance the port's decarbonization in stages.

The plan period shall be reviewed in a timely and appropriate manner based on any circumstantial changes in its target area, developments in technologies that aid decarbonization, and other factors.

3.2 Plan Targets

Targets for this plan are as follows. A Key Performance Indicator (KPI) was formulated, and specific numerical targets set for the short-, mid-, and long-term.

These KPI (CO_2 emissions) targets were set by taking into account established national and regional greenhouse gas (GHG) reduction targets, the CO_2 emission reduction potential of the target area, and emissions reduction figures from port decarbonization promotion projects.

Port decarbonization promotion projects are to be positioned within the plan sequentially as private sector entities become ready to take action, working towards the ultimate achievement of targets.

Table 3-1: Plan Targets

KPI (Key Performance Indicator)	Specified Numerical Targets		
	Short-term (2030)	Mid-term (2035)	Long-term (2050)
Emissions of carbon dioxide from the Port of Tokyo	276,000 tons/year 50% reduction (from 2000 level)	228,000 tons/year 60% reduction (from 2000 level)	0 tons/year (net figure)

3.3 Estimation of Greenhouse Gas Emissions

For the years 2000 and 2020, energy consumption (electricity, fossil fuels, etc.) was surveyed by way of questionnaires, interviews, etc., with the Port & Harbor Administrator as well as private companies active in the port who consume energy (fuel, electricity, etc.) in the target areas, and CO_2 emissions were estimated.

For “Terminals (inside terminals)", energy consumption for cargo handling machinery, sheds, lighting facilities, etc., was determined through questionnaires/interviews, and CO_2 emissions were estimated.

For “Vessels /Vehicles" entering and leaving the terminal, CO_2 emissions from ships at berth were estimated for the former, and emissions from vehicles moving within the Port of Tokyo for the latter, using published data such as ship arrival logs and port statistics.

For the "Terminal Hinterland (outside terminals)," a questionnaire survey and interviews were conducted with companies located in the Port of Tokyo’s port zone (waterfront districts). Results were used to ascertain energy consumption, from which CO_2 emissions were in turn estimated.

For facilities of companies for which energy consumption data could not be obtained, emissions were estimated based on the total floor area of each building (warehouse, etc.) and energy consumption intensity ratios.

For 2025, in order to reflect the latest data on emissions reduction initiatives by the Port & Harbor Administrator and private operators, CO_2 emissions were calculated by using the estimated values for 2020 and applying project effects for the initiatives undertaken by each operator up to 2025.

Table 3-2: Greenhouse Gas Emissions in Scope Area (1/2)

Category			Target Facilities, etc.	Owner/Administrator	CO_2 emissions (t-CO_2/year)		CO_2 emissions (t-CO_2/year)
					2000	2020	2025 (*1)
Terminals (inside terminals)	Foreign Trade Container Terminals	Shinagawa Container Terminal, Oi Container Terminal, Aomi Container Terminal, Outer Central Breakwater Container Terminal	Cargo handling machinery (gantry cranes)	Tokyo Port Terminal Corporation, shipping companies	16,362	27,696	18,154
			Cargo handling machinery (in-yard machinery)	Port transport business operators, shipping companies			
			Sheds, warehouses	Port & Harbor Administrator, port transport business operators	15,197	23,405	356
			Refrigerated container power source, administration buildings, lighting facilities, etc.	Tokyo Port Terminal Corporation, shipping companies, port transport business operators			
	Foreign Trade Conventional Terminals	Odaiba Liner Terminal, Bulk Cargo Terminal of Inner-Central Breakwater Reclamation Area, Oi Marine Products Terminal, Oi Foodstuffs Terminal, No. 15 Lumber Terminal	Cargo handling machinery (in-yard machinery)	Port transport business operators	1,575	1,608	1,608
			Sheds	Port & Harbor Administrator, Tokyo Port Terminal Corporation, port transport business operators	24,072	21,631	21,631
			Consignor contact office, lighting facilities, etc.				
	Domestic Trade Unit Load Terminals	Shinagawa Terminal, No. 10 Terminal (West), Wakasu Domestic Trade Terminal, Domestic Trade Terminal of Inner Central Breakwater	Cargo handling machinery (in-yard machinery)	Port transport business operators	4,048	4,086	4,086
			Sheds	Port & Harbor Administrator, port transport business operators	1,256	581	581
			Refrigerated container power source, administration buildings, lighting facilities, etc.				
	Domestic Trade Conventional Terminals	Takeshiba Terminal, Hinode Terminal, Shibaura Terminal, Tatsumi Terminal, Tsukishima Terminal, Harumi Terminal, Ferry Terminal, No. 10 Terminal (East), No. 10-1 Multi-purpose Terminal, Oi Construction Material Terminal, Wakasu Construction Material Terminal, Jonanjima Construction Soil Terminal, Inner Central Breakwater Construction Soil Terminal	Cargo handling machinery (in-yard machinery)	Port transport business operators	97,981	73,519	57,941
			Sheds, warehouses	Port & Harbor Administrator, port transport business operators	3,021	5,226	5,226
			Refrigerated container power source, consignor contact office, lighting facilities, etc.				
	Private Terminals	Other terminals	Cargo handling machinery (in-yard machinery)	Private sector companies, etc.	208	226	226
			Warehouses, administration buildings, lighting facilities, etc.		518	1,145	1,145
Subtotal					164,238	159,123	110,954

(*1) CO_2 emissions in 2025 are TMG estimates based on emissions data for 2020.

Table 3-2: Greenhouse Gas Emissions in Scope Area (2/2)

Category			Target Facilities, etc.	Owner/Administrator	CO_2 emissions (t-CO_2/year)		CO_2 emissions (t-CO_2/year)
					2000	2020	2025 (*1)
Terminal Hinterland (outside terminals)	Common	Industry located in the waterfront districts, etc.	Warehouses (and auxiliary facilities)	Warehouse companies	182,329	169,956	167,535
			Refrigerated warehouses (and auxiliary facilities)	Refrigerated warehouse companies	25,253	29,157	28,944
			Factories (and auxiliary facilities)	Cement & petrochemical companies, power generation companies	83,193	111,585	47,546
			Other port-related facilities, etc.	Port & Harbor Administrator, Tokyo Port Terminal Corporation, port transport business operators	12,917	13,436	4,862
			Thermal power station (and auxiliary facilities) (*2)	Power generation companies	(1,297,482)	(1,928,068)	(1,517,399)
Subtotal					303,692	324,134	248,887
Vessels / Vehicles	Common	Ocean-going vessels, coastal vessels	Vessels at berth	Shipping companies	81,596	75,783	75,783
		Incoming trucks	Container trailers (incl. vehicles waiting at foreign trade container terminals), other trucks	Freight forwarders	21,546 (3,277)	26,568 (4,487)	26,568 (4,487)
Subtotal					103,142	102,351	102,351
Total					**571,072**	**585,608**	**462,192**

(*1) CO_2 emissions in 2025 are TMG estimates based on emissions data for 2020.

(*2) Thermal power station emissions shown are reference values before allocation of electricity and heat.

3.4 Estimation of Greenhouse Gas Absorption

Within the scope of this plan, the amount of CO_2 absorption for green areas in the port developed within 30 years and able to offset CO_2 emissions is as provided below.

Estimates were made for Shibaura Minami-Futo Park, as well as Umi-no-Mori Park in the central breakwater area.

[Calculation formula for annual CO_2 absorption]

CO_2 absorption (t-CO_2/year) = area of green space (ha) × absorption coefficient (t-C/ha/year) × 44/12

Table 3-3: Outline of Target Port Green Areas

Park	Area (ha)	Opening date	Reportable period for CO_2 reduction effects
Shibaura Minami-Futo Park	1	January 2008	2008–2038
Umi-no-Mori Park	12.5	March 2025	2025–2055

Table 3-4: Annual Biomass Production per Unit Area (Absorption Coefficient)

Annual biomass production volume per unit area[*1] (t-C/ha/year)	2.334

(*1) Value for port and harbor green areas in Japan (excluding Hokkaido)
Source: "Port Decarbonization Plan" Manual

Table 3-5: Greenhouse Gas Absorption in the Target Area

Park	Area / Absorption	2000	2020	2030	2035	2050
Shibaura Minami-Futo Park	Area (ha)	0	1	1	1	1
	Greenhouse gas absorption (t-CO_2/year)	0	9	9	9	—
Umi-no-Mori Park	Area (ha)	0	0	12.5	12.5	12.5
	Greenhouse gas absorption (t-CO_2/year)	0	0	107	107	107
Total for Target Area	**Greenhouse gas absorption (t-CO_2/year)**	**0**	**9**	**116**	**116**	**107**

3.5 Greenhouse Gas Emissions Reduction Targets

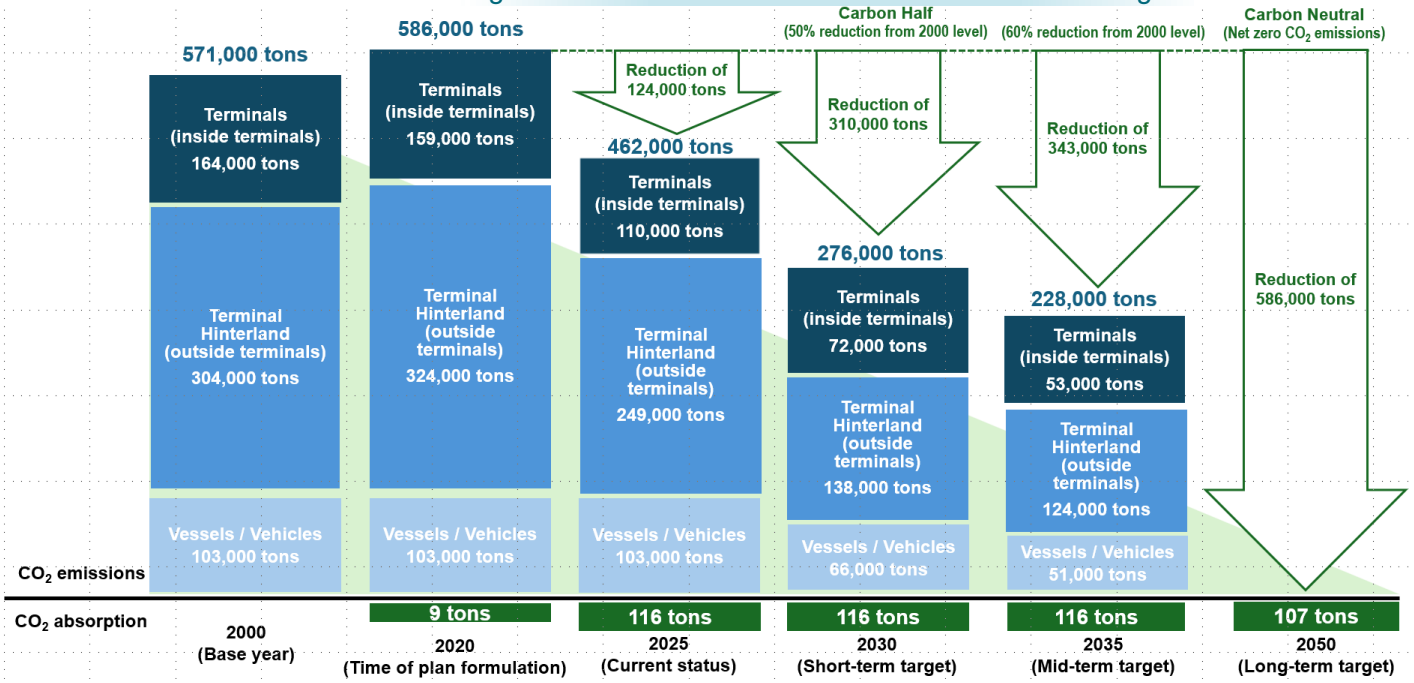
The GHG emission reduction targets in this plan were set by year based on various reference plans, as shown in the table below.
In addition to the below reduction targets, targets were also set to increase the ratio of green energy use to approximately 30% by 2026 and 50% by 2030.

Table 3-6: Greenhouse Gas Emissions Reduction Targets

Target year	Reduction target	Reference plan
2030 (Short-term)	Carbon half (50% reduction from 2000 levels) across entire target area CO_2 emissions reduced by 310,000 tons	Tokyo Metropolitan Government Basic Environmental Plan (September 2022) *1
2035 (Mid-term)	60% reduction from 2000 levels across entire target area CO_2 emissions reduced by 343,000 tons	Zero Emission Tokyo Strategy: Beyond Carbon Half (March 2025)
2050 (Long-term)	Carbon neutral (net zero CO_2 emissions) across entire target area CO_2 emissions reduced by 586,000 tons	Tokyo Metropolitan Government Basic Environmental Plan (September 2022) *1

(* 1) Formulated as a plan stipulated in Article 9, paragraph (1) of the Tokyo Metropolitan Government Basic Environmental Ordinance (TMG Ordinance No. 92 of 1994), as well as that stipulated in Article 21, paragraph (3) of the Act on Promotion of Global Warming Countermeasures (Act No. 117 of 1998), which covers action plans for local governments related to global warming countermeasures.

Figure 3-1: Greenhouse Gas Emissions Reduction Targets



* CO_2 emissions in 2025 are TMG estimates based on emissions data for 2020.

3.6 Hydrogen Demand Estimation and Supply Target

Assuming that all fossil fuel consumption at the Port of Tokyo as of 2020 will be shifted to renewables and hydrogen energy, the hydrogen demand in 2050 is estimated at approximately 13,000 tons/year.

The hydrogen supply target in this plan shall be a supply volume corresponding to the hydrogen demand provided in the above estimate, and this figure shall be reviewed in conjunction with future changes in demand and other factors.

Table 3-7: Annual Fossil Fuel Consumption at the Port of Tokyo (2020)

Category		Diesel	Gasoline	LPG
Annual consumption	Container terminals	8,589 kl	91 kl	49 t
	Other terminals, warehouses, factories, etc.	59,272 kl	84 kl	27,202 t
	Total	67,861 kl	175 kl	27,251 t

* Consumption data compiled through surveys of private companies, etc.
* Excludes fuel used by ships and incoming trucks (trucks that enter and exit terminals, warehouses, etc.)

