

Port and Harbor Decarbonization Plan for the Port of Yokohama (Appendix)

4-1. Projects related to the reduction of greenhouse gas emissions and maintaining and improving absorption



Revised March 2026

(Formulated March 2025)

City of Yokohama

(Port Management Body of the Port of Yokohama)

4. Port decarbonization promotion projects and their implementers

4-1. Projects related to the reduction of greenhouse gas emissions and maintaining and improving absorption

4-1-1. Efforts to decarbonize the waterfront area

The project to promote decarbonization of the port and harbor in the waterfront area of Yokohama (initiatives to decarbonize the waterfront area) and its implementing entities are as follows. The list below shows the current status of initiatives by each entity, and will be updated to reflect the future development of technologies that contribute to decarbonization, considerations by each entity based on changes in social conditions, progress in inter-company collaboration, and participation by new entities.

(1) Short-to-medium term (FY2030)

Table 25: Efforts to decarbonize the waterfront area (short-to-medium term)

Waterfront Area Initiatives			
Initiatives	Implementing Entity	Place	Implementation period
Energy-saving lighting equipment (LEDs, etc.)	AGC	Yokohama technical center	2019~2021
	ENEOS	Yokohama Factory	FY2023~
	Ohgishima Power	Ohgishima power station	FY2013~FY2023
			FY2024~FY2025 (Actual)
			FY2026 (Plan)
	Tokyo Gas	Tsurumi ward	FY2024 introduction
	Toshiba Energy Systems & Solutions	Keihin office	FY 2024~
	Yokohama City University	All campuses	2021~FY2026
	IHI	Yokohama office	2021~FY2024
	JFE Engineering	Yokohama head office	Implemented in FY2022
	Mitsubishi Heavy Industries	Honmoku	~FY2026
	Uyeno Group Holdings Ltd	Head Office Building	FY 2024
Energy conservation in air conditioning and heat source equipment, etc. (Equipment renewal, energy management, DHC improvement, etc.)	AGC	AGC Yokohama technical center	~2030
	Ohgishima Power	Ohgishima power station	FY2025 (Actual)
	TOAGOSEI	YOKOHAMA PLANT	Implemented in FY2020-2025, with effects occurring after completion.
	Yokohama City University	Fukuura campus and affiliated hospital	2021~FY2026 2021~FY2027 2021~FY2024
		Tsurumi campus	2022~FY2026 2022~FY2026 2023~FY2026
	JFE Engineering	Yokohama head office	Operation to start in FY2023
	Mitsubishi Heavy Industries	Honmoku	~FY2027
	Uyeno Group Holdings Ltd	Head Office Building	FY 2024
		No. 1 Ueno Building	FY 2025

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
1,200,000kWh	—	
FY2023 110lights 9.2kW	58	
full implementation	169	
full implementation	5	
full implementation	41	
full implementation	2	
72% introduction rate	40	
58.3MWh	27	
Adoption rate 95%	800	
full implementation	350	
full implementation	40	
(Before renewal) Electricity consumption: 135,502 kWh	34	
Energy Management in Common Sector	3,700	
Renewal of GHP system in the office building	35	
Renewal of No. 1 turbo refrigerator	Under confirmation	Equipment commenced operation in June 2025
A. Renewal of power receiving and transforming equipment and high-efficiency transformers B. Renewal of aging air conditioning equipment C. Steam piping repair (leak), hospital vertical piping (south side) repair	47	The Citizen's Medical Center and Kanazawa Hakkei Campus will work on the same basis, but since they are outside the scope of the project, CO ₂ emissions reductions will not be recorded.
A. Fin cleaning of PAC outdoor unit. B. Cooling water pump INV conversion C. Renewal of cooling unit in low-temperature room	5	
Introduction of storage batteries(2.5MW/5MWh)	—	
Renewal and rationalization of air conditioning and hot water supply facilities	120	
(Before renewal) Electricity consumption: 345,212KWh	84	
(Before renewal) Electricity consumption:86,989kWh	13	