Table 3-8: Annual Demand for Hydrogen at Port of Tokyo (2050)

Category	Target Facilities, etc.	2050
Container terminals	・Cargo handling machinery (RTGs) ・Other cargo handling machinery (straddle carriers, reach stackers, tractor units, forklifts, etc.)	Approx. 13,000 tons*
Other terminals, warehouses, factories, etc.		

* Estimated annual hydrogen demand in 2050, assuming a shift from fossil fuels to hydrogen, with some exceptions, based on the annual fossil fuel consumption provided in Table 3-7.

4 Greenhouse Gas Reduction Plan and Port Decarbonization Promotion Projects

4.1 Greenhouse Gas Reduction Plan

○ The major initiatives and emissions reduction targets to be implemented to achieve the goals set forth in section 3.5 are compiled in Table 4-1 as a Greenhouse Gas Reduction Plan.

○ Major initiatives and target reductions are described and calculated, respectively, with reference to TMG's future project implementation details, questionnaire results for private businesses, and policies of the government and business associations.

○ In calculating the target reductions for vessels, the GHG emissions reduction target of 70–80% (below 2008 levels) by 2040 for international shipping set by the IMO was used as a basis for target reductions for ocean-going vessels in this plan. For coastal domestic vessels, the emissions reduction target of 17% below FY2013 levels by FY2030, set by the Study Group for Promoting of Carbon Neutrality in Domestic Shipping (Maritime Bureau, MLIT), acted as a basis for calculating the target reduction in this plan.

○ In order to achieve carbon neutrality in 2050, the Greenhouse Gas Reduction Plan is to be further augmented, with revisions made as appropriate based on developments in technologies that aid decarbonization and other factors.

[Reference Materials]

- Tokyo Metropolitan Government Basic Environmental Plan (September 2022, TMG)
- JERA Environmental Commitment 2035 (May 12, 2022, JERA Co., Inc.)
- Carbon Neutral Action Plan (June 29, 2022, The Electric Power Council for a Low Carbon Society)
- Carbon Neutral Challenge 2050 Action Plan (June 10, 2021, The Japan Gas Association)
- IMO GHG Reduction Strategy (2023, International Maritime Organization: IMO)
- FY2040 GHG Emissions Reduction Targets for Coastal Shipping (March 2025, MLIT).
- Trucking Industry Environmental Vision 2030–2050: Toward Carbon Neutrality (April 15, 2022, Japan Trucking Association)

Table 4-1: Greenhouse Gas Reduction Plan (1/5)

(Unit: t-CO_2/year)

Category		Target Facilities, etc.	CO_2 emissions (CO_2 target reductions) 2020	2030 / 2035 / 2050	Major Reduction Initiatives	Owner/Administrator
Terminals (inside terminals)	Foreign Trade Container Terminals	Cargo handling machinery (gantry cranes)	**4,764**	**0 (-4,764)** **0 (-4,764)** **0 (-4,764)**	○ **Green energy uptake & hydrogen utilization** ・Introduction of green energy (100% introduced) ○ **Introduction of inverter-controlled gantry cranes (up to 2026)**	Tokyo Port Terminal Corporation
		Cargo handling machinery (in-yard machinery)	**22,515**	**16,000 (-6,515)** **356 (-22,159)** **0 (-22,515)**	○ **Conversion to zero-emissions cargo handling machinery** ・Introduction of FC-converted RTGs (up to 2030) ・Introduction of state-of-the-art cargo handling machinery (up to 2030) ・Promotion of electrification, FC conversion of cargo handling machinery (forklifts, reach stackers, etc.) (up to 2030) ・Hydrogen-fueled operation for RTGs at some container terminals (up to 2035) ・Conversion to zero-emissions equipment for all cargo handling machinery within terminals ○ **Decarbonization through reorganization of Oi Terminal** ・Introduction of state-of-the-art cargo handling machinery (up to 2035) ・Electrification, FC conversion of cargo handling machinery (RTGs, etc.) (up to 2035)	Shipping companies Port transport business operators
		Sheds, warehouses	**2,718**	**0 (-2,718)** **0 (-2,718)** **0 (-2,718)**	○ **Green energy uptake** ・Introduction of green energy (100% introduced) ・Introduction of solar power generation equipment such as AIR Solar in administrative buildings, etc. (up to 2035) ・Development of stand-alone distributed power generation facilities using hydrogen, etc.	Port & Harbor Administrator Port transport business operators
		Refrigerated container power source, administration buildings, lighting facilities, etc.	**21,104**	**0 (-21,104)** **0 (-21,104)** **0 (-21,104)**	○ **Decarbonization through reorganization of Oi Terminal** ・Introduction of solar power generation equipment such as AIR Solar in administrative buildings, etc. (up to 2035) ○ **Review of business activities to reduce environmental impact** ・Renewal of vehicles/equipment, review of operations ・CO_2 absorption measures	Tokyo Port Terminal Corporation Shipping companies Private sector companies

Table 4-1: Greenhouse Gas Reduction Plan (2/5)

(Unit: t-CO_2/year)

Category		Target Facilities, etc.	CO_2 emissions (CO_2 target reductions) 2020	2030 / 2035 / 2050	Major Reduction Initiatives	Owner/Administrator
Terminals (inside terminals)	Other Terminals, etc.	Cargo handling machinery (in-yard machinery)	**78,296**	**44,877** (-33,419)	○ **Conversion to zero-emissions cargo handling machinery** ・Promotion of electrification, FC conversion of cargo handling machinery (forklifts, reach stackers, etc.) (up to 2030) ・Conversion to zero-emissions equipment for all cargo handling machinery within terminals	Port & Harbor Administrator Tokyo Port Terminal Corporation Port transport business operators
				41,521 (-36,775)		
				0 (-78,296)		
		Sheds, warehouses, refrigerated container power source, administration buildings, consignor contact office, lighting facilities, etc.	**29,726**	**11,313** (-18,413)	○ **Green energy adoption for passenger vessels & cargo ship terminals** ・Introduction of green energy for all TMG-related facilities (up to 2030) ・Installation of AIR Solar, storage batteries at Harumi Passenger Ship Terminal (up to 2030) ・Introduction of green energy for all terminal facilities ○ **Equipment upgrades to reduce electricity consumption at private facilities** ○ **Review of business activities to reduce environmental impact** ・Renewal of vehicles/equipment, review of operations ・CO_2 absorption measures, etc.	Port & Harbor Administrator Port transport business operators Private sector companies, etc.
				11,313 (-18,413)		
				0 (-29,726)		
Subtotal			**159,123**	**2030 CO_2 emissions** (target reduction) **72,190** (-86,933)		
				2035 CO_2 emissions (target reduction) **53,190** (-105,933)		
				2050 CO_2 emissions (target reduction) **0** (-159,123)		

Table 4-1: Greenhouse Gas Reduction Plan (3/5)

(Unit: t-CO_2/year)

Category		Target Facilities, etc.	CO_2 emissions (CO_2 target reductions) 2020	2030 / 2035 / 2050	Major Reduction Initiatives	Owner/Administrator
Terminal Hinterland (outside terminals)	Industry located in the waterfront districts, etc.	Factories, thermal power stations	111,585	26,585 (-85,000)	○ **Green energy uptake** ・Introduction of green energy (50% uptake by 2030) ○ **Emissions reductions at thermal power facilities** ・Adjustment of power generation amount (up to 2030) ・Zero-emissions power stations ○ **Review of business activities to reduce environmental impact** ・Promotion of energy conservation (switching to LED lighting, etc.) ・Renewal of vehicles/equipment, review of operations ・Introduction of construction materials that utilize decarbonization technology ・CO_2 absorption measures, etc.	Cement manufacturers, Petrochemical companies Power generation companies
				25,585 (-86,000)		
				0 (-111,585)		
		Warehouses, refrigerated warehouses	199,113	98,113 (-101,000)	○ **Green energy uptake** ・Introduction of solar power generation equipment such as AIR Solar for warehouse wall/roof surfaces (up to 2030) ○ **Conversion to zero-emissions cargo handling machinery** ・Development of EV and hydrogen stations (up to 2035) ・Electrification, FC conversion of forklifts, etc. ○ **Conversion to zero-emissions facilities** ・Promotion of energy conservation (switching to LED lighting, etc.) (up to 2030) ・Upgrading facilities upon the rebuilding of business premises ○ **Energy saving in logistics activities, review of business activities to reduce environmental impact** ・Introduction of refrigeration and cooling equipment that uses natural refrigerants ・Energy-saving air conditioning equipment ・Improving the efficiency of logistics using ICT technology ・Promoting joint operation of trucks ・Renewal of vehicles/equipment, review of operations ・CO_2 absorption measures, etc.	Port & Harbor Administrator Warehouse companies Refrigerated warehouse companies
				85,113 (-114,000)		
				0 (-199,113)		

Table 4-1: Greenhouse Gas Reduction Plan (4/5)

(Unit: t-CO_2/year)

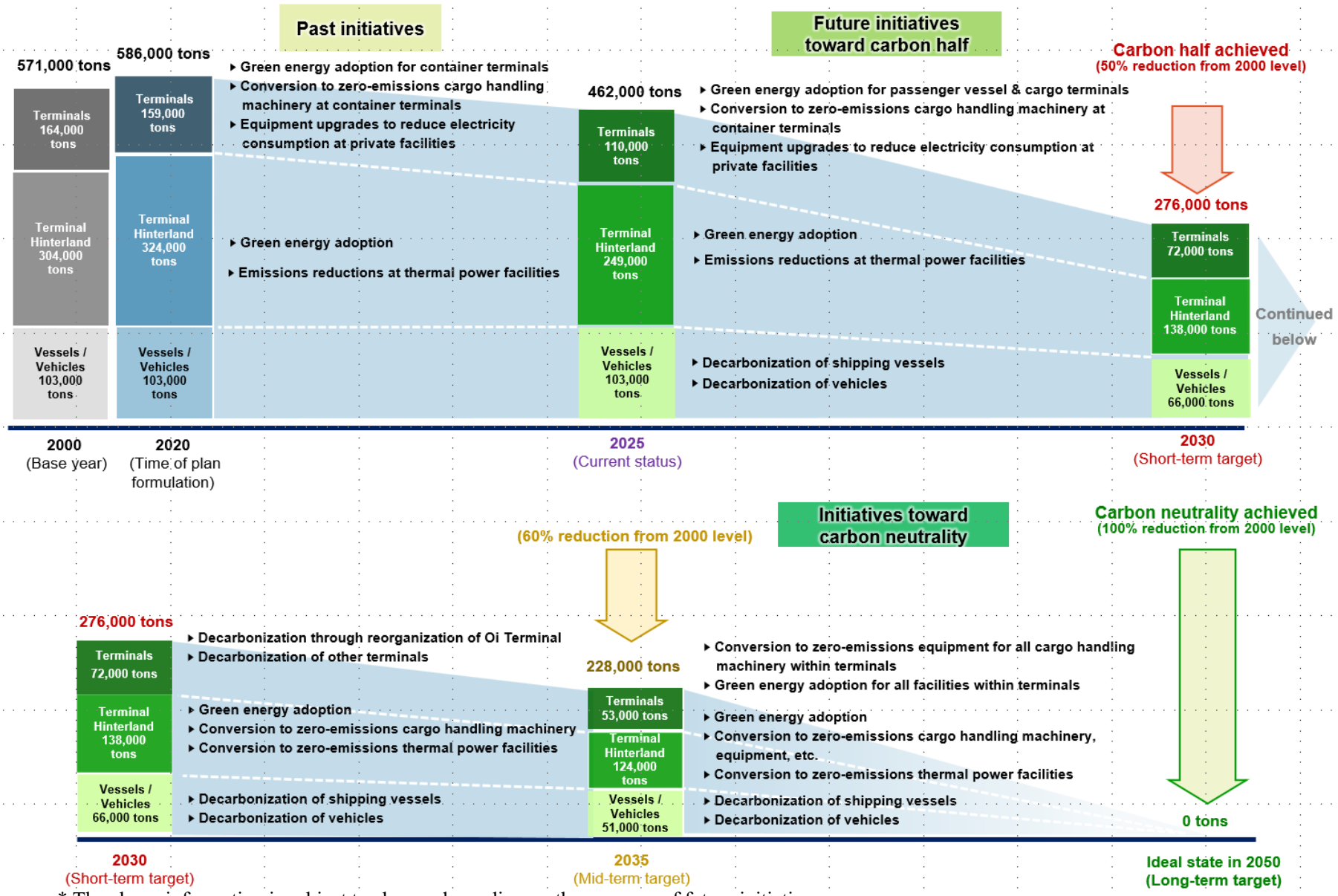
Category		Target Facilities, etc.	CO_2 emissions (CO_2 target reductions) 2020	2030 / 2035 / 2050	Major Reduction Initiatives	Owner/Administrator
Terminal Hinterland (outside terminals)	Industry located in the waterfront districts, etc.	Other port-related facilities, etc.	13,436	2030: 13,436 (-0) 2035: 13,436 (-0) 2050: 0 (-13,436)	○ **Green energy uptake** ・Introduction of green energy (50% uptake by 2030) ・Introduction of solar power generation equipment such as AIR Solar in private facilities ○ **Review of business activities to reduce environmental impact** ・Promotion of energy conservation (switching to LED lighting, etc.) ・Renewal of vehicles/equipment, review of operations ・CO_2 absorption measures, etc.	Port & Harbor Administrator Tokyo Port Terminal Corporation Port transport business operators
Subtotal			324,134	**2030 CO_2 emissions (target reduction) 138,134 (-186,000)**		
				2035 CO_2 emissions (target reduction) 124,134 (-200,000)		
				2050 CO_2 emissions (target reduction) 0 (-324,134)		

Table 4-1: Greenhouse Gas Reduction Plan (5/5)

(Unit: t-CO_2/year)

Category		Target Facilities, etc.	CO_2 emissions (CO_2 target reductions) 2020	2030 / 2035 / 2050	Major Reduction Initiatives	Owner/Administrator
Vessels / Vehicles	Ocean-going vessels, coastal vessels	Vessels at berth	**75,783**	**46,803** (-28,980) **34,803** (-40,980) **0** (-75,783)	○ **Decarbonization of vessels** ・Incentive system that exempts environmentally friendly ships from port entry fees ・Introduction of shoreside power supply facilities at passenger ship terminals (up to 2035) ・Shift to next-generation energy, e.g. ammonia-fueled vessels ・Reduction of CO_2 emissions from coastal vessels (17% reduction from 2013 levels in 2030) ・Reduction of CO_2 emissions from ocean-going vessels (50% reduction from 2008 levels by 2040)	Shipping companies
	Incoming trucks	Container trailers, other trucks	**26,568**	**19,055** (-7,513) **16,055** (-10,513) **0** (-26,568)	○ **Decarbonization of vehicles** ・Shift to environmentally friendly trucks (EVs, FCs, etc.) ・Reduction of CO_2 emissions intensity ratios for trucks (31% reduction from 2005 levels in 2030) ・AI-powered prediction for terminal travel times (up to 2035) ・Integration with the "Cyber Port" platform to boost container handling efficiency (up to 2035) ・Implementation of off-peak loading/unloading and shuttle transport (up to 2035) ・Reduction of traffic congestion through implementation of a reservation system, modal shift for container loading/unloading	Freight forwarders
		(Of which, those waiting at container terminals)	**(4,487)**	**(1,919)** (-2,568) **(1,919)** (-2,568) **(0)** (-4,487)		
Subtotal			**102,351**	**2030 CO_2 emissions** (target reduction) **65,858** (-36,493)		
				2035 CO_2 emissions (target reduction) **50,858** (-51,493)		
				2050 CO_2 emissions (target reduction) **0** (-102,351)		
Total			**585,608**	**2030 CO_2 emissions** (target reduction) **276,182** (-309,426)		
				2035 CO_2 emissions (target reduction) **228,182** (-357,426)		
				2050 CO_2 emissions (target reduction) **0** (-585,608)		

[Reference] Greenhouse Gas Emissions Reduction Targets (By Target Year)



* The above information is subject to change depending on the progress of future initiatives.

* CO_2 emissions in 2025 are TMG estimates based on emissions data for 2020.

4.2 Port Decarbonization Promotion Projects (Projects for Reducing Emissions and Maintaining and Enhancing Absorption of Greenhouse Gases)

○ In ensuring the effectiveness of the Greenhouse Gas Reduction Plan set forth in section 4.1, the efforts of each implementing body are of great importance. Specific initiatives taken by each implementing body are described as "Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs)" in Table 4-2 (Initiatives to Date) and Table 4-3 (Planned Initiatives).

○ Regarding specific projects, a survey was conducted for the implementing bodies, with the projects of those that responded being listed.

○ Working towards the realization of carbon neutrality in 2050, additional surveys with implementing bodies are to be conducted as appropriate, with projects being added to this list accordingly.

（1）Initiatives to Date

Table 4-2: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Initiatives to Date (1/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminals (inside terminals)	Short-term	Conversion to zero-emissions cargo handling machinery at container terminals					
		Introduction of inverter-controlled gantry cranes	All container terminals	34 units	Tokyo Port Terminal Corporation	Up to FY2025	(1,280)
		Introduction of FC-converted RTGs (*2) <Reference: p.40>	Oi Container Terminal, Berths No. 1/2	4 vehicles	Daito Corporation	Up to FY2023	226
			Oi Container Terminal, Berths No. 3/4	3 vehicles	Utoc Corporation	Up to FY2024	412
			Oi Container Terminal, Berths No. 6/7	13 vehicles	UNI-X NCT Corporation	Up to FY2025	1,092
			Outer Central Breakwater Container Terminal, Berth No. 1	4 vehicles	Kamigumi Co., Ltd.	FY2024–2025	25
			Aomi Container Terminal, Berths No. 0/1/2/3	8 vehicles	Sankyu Inc. ISEWAN Terminal Service Co., Ltd. The Sumitomo Warehouse Co., Ltd. Daiichi Koun Co., Ltd. Nippon Express Co., Ltd.	FY2025: 8 vehicles	643

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.

(*2) Government subsidies applied for a portion of the introduction at Aomi Container Terminal, Berths No. 0/1/2/3.

Table 4-2: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Initiatives to Date (2/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminals (inside terminals)	Short-term	Green energy adoption for container terminals					
		Introduction of green energy	All container terminals	70,000,000 kWh/year	Tokyo Port Terminal Corporation	From July 2022 (Shinagawa Terminal, Outer Central Breakwater Container Terminal) From April 2024 (Other terminals)	30,000
		Introduction of solar power generation equipment	Oi Container Terminal, Berths No. 3/4	1634.21 m^2 201,805 kWh/year	Utoc Corporation	From 2007 2023 renewal	(132)
			Oi Container Terminal, Berths No. 6/7 (Rooftop of multi-story container hangar)	200 kW	Tokyo Port Terminal Corporation	From FY2011	To be determined (Power consumption: ≈25%)
			Outer Central Breakwater Container Terminal, Berths No. 1/2	450 kW		From FY2025	To be determined (Power consumption: ≈5%)
			Shinagawa Domestic Trade shed, Tatsumi Domestic Trade shed, Inner Central Breakwater X4/5 consignor contact office, No.10-2 West shed	547 kW	TMG	From FY2010	194
Terminal Hinterland (outside terminals)		Equipment upgrades to reduce electricity consumption at private facilities					
		Switching to LED lighting	Company warehouses (Oi, Central Breakwater)	1,527 lights	Kamigumi Co., Ltd.	FY2023–2024	To be determined
		Conversion to zero-emissions cargo handling machinery					
		Electrification of forklifts	World Cargo Distribution Center	3 vehicles	Nippon Express Co., Ltd.	From FY2025	To be determined
		Green energy uptake					
		Off-site power purchase agreement (PPA)	Warehouse, office building (Shibaura Office)	316 kW	Yasuda Logistics Corporation	From 2024	128

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.

Table 4-2: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Initiatives to Date (3/5)

Category		Project		Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminal Hinterland (outside terminals)	Short-term	Green energy uptake						
			Introduction of green energy	Oi Port Terminal Office	1,100,000 kWh/year	Yamatane Corporation	From FY2023	358
				Tatsumi Office	1,280,000 kWh/year			392
				YURIKAMOME Inc. Head Office	Approx. 19,000,000 kWh/year	YURIKAMOME Inc.	From 2024	8,274
				Warehouses, office buildings (Shinonome, Shibaura, Oi Offices)	3,363,850 kWh/year	Yasuda Logistics Corporation	From 2025	1,453
			Introduction of solar power generation equipment	Warehouse, office building (Shinonome Office)	246 kW	Yasuda Logistics Corporation	From 2024	90
				Central Breakwater Fruit and Vegetable Center New Building	335 kW (4,000 m^2)	Kamigumi Co., Ltd.	From 2021	To be determined
				Warehouse roof (Oi Marine Products Terminal)	50 kW	Nissui Logistics Corporation	FY2025	15
				Rinkai Tunnel	680 kW	TMG	From FY2023	300
				Dainikoro Underwater Tunnel				
				Shinagawa Distribution Center	200 kW	Nichirei Logistics Engineering	From 2025	83
		Other						
			Seagrass bed generation projects <Reference: p.44>	Odaiba Seaside Park, etc.	—	TMG	2025–2030	To be determined
Vessels / Vehicles (*2)		Decarbonization of vessels						
			Reduction of ship loading/unloading times	Ferry Terminal	—	Ocean Trans Co., Ltd.	From 2023	To be determined
			Port entry fee reductions for green ships (ESI)	Port of Tokyo	—	TMG	From FY2015	To be determined
			Port entry fee reductions for LNG/hydrogen-fueled ships	Port of Tokyo	—	TMG	From FY2021	To be determined

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.
(*2) For vessels, only GHG emissions while at berth are counted.

Table 4-2: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Initiatives to Date (4/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Vessels / Vehicles (*2)	Short-term	Decarbonization of vehicles					
		Electrification of business vehicles	Oi Container Terminal, Berths No. 1/2	2 vehicles	Daito Corporation	FY2024–2025	To be determined
		Installation of EV charging stations	Oi Container Terminal, Berths No. 1/2	2 units	Daito Corporation	FY2024–2025	To be determined
		Deployment of renewable diesel (RD) trucks	Transportation company hub based around the Port of Tokyo	1 vehicle	Mitsubishi Logistics Corporation	Up to FY2025	To be determined
		Off-Peak Loading/Unloading Model Project <Reference: p.41>	Container terminal areas	—	TMG	FY2024–2025	To be determined
		CONPAS-based reservation system for container loading/unloading <Reference: p.41>	Oi Container Terminal, Berths No. 1/2/3/4/6/7; Aomi Container Terminal, Berth No. 4; Outer Central Breakwater Container Terminal, Berth Y1 (FY2025)	—	(Implementing Bodies) TMG, Tokyo Port Terminal Corporation, Tokyo Koun Kyokai (Cooperation) Kanto Regional Development Bureau, MLIT	From FY2022	To be determined
		Ariake Terminal Cargo Handling Efficiency Project <Reference: p.42>	Lot No. 10 Terminal (West), VE Berth	—	MOL Sunflower Ltd.	From FY2025	To be determined
		Port of Tokyo Ferry Terminal Cargo Handling Efficiency Project <Reference: p.42>	Ferry Terminal, VAC Berth	—	Ocean Trans Co., Ltd.	From FY2025	To be determined
Other		Other					
		Decarbonization for port construction <Reference: p.44>	Port of Tokyo	—	TMG	From FY2024	To be determined
Total							43,685

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.
(*2) For vessels, only GHG emissions while at berth are counted.

Table 4-2: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Initiatives to Date (5/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year)
Other	Short-term	Other					
		Development of marine parks (GHG absorption)	Shibaura Minami-Futo Park	1 ha	TMG	2008–2038	9
			Umi-no-Mori Park	12.5 ha		2025–2055	107
Total							116 * Post-2039: 107

（2）Future Initiatives

Table 4-3: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Planned Initiatives (1/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminals (inside terminals)	Short-term	Conversion to zero-emissions cargo handling machinery at container terminals					
		Introduction of inverter-controlled gantry cranes	All container terminals	4 units	Tokyo Port Terminal Corporation	Up to FY2026	(150)
		Introduction of FC-converted RTGs (*2) <Reference: p.48>	Outer Central Breakwater Container Terminal, Berth No. 1	4 vehicles	Kamigumi Co., Ltd.	FY2026–2027	25
			Aomi Container Terminal, Berths No. 0/1/2/3	18 vehicles	Sankyu Inc. ISEWAN Terminal Service Co., Ltd. The Sumitomo Warehouse Co., Ltd. Daiichi Koun Co., Ltd. Nippon Express Co., Ltd.	FY2026: 7 vehicles FY2028: 6 vehicles FY2029: 5 vehicles	1,446
			Aomi Container Terminal, Berth No. 4	8 vehicles	Evergreen Shipping Agency (Japan) Corp.	FY2026	220
		Introduction of electric RTGs	Outer Central Breakwater Container Terminal, Berth No. 3	17 vehicles	Tokyo Port Terminal Corporation	Up to FY2027	1,754
		Introduction of EV tractor units	Oi Container Terminal, No. 1/2	2 vehicles	Daito Corporation	—	To be determined
		Electrification of side lifters	Outer Central Breakwater Container Terminal, Berth No. 2	3 vehicles	MITSUI-SOKO HOLDINGS Co., Ltd.	From FY2027	To be determined
		Conversion to zero-emissions cargo handling machinery					
		Introduction of FC forklifts for fruit & vegetable loading/unloading	Kamigumi Tokyo Multipurpose Distribution Center	20 vehicles planned (in phases)	Kamigumi Co., Ltd.	From FY2027	80

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.
(*2) Government subsidies applied for a portion of the introduction at Aomi Container Terminal, Berths No. 0/1/2/3.

Table 4-3: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Planned Initiatives (2/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminals (inside terminals)	Short-term	Green energy adoption for passenger vessels & cargo ship terminals					
		Introduction of green energy	Tokyo International Cruise Terminal	1,400,000 kWh/year	TMG	From FY2026	600
			Harumi Terminal	280,000 kWh/year			120
		Introduction of solar power generation equipment (AIR Solar)	Harumi Terminal	(Max.) 50 kW	TMG	From 2026	(Max.) 25
		Equipment upgrades to reduce electricity consumption at private facilities					
		Switching to LED lighting	All container terminals	All lights in company-owned buildings and yards	Tokyo Port Terminal Corporation	Up to 2030	To be determined (Power consumption: ≈40%)
Terminal Hinterland (outside terminals)		Green energy uptake					
		Introduction of green energy	Toyomi Logistics Center, Jonanjima Logistics Center	10,500,000 kWh/year	Umios Logistics Corporation	From FY2026	4,861
			Warehouse, office building (Port of Tokyo Office)	200,000 kWh/year	The Shibusawa Warehouse Co., Ltd.	Up to FY2030	80
		Off-site PPA	Shinagawa Distribution Center	Under consideration	Nichirei Logistics Engineering	Under consideration	To be determined
		Introduction of solar power generation equipment	Warehouse, office building (Oi Office)	263 kW	Yasuda Logistics Corporation	From 2026	112
			Jonanjima	3,000 kW	Tokyo Suisan Terminal Co., Ltd.	From 2027	1,600
			Aomi Terminal	3,000 kW	Aomi Cargo Distribution Center	From 2026	(1,300)

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.

Table 4-3: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Planned Initiatives (3/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Terminal Hinterland (outside terminals)	Short-term	Conversion to zero-emissions cargo handling machinery					
		Electrification of forklifts	Port of Tokyo warehouse facilities	1+ vehicles	Mitsubishi Logistics Corporation	Pilot introduction from FY2025; fixed EV uptake quota met by FY2030	To be determined
			Company warehouses (Oi Terminal, Central Breakwater Terminal)	12 vehicles	Kamigumi Co., Ltd.	FY2024–2027	To be determined
		FC conversion for forklifts	Company warehouses (Oi Marine Products shed, World Cargo Distribution Center)	2 vehicles	Daiichi Koun Co., Ltd.	Up to FY2029	To be determined
		Equipment upgrades to reduce electricity consumption at private facilities					
		Switching to LED lighting	Oi Port Terminal Office	1,700 lights	Yamatane Corporation	Up to FY2030	To be determined
			Shinagawa Distribution Center	Under consideration	Nichirei Logistics Engineering	Under consideration	To be determined
			Toyomi Logistics Center, Jonanjima Logistics Center	1 set	Umios Logistics Corporation	Up to 2027	To be determined
		Installation of energy-saving equipment (motion sensors)	Port of Tokyo Office	Approx. 80 sensors (Reduction amount: 60,000 kWh/year)	The Shibusawa Warehouse Co., Ltd.	Up to FY2030	24
		Installation of energy-saving equipment (high-efficiency transformers)	Jonanjima Logistics Center, Toyomi Logistics Center	Jonanjima: 500 kVa - 1 vehicle, 100 kVa - 2 vehicles Toyomi: 500 kVa - 1 vehicle, 200 kVa - 2 vehicles, 100 kVa - 1 vehicle	Umios Logistics Corporation	Up to 2026	15
		Installation of energy-saving equipment (low-power natural refrigerant appliances, etc.)	Jonanjima New Warehouse	1 set	Tokyo Suisan Terminal Co., Ltd.	2027	3,440

(*1) CO_2 reductions for projects that have overlapping effects with other initiatives are shown in parentheses.

Table 4-3: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Planned Initiatives (4/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year) (*1)
Vessels / Vehicles (*1)	Short-term	Decarbonization of vessels					
		Launch of ammonia/methanol fleet	Port of Tokyo, others	13,700 TEU x 20 vessels (ammonia/methanol ready vessels)	Ocean Network Express (Japan) Ltd.	2025–2026	— (Net zero GHG emissions by 2050 (Scope 1,2,3))
				13,000 TEU x 12 vessels (methanol dual-fuel vessels)		From 2027	
		Utilization of hydrogen fuel cell vessel <Reference: p.43>	Port of Tokyo	1 vessel	TMG, Iwatani Corporation	From FY2026	To be determined
		Zero-emission conversion of Port and Harbor Bureau vessels <Reference: p.43>	Port of Tokyo	3 vessels	TMG	From FY2026	To be determined
		Decarbonization of vehicles					
		Hybrid uptake for business vehicles	Oi Container Terminal Shinagawa Container Terminal	7 vehicles	Daiichi Koun Co., Ltd.	Up to FY2027	To be determined
		Electrification of business vehicles	Oi Container Terminal Shinagawa Container Terminal	5 vehicles	Daiichi Koun Co., Ltd.	Up to FY2029	To be determined
			Port of Tokyo warehouse facilities	—	Mitsubishi Logistics Corporation	Up to FY2029	To be determined

(*1) For vessels, only GHG emissions while at berth are counted.

Table 4-3: Port Decarbonization Promotion Projects (Projects to Reduce Emissions and Maintain/Enhance Absorption of GHGs): Planned Initiatives (5/5)

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year)
Terminals (inside terminals)	Mid-term	Decarbonization through reorganization of Oi Terminal					
		Introduction of decarbonized cargo handling machinery	Oi Container Terminal	Under consideration for the terminal reorganization project	Businesses involved in terminal reorganization	Up to FY2035	11,000
		Conversion to zero-emissions cargo handling machinery at all terminals					
		FC conversion for RTGs * Contingent upon hydrogen supply situation	Outer Central Breakwater Container Terminal, Berth No. 1	8 vehicles	Kamigumi Co., Ltd.	From 2030	5,905
			Aomi Container Terminal, Berths No. 0/1/2/3	26 vehicles	Sankyu Inc. ISEWAN Terminal Service Co., Ltd. The Sumitomo Warehouse Co., Ltd. Daiichi Koun Co., Ltd. Nippon Express Co., Ltd.		
			Aomi Container Terminal, Berth No. 4	8 vehicles	Evergreen Shipping Agency (Japan) Corp.		
Vessels / Vehicles (*1)		Decarbonization of vessels					
		Development of shoreside power supply facilities <Reference: p.52>	Tokyo International Cruise Terminal	—	TMG	Up to FY2035	To be determined
Total							31,307

(*1) For vessels, only GHG emissions while at berth are counted.

4.3 Port Decarbonization Promotion Projects (Projects Contributing to Port and Waterfront Area Decarbonization)

○ Although not directly linked to achieving the Greenhouse Gas Reduction Plan targets set forth in section 4.1, specific initiatives by each implementing body that contribute to this plan are described in Table 4-4 as "Port Decarbonization Promotion Projects (Projects Contributing to Port and Waterfront Area Decarbonization)."

○ Working towards the realization of carbon neutrality in 2050, additional surveys with implementing bodies are to be conducted as appropriate, with projects being added to this list accordingly.

Table 4-4: Projects Contributing to Port and Waterfront Area Decarbonization

Category		Project	Site(s)	Scale	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO2/year)
Terminals (inside terminals)	Short-term	Hydrogen station (multi-type; capable of supplying general vehicles and forklifts)	Inner Central Breakwater (Kamigumi Multipurpose Distribution Center)	Supply capacity: Over 500Nm^3/h	Umi-no-Mori Hydrogen Station Company, LLC.	From FY2025	To be determined
Terminal Hinterland (outside terminals)		Hydrogen production	Keihinjima	Production capacity: Max. 120 Nm^3/hour (expanded to max. 360 Nm^3/hour in FY2027)	TMG; Yamanashi Prefectural Government	From FY2025	Annual hydrogen production capacity (assuming 40 hours/week operation) ≈20t-H_2 (≈60t-H_2 after expansion)
			Outer Central Breakwater	Production capacity: Max. 240 Nm^3/hour	TMG; Tokyo Electric Power Company Holdings, Inc.	Operation scheduled for FY2028	Annual hydrogen production capacity (assuming 40 hours/week operation) ≈40t-H_2
Vessels / Vehicles		Port of Tokyo logistics efficiency project subsidies <Reference: p.47>			TMG		
		Feeder transport business	Port of Tokyo - Other domestic ports	50,095 FEU/year (2024 results)		From FY2016	
		Barge lateral transfer business	Port of Tokyo - Ports of Yokohama / Kawasaki / Chiba	18,656 FEU/year (2024 results)		From FY2024	
		In-port lateral transfer business (sea)	Port of Tokyo - Other domestic ports	1,695 trips/year (2024 results)		From FY2016	
		In-port lateral transfer business (rail)	Tokyo Freight Terminal - various train stations	6,761 trips/year (2024 results)		From FY2022	
		Railroad container refilling business	Tokyo Freight Terminal - various train stations	1,604 trips/year (2024 results)		From FY2024	

Current Initiatives at the Port of Tokyo

1. Promotion for the uptake of decarbonized cargo handling machinery

- With a view to achieving carbon neutrality by 2050, subsidies have been offered for deploying rubber-tire gantries (RTGs) powered by hydrogen fuel cells since FY2023, aimed at increasing the uptake of FC-powered cargo handling machinery in the Port of Tokyo.
- In the future, expanding subsidy eligibility to include other types of FC- or electric-powered cargo handling machinery will also be considered.

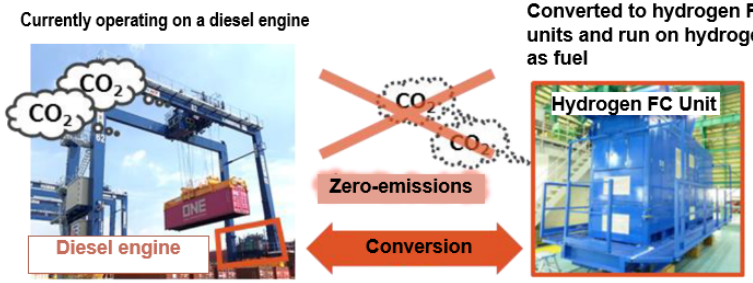
Projects to Promote the Uptake of Hydrogen Fuel Cell Cargo Handling Machinery at the Port of Tokyo

(1) Projects eligible for subsidy
Projects to install RTGs and similar equipment that can be converted to hydrogen fuel cells for use at the Port of Tokyo

(2) Subsidy recipients
Lessees of foreign trade container terminals, port transport business operators having obtained the lessee's consent

(3) Subsidy rate
50% of eligible expenses (Max. subsidy amount: 100 million yen)

(4) Uptake results
28 units (as of the end of FY2025)



Representation of FC conversion for RTGs

[Electric reach stacker]

Source: Kalmar Corporation website

[Electric top lift container handler]

Source: Taylor Machine Works website

[Electric terminal tractor]

Source: Terberg Special Vehicles website

[Electric straddle carrier]

Source: Kalmar Corporation website

Future expansion of the scope of subsidies to be considered

*Across the entire Port of Tokyo, private operators have, in addition to the above, already introduced four FC-converted RTGs (for a total of 32 units) (as of the end of FY2025).

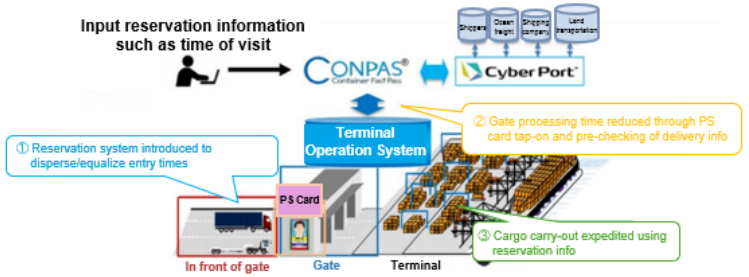
* The Port of Tokyo's hydrogen-fueled RTG conversion project is described on page 48.

2. Initiatives to improve logistics efficiency at foreign trade container terminals

- At the Port of Tokyo, arrivals of trucks picking up and dropping off cargo are concentrated at certain times of the day, causing traffic congestion around some container terminals.
- Efforts to shorten truck waiting times and improve logistics efficiency are working to alleviate traffic congestion and reduce CO_2 emissions from trucks.

Promotion of Container Loading/Unloading Reservation System

[Implementing Bodies] TMG, Tokyo Port Terminal Corporation, Tokyo Koun Kyokai
[Cooperation] Kanto Regional Development Bureau, MLIT
[Implemented Terminals (2025)] Oi No. 1/2, 3/4, 6/7; Aomi No. 4; Outer Central Breakwater Y1
[Project Content] Promotion for the uptake of a container loading/unloading reservation system built on the MLIT's Container Fast Pass ("CONPAS") technology.
In introducing the system, the number of terminals and implementation period are gradually expanded while examining its effectiveness and issues across set intervals, aiming for smooth uptake while also allowing the terminals, truck operators, and other related parties to become familiar with the new system.



Source: Compiled by TMG from "CONPAS Overview" (Cyber Port)

[Project Effects: FY2024]

Reductions in average gate waiting times

Terminal	Type	Non-reserved vehicles	Reserved vehicles (% reduction)
Oi No. 1/2	Carry-in	88.9 min.	18.8 min. (-79%)
	Carry-out	54.9 min.	19.7 min. (-64%)
Oi No. 3/4	Carry-in	110.8 min.	21.4 min. (-81%)
	Carry-out	6.4 min.	1.8 min. (-71%)
Oi No. 6/7	Carry-in	42.2 min.	11.6 min. (-73%)
	Carry-out	32.5 min.	11.5 min. (-65%)
Aomi No. 4	Carry-in	19.5 min.	10.1 min. (-48%)
	Carry-out	15.3 min.	6.8 min. (-56%)

* Average gate waiting time for reserved vehicles includes travel time from vehicle waiting area to gate.

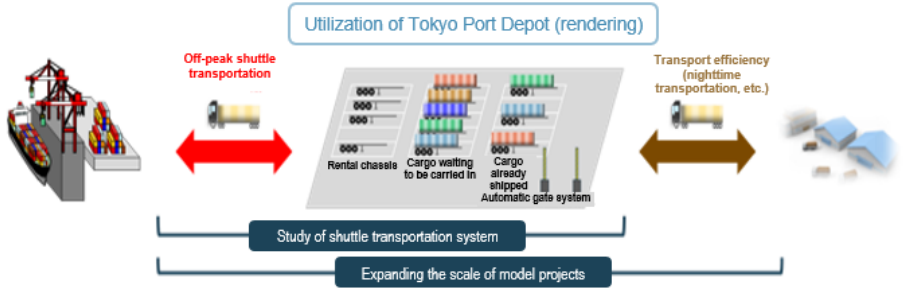
CONPAS in the Port of Tokyo: Participating registered land transport operators

FY2022	Phase 1	18 companies
	Phase 2	47 companies
	Phase 3	56 companies
FY2023	Phase 4	176 companies
	Phase 5	273 companies
FY2024	Phase 6	318 companies
	Phase 7	346 companies

* Phases 1–3 limited to members of the Tokyo Trucking Association's Marine Container Specialized Section.

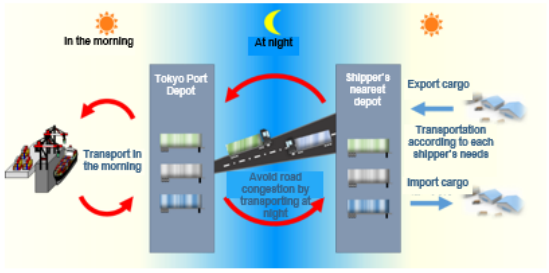
Promotion of Off-Peak Loading/Unloading

[Implementing Bodies] TMG, shipper companies, truck operators, etc.
[Location] Port of Tokyo container terminal areas
[Project Content] Promotion of "off-peak loading and unloading," i.e. during times when container terminals are relatively quiet (namely in the morning).
Through a model project, utilizing a as a relay transport hub for trucks, effects such as reduced waiting times in front of gates and improved transport efficiency were confirmed.
To further boost truck transport efficiency, specific initiatives are put forward in cooperation with shippers and other port-related parties.



[Project Effects: FY2024] Off-Peak Loading/Unloading Model Project

- Depots are utilized to allow transport to be conducted during times when terminals and roads are not congested.
- Transport recorded: 112 trips (over 10 days)
- Participants: 10-company group of shippers and logistics providers



Effects

(Waiting time in front of gate)
43 min. ⇒ **7 min.**
(Transport efficiency)
2 trips ⇒ **3 trips/driver/day**
(Driving time for driver)
3.2 hrs. ⇒ **1.5 hrs./load**

* Each effect is one example from among the demonstrated cases.

3. Initiatives to improve cargo handling efficiency at domestic trade unit load terminals

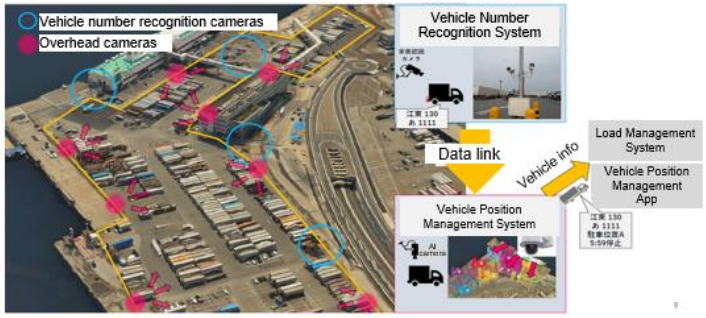
- Subsidies* in place from FY2025 aim to realize shorter loading/unloading times and more efficient cargo handling through digital transformation (DX) at the Port of Tokyo's domestic trade unit load and ferry terminals.
- Controlling vehicle flow more efficiency through entry and exit management and shortening vehicle search times through position information management will function to gradually reduce vehicle operating times within terminals as well as aid in the decarbonization of the Port of Tokyo.

* Subsidy recipients: Ship operators for RORO vessels or ferries using the unit load wharf at the Port of Tokyo, port transport business operators having obtained the ship operator's consent
Subsidy rate: 50% of eligible expenses (Max. subsidy amount: 45 million yen)

[Projects in FY2025]

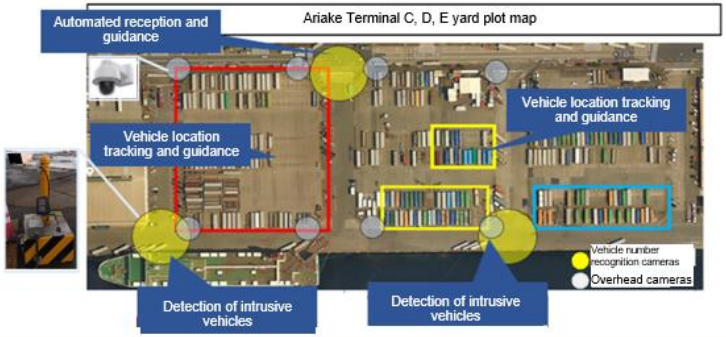
Port of Tokyo Ferry Terminal Cargo Handling Efficiency Project

[Implementing Body] Ocean Trans Co., Ltd.
[Location] Ferry Terminal, VAC Berth
[Project Content] Introduction of AI cameras and systems that provide a bird's-eye view of the entire yard, from which data on vehicle entry/exit, parking locations, and stay times are derived, enabling planning for reductions in vehicle search time, yard management time, etc.



Ariake Terminal Cargo Handling Efficiency Project

[Implementing Body] MOL Sunflower Ltd.
[Location] Lot No. 10 Terminal (West), VE Berth
[Project Content] Installation of cameras in yards to automatically read vehicle license plates, and employment of AI image analysis technology to detect parking locations, enabling planning for reductions in vehicle search time, yard management time, etc.



4. Introduction of environmentally friendly vessels

- With a view toward the Port of Tokyo becoming carbon-neutral, the transition to zero-emission vessels is underway for ships belonging to the Port and Harbor Bureau, along with wide-reaching publicity for the port's role centered around hydrogen fuel cell vessels.

Zero-Emissions Transition for Bureau Vessels

Transition From Diesel To Hydrogen Fuel Cell Vessels

Command boat (*Shinkai*)

Renewal

Command boat (newly-developed) rendering

➢ Operation is scheduled to commence in early FY2026

Review for Zero-Emission Conversion of Bureau-Owned Vessels

➢ Power sources most appropriate for each vessel type are reviewed in conjunction with the renewal of Bureau-owned vessels
(Power source studies conducted from FY2025)

Utilization of Hydrogen Fuel Cell Vessels*

TOKYO H2

Source: Photo provided by Iwatani Corporation

➢ In October 2025, an "Agreement on the Utilization of Hydrogen Fuel Cell Vessels" was concluded between TMG and Iwatani Corporation.
➢ This aims to facilitate collaboration and cooperation on the following initiatives.
- Projects for operating hydrogen fuel cell vessels in the Port of Tokyo
- PR activities to communicate the usefulness of hydrogen fuel and FC-powered ships as well as the role of the Port of Tokyo
- Providing opportunities to board these ships at environmental learning events and international events hosted through the project

➢ Vessels are utilized in various places to aid the transition to a hydrogen-powered society.

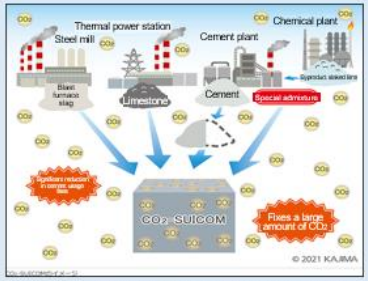
* This is Japan's first passenger vessel to sail on a hybrid of hydrogen fuel cells and storage batteries, built by Iwatani Corporation. It successfully operated as a commercial passenger ship connecting Osaka's city center to the site of Expo 2025 in the same prefecture.

5. Decarbonization for port construction

- Aims to decarbonize the Port of Tokyo through **reduced CO_2 emissions from port construction activities**.
- Consideration is given to the **use of construction materials that aid decarbonization efforts**, such as **low-carbon concrete and green steel**, as well as to the **use of next-generation fuels and promoting electrification** for construction machinery (low-carbon concrete introduced on a trial basis in FY2025).

Depiction of low-carbon concrete

[Cement substitution]



Source: Kajima Corporation website

[CO_2 absorption]

Depiction of next-generation fuel use

Pocom 12

Bunkering situation

Source: Penta-Ocean Construction Co. Ltd. website

[Work barge utilizing biofuel]

6. Seagrass bed generation projects

- In the Port of Tokyo, there is limited area suitable for generating seagrass beds due to a harsh growth environment (turbidity and high water temperatures in summer) and heavy vessel traffic. In December 2024, a **"Port of Tokyo Seagrass Bed Generation Action Policy"** was formulated, **focusing on the functions** of blue carbon ecosystems as a **habitat for diverse organisms and a place for environmental learning**.
- Initiatives based on this policy are promoted with the participation of Tokyo residents and businesses.

Eelgrass seed planting activities (Odaiba Seaside Park)

Eelgrass (seagrass)

<Port of Tokyo seagrass bed generation activities for FY2025>

Eelgrass seeding meet-up at Odaiba Seaside Park

Event date: Saturday, December 13, 2025
Participants: Approx. 160 people
Contents: Environmental learning, seed planting activities, etc.

7. Construction of Umi-no-Mori Hydrogen Station (Kamigumi Co., Ltd. & others)

- In March 2025, Kamigumi Co., Ltd., Toyota L&F Tokyo Co., Ltd., and SKM Co., Ltd. established a joint operating company, and have commenced construction on “Umi-no-Mori Hydrogen Station,” the first commercial power station to utilize green hydrogen in the Port of Tokyo’s waterfront district.
- This will be a multi-function hydrogen station that can accommodate both supply/sales of hydrogen to the fuel cell forklifts used by Kamigumi Co., Ltd., as well as general use by the large fuel cell trucks and buses that are expected to become more widespread in the future.

[Overview of Hydrogen Station]

Name: Umi-no-Mori Hydrogen Station

Location: 1-3-4 Umi-no-Mori, Koto-ku, Tokyo
Kamigumi Tokyo Multipurpose Distribution Center

Construction start: April 2026 (scheduled)

Operation start: April 2027 (scheduled)

Site area: Approx. 2,300 m^2

Hydrogen filling pressure: 45 MPa, 82 MPa

Hydrogen supply system: Off-site system

Hydrogen supply capacity: >500 Nm^3/h (large-scale)

KAMIGUMI TOYOTA L&F トヨタL&F東京株式会社 SKM

8. Promotion of decarbonization upon the relocation of facilities (Tokyo Suisan Terminal Co., Ltd.)

- The refrigerated warehouses at the Oi Marine Products Terminal constitute a major distribution center that supports livelihoods and economic activities across the Tokyo metropolitan area, handling 40% of Tokyo's annual volume of imported marine products and 10% of Japan's domestic volume.
- On the other hand, the facilities which were constructed about 40 years ago are now deteriorating, and there is a need to respond to changes in modern logistics patterns, making large-scale renewal works a necessity.
- In light of the above, work on relocating the warehouses to Jonanjima (Ota Ward) commenced in August 2024, with a basic project concept of "Contributing to rich dietary lifestyles for the people of greater Tokyo through the operation of a large-scale refrigerated warehouse in the Port of Tokyo." Efforts are underway to "realize Japan's largest, safest, and most secure refrigerated warehouse," that is also environmentally friendly.
- Upon this relocation, the following initiatives are being implemented to aid in furthering CO_2 emission reductions at the Port of Tokyo.

[Details of Initiatives]

Construction method ・・・ Complete exterior insulation method (insulation not only for roofs and walls but also underfloor) adopted to maximize air conditioning efficiency

Energy ・・・ Solar power generation equipment (approx. 3,800 kW) and cogeneration system installed to reduce energy costs and minimize environmental burden

Cooling facilities ・・・ All-natural refrigerant facilities (ammonia, carbon dioxide-based gases) adopted

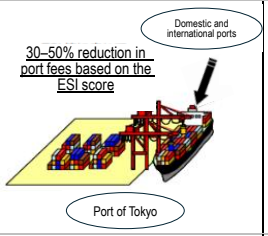
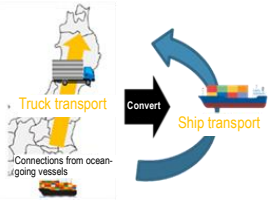
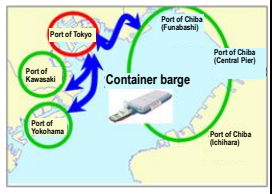
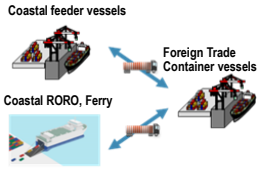
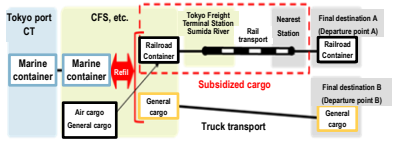
⇒ CO_2 emissions reduction achieved: 5,040 t-CO_2 (41% reduction from pre-relocation warehouse facilities)

[Building Overview]

Location: 6-15-1 Jonanjima, Ota-ku, Tokyo
Building area: 47,223.64 m^2
Site area: 90,656.09 m^2
Construction works: February 2025
(construction start)
Operation start: 2027 (scheduled)
Number of floors: 6 floors above ground
Warehouse capacity: Approx. 298,000 tons

9. Subsidy systems for reduction/exemption of port entry fees and logistics efficiency improvement at the Port of Tokyo

- To reduce environmental impact and improve logistics efficiency, the Port of Tokyo offers support to private sector operators through a system for reducing or exempting various port fees, as well as subsidies for making improvements to logistics efficiency.

		Green Ship Incentives	LNG Incentives	Hydrogen Incentives	Feeder Transport Incentives	Barge Incentives
Port Entry Fee Reduction/Exemption System (primarily for environmental impact reductions)	Subject	Vessels subject to port entry fee collection	Vessels subject to port entry fee collection	Vessels subject to port entry fee collection	Coastal feeder vessels transporting containers at the Port of Tokyo	Barges transporting containers at the Port of Tokyo
	Outline					
	Reduction/Exemption Details	Port entry fees reduced based on Environmental Ship Index (ESI) values for vessels, as certified by the World Port Sustainability Program (WPSP).	Port entry fees exempted for LNG-fueled vessels and LNG supply vessels.	Port entry fees exempted for hydrogen-fueled vessels.	Port entry fees exempted for registered coastal feeder vessels.	Mooring facility fees reduced by 75% for registered container barges using mooring facilities pre-designated by TMG for temporary standby purposes.
Logistics Efficiency Project Subsidy System		In-Port Lateral Transfer Business (Sea)	In-Port Lateral Transfer Business (Rail)	Railroad Container Refilling Business	Feeder Transport Business	Barge Lateral Transfer Business
	Subject	Requesters of in-port lateral transfer	Requesters or operators of in-port lateral transfer	Requesters of transport by railroad	Shipping business operators using the Port of Tokyo	Requesters of barge lateral transfer (shipping business operators, etc.)
	Outline				* As per the port entry fee reduction/exemption system described above	* As per the port entry fee reduction/exemption system described above
	Subsidy Amount	10,000 yen per shipment (for both loaded and empty containers)	2,000 yen per shipment (for both loaded and empty containers) * For cases of rail-based Container Round Use (CRU), the subsidy amount will be doubled.	Per rail container 12ft: 5,000 yen, ≥20ft: 10,000 yen * Upper limit of 20,000 yen per 1 FEU for marine containers (equivalent to four 12ft rail containers)	Per 1 FEU Loaded containers: 3,000 yen Empty containers: 2,000 yen	Per 1 FEU Loaded containers: 2,000 yen Empty containers: 1,000 yen
	FY2024 Results	16,950,000 yen (1,695 shipments)	13,522,000 yen (6,761 shipments, of which CRU: 908)	8,035,000 yen (1,604 shipments)	136,114,000 yen (50,095 FEU)	26,100,000 yen (18,656 FEU)

New Initiatives at the Port of Tokyo

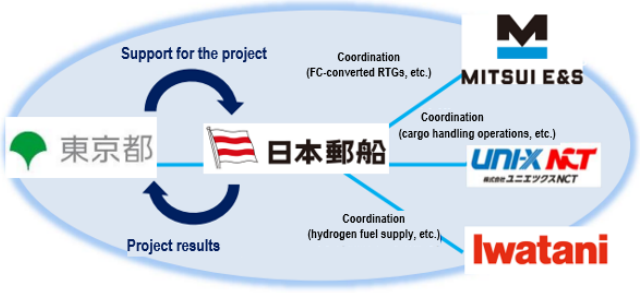
1. Port of Tokyo hydrogen-fueled RTG conversion project (to 2030)

- The utilization of hydrogen energy is an essential step towards realizing the Port of Tokyo Carbon Neutral Port.
- To this end, a demonstration project is being implemented for a rubber tyred gantry (RTG) that operates on hydrogen fuel, with a view to the future establishment of a stable supply system for hydrogen energy in the port.

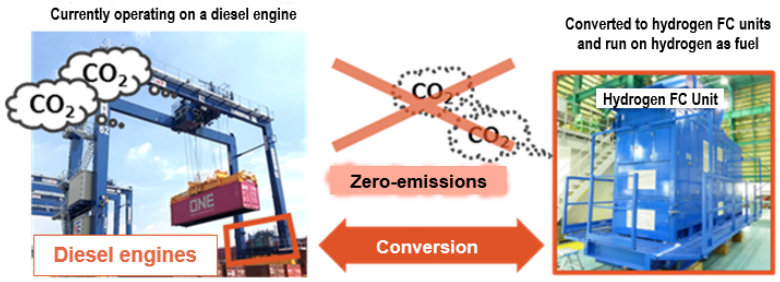
Fuel Cell Conversion Project for Cargo Handling Machinery at the Port of Tokyo

- In May 2023, Nippon Yusen Kabushiki Kaisha, UNI-X NCT Corporation, MITSUI E&S Co., Ltd., Iwatani Corporation, and TMG signed an agreement to implement the "Fuel Cell Conversion Project for Cargo Handling Machinery at the Port of Tokyo," making use of FC-converted RTGs that have been introduced by Nippon Yusen and others.
- From October 2024 to March 2025, Japan's first hydrogen-fueled RTG cargo handling operations were carried out.
- The FC-powered units were confirmed to have the same operability and cargo handling capacity as diesel units, but without emitting CO_2.

[Project scheme]



[Depiction of FC conversion for RTGs]



[New initiatives]

・From FY2026 onwards, to further promote the decarbonization of the Port of Tokyo, the contents of initiatives thus far (the number of machines in operation, the method of hydrogen supply utilizing new mobile hydrogen stations, etc.) are being updated, with the implementation of a hydrogen-fueled RTG conversion project in planning.

・Zero-emissions cargo handling machinery is being promoted at the Port of Tokyo through a gradual roll-out.

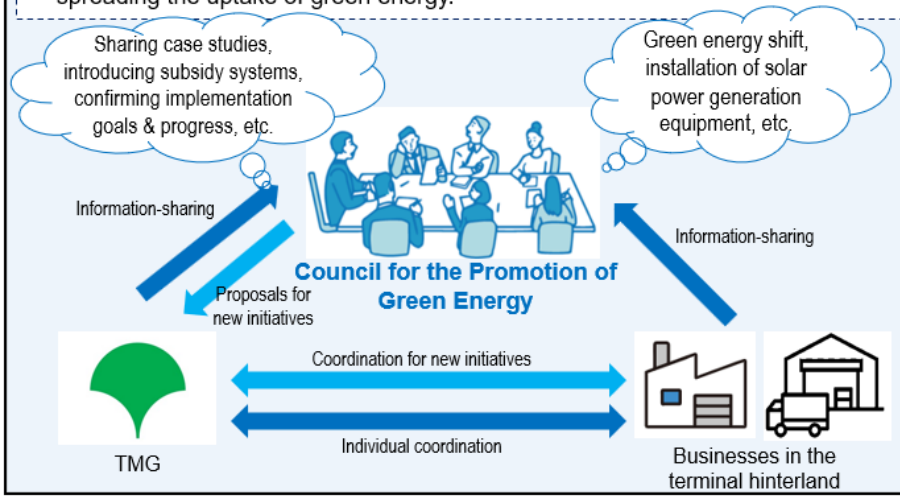
2. Green energy utilization at the Port of Tokyo

- TMG is actively supporting private sector initiatives to promote decarbonization in the terminal hinterlands.
- The terminal hinterlands emit a large volume of CO_2 linked to electricity. For the short term, a shift to green energy sources is planned for the area's power, which accounts for roughly 70% of CO_2 emissions, and for the mid- to long-term, efforts are focused on producing green energy as well as shifting to alternative power sources such as hydrogen, with TMG aiming to realize each planned goal.

[New initiatives]

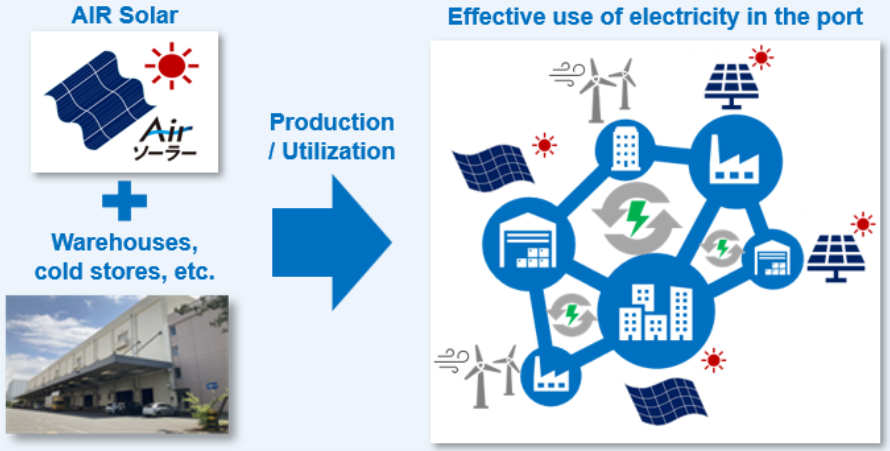
Shift — Promoting the Shift to Green Energy

○ TMG and industry groups have collaborated to establish a **council for the promotion of green energy**. Through continuous examination of roadblocks and methods related to green energy uptake, the shift is being advanced.
○ Reporting and disseminating information on **cost reductions and other benefits** along with **case studies for introduction** through the council helps in spreading the uptake of green energy.



Product — Production and Utilization of Green Energy

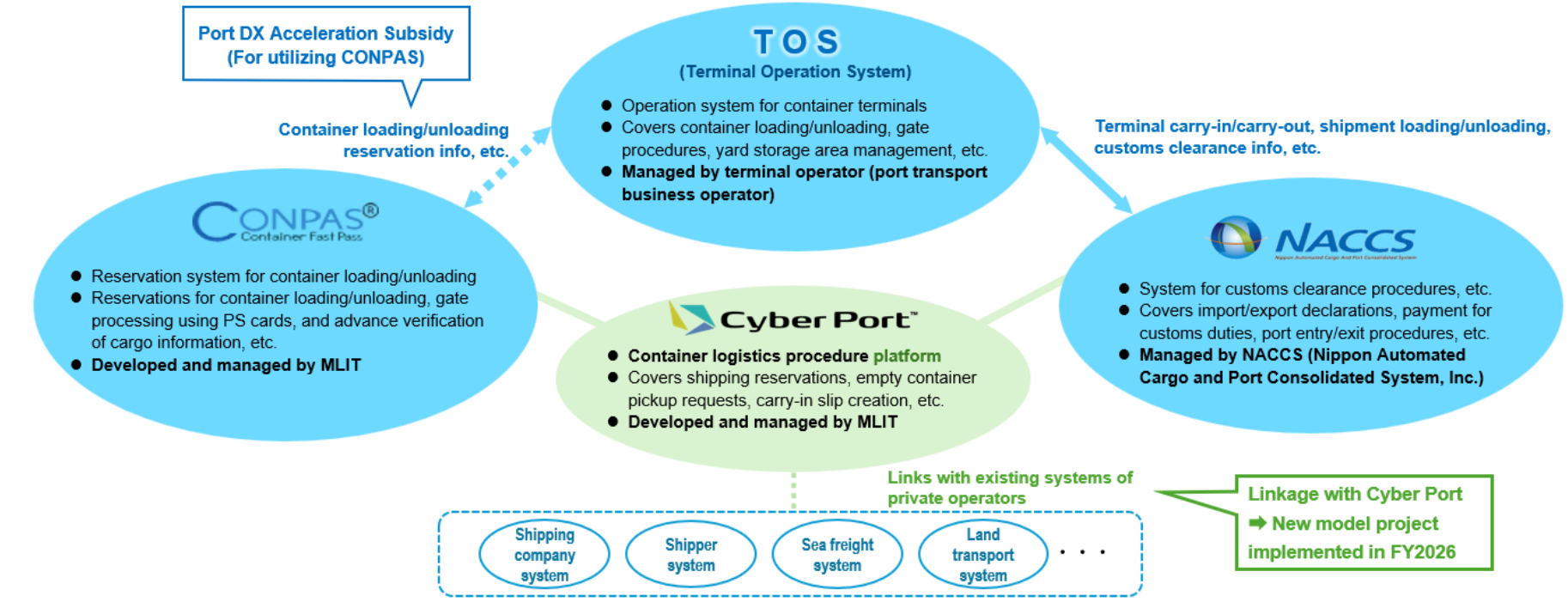
○ **Support is provided for the introduction of AIR Solar, etc.** in warehouses and cold stores in cooperation with the relevant authorities.
○ **Private operator is recognized** for promoting decarbonization, including for reducing emissions through equipment upgrades, and their efforts are publicized.
○ Electricity produced in the Port of Tokyo is utilized effectively among business operators in the port.



3. System integration with “Cyber Port”

- In order to shorten gate processing times at container terminals and to improve the efficiency of cargo transfer, the Port of Tokyo has been providing subsidies to terminal operators for system modification costs related to the linkage between CONPAS and TOS (Port DX Acceleration Subsidy).
- In FY2026, a new model project is being implemented to promote the digitization of various procedures for port logistics operators and improve their overall productivity. Technical advice and support for system modifications for the use of “Cyber Port” are to be provided, and results widely disseminated to other businesses as an advanced example.

Relationship chart for major port logistics system



4. Reorganization and upgrade of Oi Container Terminal (to FY2035)

- Upon a shared recognition of the need to reorganize and upgrade the Oi Container Terminal, the main wharf of the Port of Tokyo, TMG, along with Tokyo Port Terminal Corporation, Nippon Yusen Kabushiki Kaisha, Mitsui O.S.K. Lines, Ltd., Kawasaki Kisen Kaisha, Ltd., and Wan Hai Lines (Japan), Ltd., agreed to undertake a concrete review toward the implementation of such a project.
- Upon the reorganization, along with the site of the relocated refrigerated warehouses of the Oi Marine Products Terminal, TMG is to acquire privately owned land in the terminal hinterland and utilize this to enhance container terminal functionality, thereby effecting the renewal of a state-of-the-art container terminal, in coordination with relevant stakeholders.
- Conversion into a sustainable, low-environmental-burden "zero-emission terminal" is to be realized by utilizing next-generation power sources such as hydrogen and green energy generated by solar and wind power, as well as by shifting to EVs and FC-powered units for cargo handling machinery such as reach stackers.

[New initiatives]

Expansion of Oi Container Terminal (Port Plan)

Relocation of refrigerated warehouses at Oi Marine Products Terminal

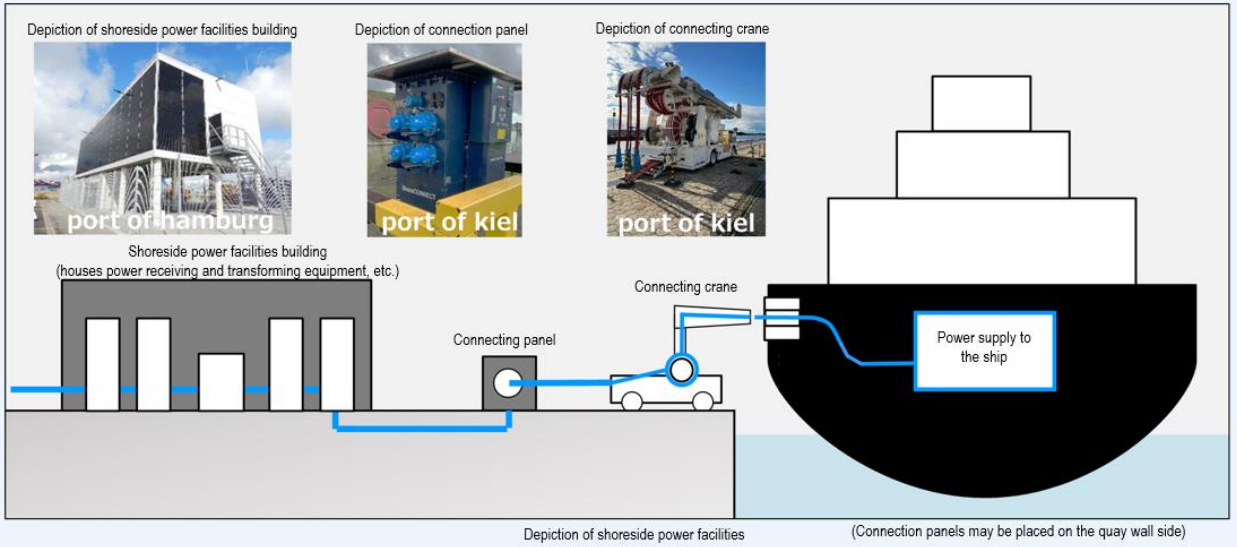
	Current site	Relocated site
Location	Tokai 5-chome, Ota-ku, Tokyo	Jonanjima 6-chome, Ota-ku, Tokyo
Main facilities	5 refrigerated warehouses (incl. TMG-operated shed)	2 private refrigerated warehouses
Site area	Approx. 9.4 ha	Approx. 9.1 ha

Depiction of Oi Container Terminal after large-scale renewal

5. Introduction and utilization of shoreside power facilities (to FY2035)

- In order to reduce CO_2 emissions from ships at berth, a shoreside power supply system capable of servicing the world's largest cruise ships is being introduced.

Target terminal for development: Tokyo International Cruise Terminal



- Shoreside power facilities refer to equipment that supplies electricity for air conditioning, lighting, etc., consumed by ships at anchor.
- By utilizing shoreside power, ships at berth do not need to run their engines to generate electricity, leading to reduced CO_2 emissions at the port.
- Facility development is being advanced for the Tokyo International Cruise Terminal, at which large cruise ships dock (operation scheduled to begin by the end of FY2035).

4.4 Initiatives to Supply Hydrogen, Ammonia, etc.

In June 2023, TMG concluded a partnership agreement with Kawasaki City and Ota Ward to expand the use of hydrogen energy in the air port waterfront area, and the three parties are collaborating to build a supply system, including a hydrogen pipeline, and to expand demand.

In addition, in April 2024, the "Council for the Study of Establishing a Hydrogen Supply System in Tokyo, Including Pipelines" was established to promote efforts to build a hydrogen supply system for the city, boosting demand for this energy and ensuring its early real-world implementation, with the future import of hydrogen from overseas being anticipated. The public and private sectors are working in unison at each meeting to advance the necessary discussions. Going forward, the council and its subcommittees will continue to collaborate on establishing a supply system that takes into account future hydrogen demand within the Port of Tokyo.

In addition, the port's hydrogen storage facility needs as well as possibilities for utilizing other next-generation energy sources, such as ammonia, biomass, LNG, synthetic methane, etc., are also to be reviewed.

Kawasaki City, Ota Ward, and TMG Sign Partnership Agreement to Expand Utilization of Hydrogen Energy (concluded on June 1, 2023)

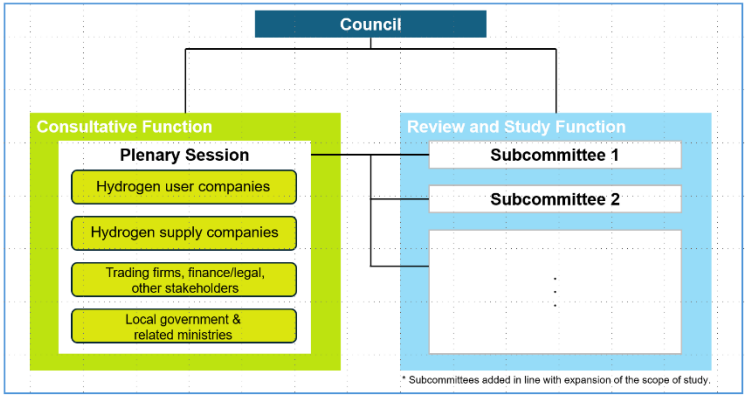
(Left) Mayor of Kawasaki, (Center) Governor of Tokyo, (Right) Mayor of Ota Ward

Visualization of three-party collaboration

Source: Documents published by the "Council for the Study of Establishing a Hydrogen Supply System in Tokyo, Including Pipelines"

Council for the Study of Establishing a Hydrogen Supply System in Tokyo, Including Pipelines

○ **Council structure chart**



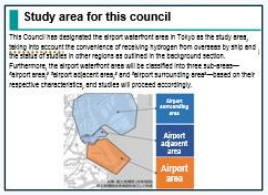
○ **Member companies, etc.**

Enterprises	Enterprises
Iwatani Corporation	Mizuho Bank, Ltd.
ENEOS Corporation	Sumitomo Mitsui Banking Corporation
NTT, Inc.	Mitsui & Co., Ltd.
NTT Data Institute Of Management Consulting, Inc.	Mitsubishi Kakoki Kaisha, Ltd.
EBARA Corporation	Mitsubishi Corporation
Kawasaki Heavy Industries, Ltd.	MUFJ Bank, Ltd.
Airport Facilities Co., Ltd.	**Federal Government**
Kubota Corporation	Ministry of the Environment
Komatsu Ltd.	East Japan Civil Aviation Bureau, MLIT
JFE Engineering Corporation	Kanto Regional Development Bureau, MLIT
JFE Holdings, Inc.	Agency for Natural Resources and Energy, METI
JERA Co., Inc.	**Local Government**
Jonanjima Association	Chuo Ward
Overhead-Hydropipe LLC	Minato Ward
Japan Hydrogen Association (JH2A)	Koto Ward
Sumitomo Corporation	Shinagawa Ward
Tokyo Gas Co., Ltd.	Ota Ward
Tokyo Gas Network Co., Ltd.	Kawasaki City
Keihinjima Industrial Park Association	**Tokyo Metropolitan Government**
Toyota Industries Corporation	Bureau of Construction
Nishimura & Asahi, Foreign Law Joint Enterprise	Bureau of Port and Harbor
Japan Airport Terminal Co., Ltd.	Bureau of Urban Development
Japan Airlines Co., Ltd.	Bureau of Sewerage
Japan Suiso Energy, Ltd.	
Development Bank of Japan Inc.	
Bio Energy Corporation	
Panasonic Corporation	
Haneda Iron Works Complex Cooperative	
East Japan Railway Company	
Marubeni Corporation	

Initiatives Toward Real-World Implementation of Hydrogen Energy

- TMG is promoting various initiatives aimed at stimulating demand for hydrogen energy in the city and fast-tracking its real-world implementation.

Council for the Study of Establishing a Hydrogen Supply System in Tokyo, Including Pipelines



- In 2024, the "Council for the Study of Establishing a Hydrogen Supply System in Tokyo, Including Pipelines" was established to promote efforts to build a hydrogen supply system within the city, with the **future import of hydrogen from overseas** being anticipated.
- **A blueprint and roadmap for hydrogen supply and demand in the future** are being considered as such.

Green hydrogen plant & production facilities

Keihinjima Green Hydrogen Plant

Conceptual overview from hydrogen production to utilization

- In October 2025, the first water electrolysis unit was completed on TMG-owned land in Keihinjima, Ota Ward, the site for a green hydrogen production base development, and this has **formally opened as the Tokyo Keihinjima Green Hydrogen Plant**.
- Three units in total are scheduled to be operational in FY2027.
- Plans are also underway for the **development of a green hydrogen production facility** at the **Outer Central Breakwater Landfill Site**, powered solely by on-site solar generation equipment.
  (Hydrogen production scheduled to begin in FY2028)

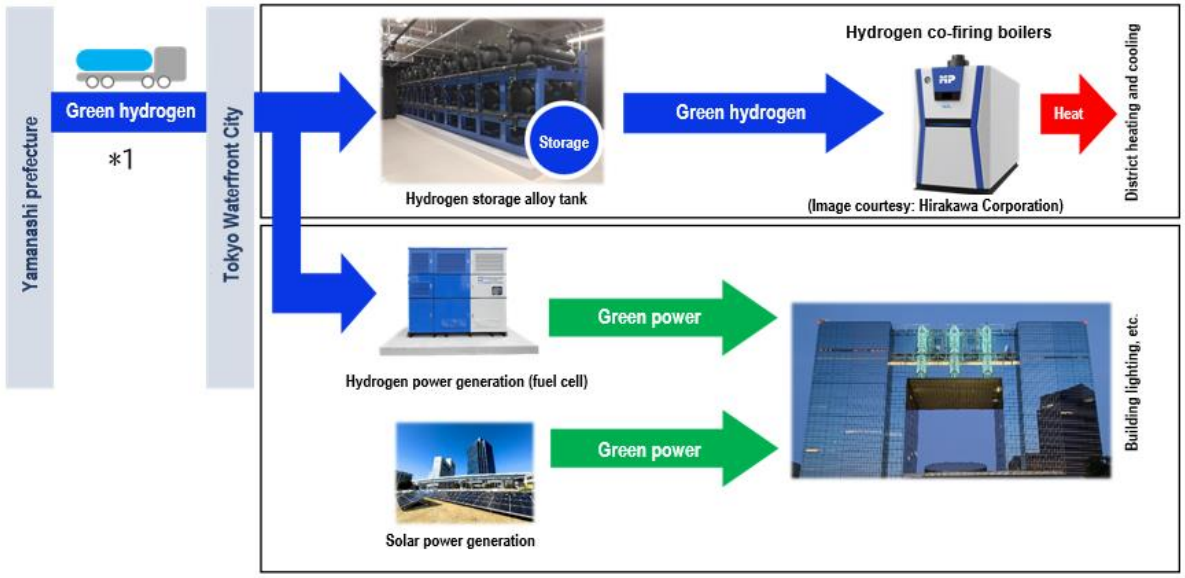
TOKYO H2 Project

- In September 2025, the project was launched with the aim of accelerating the **movement to adopt hydrogen energy** through public-private collaboration.
- **The goal for spreading fuel cell commercial mobility** is to introduce around **10,000 vehicles by FY2035**. Building upon a mass deployment of fuel cell taxis, Japan's first such initiative, the uptake of fuel cell commercial mobility is being promoted, including in the transportation and logistics sectors. **Public-private collaboration** will work to increase the number of users in various fields **utilizing hydrogen, the key to stable energy supply and decarbonization**.

(Reference) Hydrogen Application (Usage/Storage) in Tokyo Waterfront City

- In the Aomi district of Tokyo Waterfront City, TMG began joint research with research institutes and private companies in FY2023 towards implementing Japan's first hydrogen co-firing boiler for district heat and cooling, as well as developing a green energy supply model centered on hydrogen and solar power.
- Moving forward, research and development into safe hydrogen storage technology for district heat and cooling and stable supply technology for hydrogen co-firing boilers is being promoted.

*1 Green hydrogen is procured from Yamanashi Prefecture based on the "Basic Agreement on the Promotion of Green Hydrogen Utilization" (TMG and Yamanashi Prefectural Government, October 2022).



*2 Conducted as a joint research project based on the "Basic Agreement on the Promotion of Decarbonization Through Hydrogen Use in Tokyo Waterfront City"

5 Matters Related to the Evaluation of Plan Achievement Status

After plan formulation, the Port of Tokyo CNP Promotion Council will be convened regularly (see next page for details) to receive information from the implementing bodies of port decarbonization promotion projects across the entire scope of the plan, and to regularly confirm and evaluate the progress of the plan. In conducting the evaluation, quantitative assessments of realized decarbonization effects will be carried out in a timely and appropriate manner at key junctures, such as when significant progress is made in major port decarbonization promotion projects or when substantial changes occur among enterprises in and around the port area. At these junctures, fuel and electricity consumption data from companies participating in the Council will be compiled to determine the amount of CO_2 emissions reductions achieved. With respect to the pre-established KPIs, specific numerical targets and actual performance values will be compared for designated target years. For years other than the target years, evaluations will focus on whether actual performance levels are on track toward achieving the targets set for the target years. Based on the results of evaluations of the plan's achievement conducted by the Council, as well as opinions and insights provided by experts, the plan will be flexibly reviewed as necessary. To ensure that such reviews are effectively reflected in concrete decarbonization initiatives, a framework for implementing a PDCA (Plan–Do–Check–Act) cycle will be established.

In addition, subcommittees will be convened as necessary to promote and establish monitoring and evaluation frameworks for decarbonization initiatives specific to certain plan categories and target facilities.

(Reference) About the Port of Tokyo Carbon Neutral Port (CNP) Promotion Council * A "port decarbonization council" pursuant to Article 50-3, paragraph (1) of the Port and Harbour Act

- In December 2024, the Port of Tokyo CNP Promotion Council was established with 49 member organizations, including the Port & Harbor Administrator, with a view to promoting decarbonization efforts across the public and private sectors.

[Academic Expert]

Mariko Futamura, Professor, School of Arts and Sciences, Tokyo Woman's Christian University

[Companies/Organizations]

Azuma Shipping Co., Ltd.
ISEWAN Terminal Service Co., Ltd.
Umios Logistics Corporation
Utoc Corporation
Evergreen Shipping Agency (Japan) Corp.
Ocean Trans Co., Ltd.
Ocean Network Express (Japan) Ltd.
Japan Foreign Steamship Association (JFSA)
Kamigumi Co., Ltd.
Kawasaki Kisen Kaisha, Ltd.
Kanto Passenger Ships Association
Kuribayashi Unyu Co., Ltd.
Kuribayashi Steamship Co., Ltd.
Sankyu Inc.
JERA Co., Inc.
The Shibusawa Warehouse Co., Ltd.
Mitsui O.S.K. Lines, Ltd.
Suzue Corporation
The Sumitomo Warehouse Co., Ltd.
Daiichi Koun Co., Ltd.
Daito Corporation
Tokyo Koun Kyokai
Tokyo Port Terminal Corporation
Tokyo Suisan Terminal Co., Ltd.
Tokyo Souko Kyoukai
Tokyo Trucking Association
Tokyo Association of Refrigerated Warehouses
Nichirei Logistics Engineering
Nissui Logistics Corporation
The Japanese Shipowners' Association (JSA)
Nippon Express Co., Ltd.
Nippon Yusen Kabushiki Kaisha
MITSUI-SOKO HOLDINGS Co., Ltd.
Mitsubishi Logistics Corporation
Yasuda Logistics Corporation
Yamatane Corporation
UNI-X NCT Corporation
Wan Hai Lines (Japan), Ltd.

[Government Agencies]

Kanto Regional Development Bureau, MLIT
Kanto District Transport Bureau, MLIT
Kanto Bureau of Economy, Trade and Industry, METI
Chuo Ward
Minato Ward
Koto Ward
Shinagawa Ward
Ota Ward
Bureau of Industrial and Labor Affairs, TMG

[Secretariat]

Bureau of Port and Harbor, TMG

(Reference) Port of Tokyo CNP Promotion Council Subcommittees

In FY2025, a subcommittee was convened for member companies and organizations of the Port of Tokyo CNP Promotion Council involved in the warehousing and cold storage sector. Specifically, opinions were exchanged on the latest trends in decarbonization technologies and methods, including the shift to green energy, alongside discussions on the introduction of further decarbonization initiatives at each company's business sites in the Port of Tokyo.

In the following fiscal year and beyond, subcommittees are to be convened as necessary to achieve the planned targets, with the decarbonization of the Port of Tokyo being promoted through the continuous strengthening of collaboration efforts.

Port of Tokyo CNP Promotion Council Subcommittee Members (for FY2025)

Academic Experts (honorifics omitted)

Mariko Futamura, Professor, School of Arts and Sciences, Tokyo Woman's Christian University
Toshikazu Muroga, Senior Consultant, NX Logistics Research Institute and Consulting, Inc.

Companies/Organizations

Umios Logistics Corporation, Tokyo Souko Kyoukai,
Tokyo Association of Refrigerated Warehouses, Shibusawa Warehouse,
Tokyo Suisan Terminal, Nichirei Logistics Engineering, Nissui Logistics,
Mitsubishi Logistics, Yasuda Logistics, Yamatane Co.

[Meetings in FY2025]

1st Port of Tokyo Carbon Neutral Port (CNP) Promotion Council Subcommittee Meeting

Date and time: Friday, June 20, 2025, 13:30–15:00
Agenda: (1) Decarbonization initiatives for the terminal hinterland
(2) Carbon-neutral (CN) & logistics facilities
(3) Proposals from the Tokyo Metropolitan Government
(4) Exchange of opinions, other items

2nd Port of Tokyo Carbon Neutral Port (CNP) Promotion Council Subcommittee Meeting

Date and time: Wednesday, August 6, 2025, 13:30–15:00
Agenda: (1) Report on questionnaire survey results for the 1st subcommittee meeting
(2) Automation technology, decarbonization for warehouses & cold stores
(3) Future measures for decarbonization
(4) Joint purchase projects for renewable-based electricity
(5) Future initiatives toward decarbonization
(6) Exchange of opinions, other items

6 Matters Deemed Necessary by the Port & Harbor Administrator for the Implementation of the Port Decarbonization Plan

6.1 Future Course for the Promotion of Port Decarbonization

Decarbonization initiatives that are envisioned to be undertaken in the mid- to long-term are described in the table below, as the "Future Course for the Promotion of Port Decarbonization."

Table 6-1: Future Course for the Promotion of Port Decarbonization

Category	Project	Site(s)	Implementing Body	Implementation Period	Project Effects CO_2 reduction (t-CO_2/year)
Terminals (inside terminals)	Strengthening linkages with coastal vessels and rail transport	Port of Tokyo (inside terminals)	TMG Tokyo Port Terminal Corporation Leased business operators Marine transport operators Railroad operators, etc.	Up to 2050	To be determined
Terminal Hinterland (outside terminals)	Local production and local consumption of green energy	Warehouses outside terminals, etc.	TMG Warehouse companies, etc.	Up to 2050	To be determined
Vessels / Vehicles	Development of shoreside power supply facilities	Port of Tokyo (inside terminals)	TMG Tokyo Port Terminal Corporation	Up to 2050	To be determined
	Uptake promotion for next-generation energy vessels in the Port and Harbor Bureau's fleet	Port of Tokyo	TMG	Up to 2050	To be determined
	Installation of shoreside power supply receiving equipment	Port of Tokyo, others	Ocean Network Express (Japan) Ltd.	—	— (Net zero GHG emissions by 2050 (Scope 1,2,3))
	Onboard CCS (Carbon Capture and Storage) for vessels	Port of Tokyo, others	Ocean Network Express (Japan) Ltd.	—	To be determined

6.2 Application of the Decarbonization Leading Areas System in the Port's Land Use Policy

Going forward, so as to relax regulations on structures within the waterfront districts and thereby aid in achieving plan targets, TMG is to consider the designation of "Decarbonization Leading Areas" in nominated waterfront districts within the Port of Tokyo, in a manner that is compatible with the purpose of such subdivision designations.

6.3 Initiatives for Decarbonization that Enhance Port and Industry Competitiveness

The Port of Tokyo will work to reduce its environmental impact by strengthening the functionality of foreign trade container terminals, realizing modal shifts, and improving logistics efficiency through DX; the uptake of zero-emissions cargo handling machinery and solar power generation equipment is also to be advanced, with such initiatives continuously being expanded.

In addition, green energy uptake, shoreside power supply for ships, and the diffusion of electric-powered vessels and vehicles are also to be coordinated. With a view to the proliferation of next-generation energy sources such as hydrogen and the commissioning of ships utilizing such fuels, work is to be undertaken to utilize next-generation energy sources in vessels, cargo handling machinery, on-site trucks, etc., and to establish a supply system for hydrogen and other energy sources.

Furthermore, in order to promote decarbonization initiatives by private businesses, TMG is to request the national government to relax regulations on hydrogen utilization, etc., and to provide financial support and tax incentives for private capital investment, while also implementing its own support measures for the private sector.

Through the above efforts, the Port of Tokyo aims to achieve carbon neutrality and become the port of choice for shipping companies and shippers who are working to decarbonize their shipping routes and supply chains.

6.4 Initiatives for Port Resilience (Supply chain strengthening for hydrogen, ammonia, etc.)

At the Port of Tokyo, in order to realize a robust port that can reliably maintain its logistics functions even in the event of a major earthquake, typhoon, storm surge, or other disaster, highly earthquake-resistant port facilities are being developed, and measures are being taken to prevent the flooding of power plants and other facilities. Work is also being undertaken to strengthen the seismic resistance of the revetment that protects the port's reclaimed land areas. Furthermore, for the ongoing facilitation of land transport to the hinterland, efforts are being made to remove utility poles from port roads and terminal sites.

6.5 Roadmap

Formulated in order to systematically advance decarbonization efforts for the Port of Tokyo, the roadmap below organizes various initiatives, including those set forth in the Greenhouse Gas Reduction Plan, over the short-, mid-, and long-term.

The roadmap is to be reviewed as necessary based on the status of initiatives by each company involved, as well as developing trends in technology related to decarbonization.

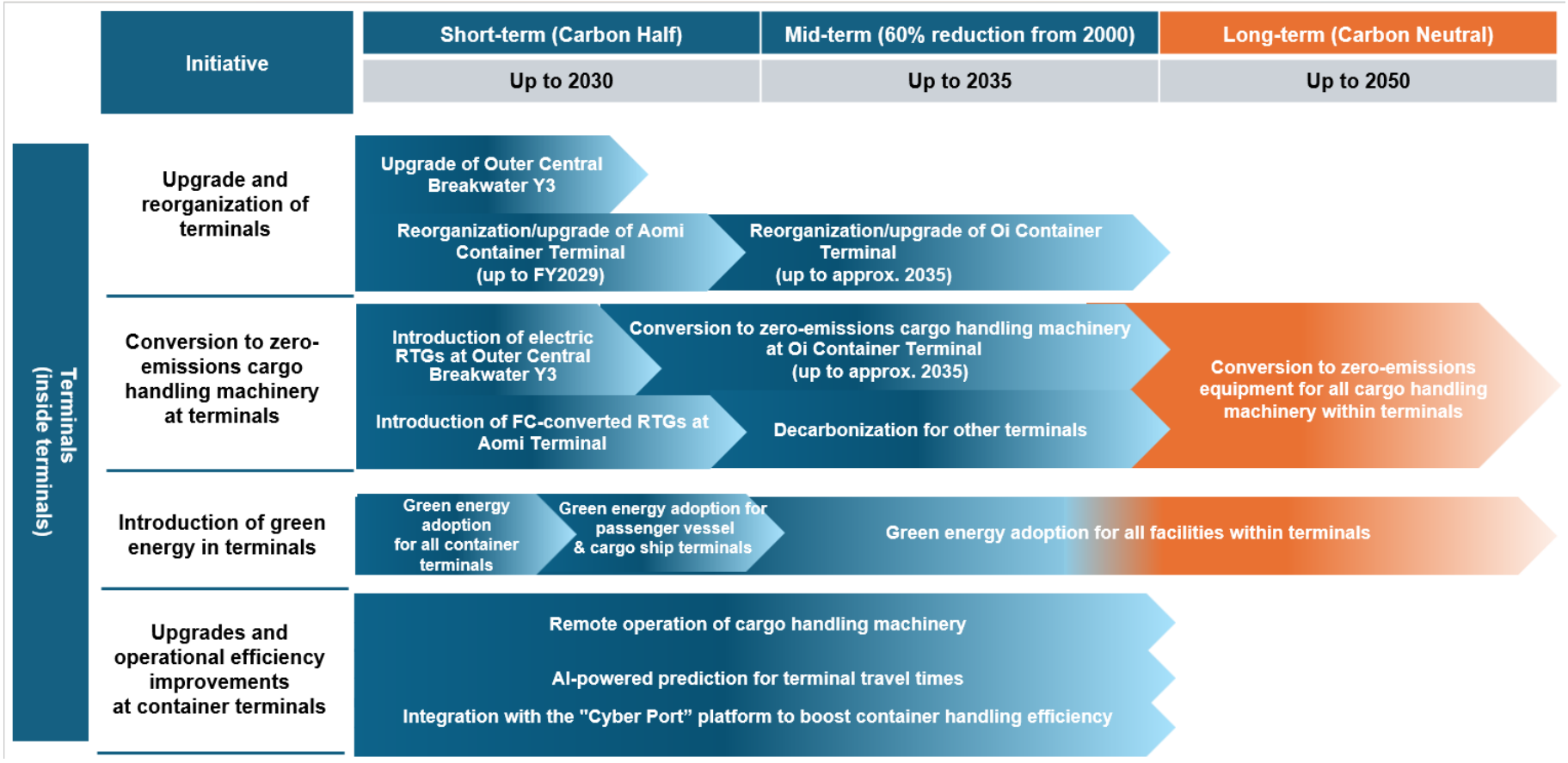


Figure 6-5: Roadmap to Carbon Neutral by 2050 (1/2)

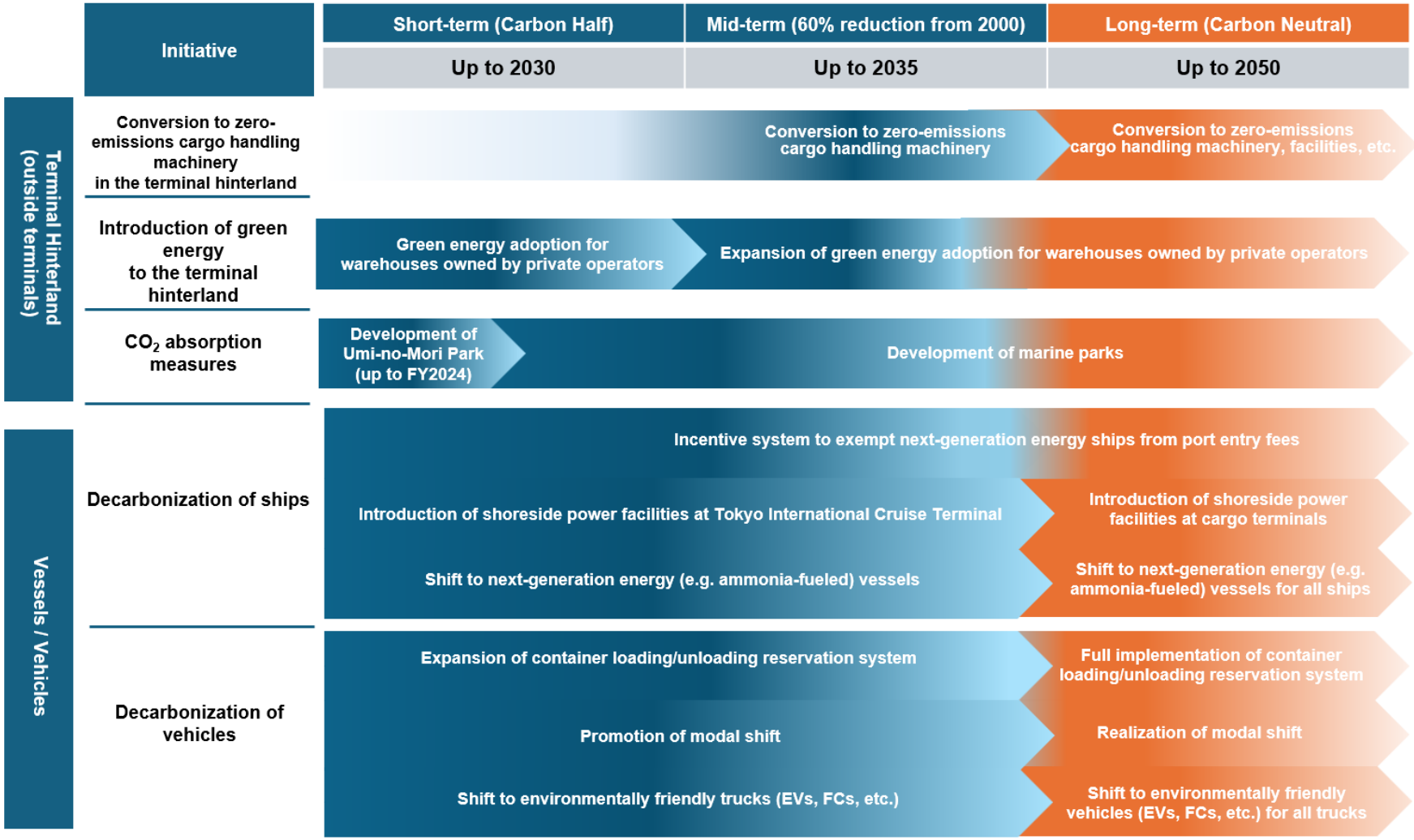


Figure 6-5: Roadmap to Carbon Neutral by 2050 (2/2)