Waterfront Area Initiatives			
Initiatives	Implementing Entity	Place	Implementation period
Energy conservation in production facilities	ENEOS	Negishi refinery	at any time
			FY2022～
			FY2023～
		Yokohama Factory	FY2022～ FY2024～
Building decarbonization (multiple initiatives)	NTT DOCOMO BUSINESS, Inc.	1 telecommunications building	2023～2030 (one part～2040)
		4 office locations	2023～2030
	Hitachi	Systemplaza Yokohama	implementation
	the City of Yokohama	Minato Mirai 21 district	FY2022～ FY2030, currently being carried out
	MUFG Bank	Global Learning Center	FY2024
Utilization of unused energy	TOAGOSEI	YOKOHAMA PLANT	Implemented from 2021 to FY2024, with effects occurring after completion Implemented from 2022 to FY2026, with effects occurring after completion.
Solar Power Generation	IHI	Yokohama office	2023～FY2030
	Uyeno Group Holdings Ltd	Head Office Building	FY 2025～
Offshore Wind Power Generation	Toshiba Energy Systems & Solutions	Keihin Office	FY2028～
	Yokohama Engineering Works, Ltd.	Anzen Dockyard, Daikoku Factory	FY2027～ (planned)
Use of decarbonized electricity and fuels (CO2-free electricity, certificates, credits)	AGC	Yokohama technical center	2022～
	Tokyo Gas	the City of Yokohama	FY2023 introduction
	JFE Engineering	Yokohama head office	To be introduced sequentially from FY2021
	NYK Line	Hikawa Maru	FY2020～
		Yokohama Branch, Maritime Museum Group	FY2023～
	MUFG Bank	Branches and other facilities	FY2022
Renewal of generators, hydrogen and ammonia utilization	The Nisshin OilliO Group	Isogo office	FY 2025～operation
			After 2027, by 2030
Next Generation Fuel Bunkering	Mitsubishi Gas Chemical	Port of Yokohama	FY 2025

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Energy-saving modification of existing facilities	—	
Reducing Crude Oil Processing Capacity	349,000	
Introduction of large storage batteries	—	
Removal of unnecessary piping(0.241 Ton/h)	310	
Reduction of steam use during long vacations(GW 10 days Obon 10 days)	33	
Decarbonization of bases (Energy savings through equipment upgrades, Purchase of non-fossil certificates, etc.)	1,200	
Decarbonization of Group sites (Energy savings through equipment upgrades, Purchase of non-fossil certificates, etc.)	300	
• Replacement with high-efficiency air conditioners • Review of appropriate number of air conditioners and humidifiers in operation • Purchase of non-fossil certificates	2,105	7.7% reduction from the previous year
Decarbonization areas Decarbonizing electricity use in buildings (thorough energy conservation, introduction of renewable energy, etc.)	190,000	Ministry of the Environment Regional Decarbonization Transition and Renewable Energy Promotion Grant [Joint Applicant] City of Yokohama, General Incorporated Association Yokohama Minato Mirai 21
Decarbonization areas Decarbonizing heat energy use in buildings (through offsetting, equipment upgrades, etc.)	45,000	[Participating Businesses] 45 facilities in the district(as of November 2025)
Decarbonization of heat (10,199 GJ/year)	(680)	Included for reference only, as they are included in the reductions in the Decarbonization Leading Areas.
Reduction of steam consumption through heat recovery	561	Equipment commenced operation in November 2023
Demonstration test of effective use of incinerated waste heat	6,349	FY2024 Subsidy for Carbon Dioxide Emission Control Project - Application Approved
1,000kW	100	
Decarbonization through the use of renewable energy	Measurement in progress	
Manufacture of wind turbine nacelles 72 units per year	—	(reference) CO2 reduction
Manufacture of anchors for floating offshore wind power Approximately 20 anchors to be manufactured for two large-scale demonstration projects under the GI Fund promoted by METI and NEDO (off southern Akita Prefecture: 2 turbines; off Tahara and Toyohashi, Aichi Prefecture: 1 turbine)	—	Application planned for a GX subsidy from the Ministry of Economy, Trade and Industry (METI)
Approx.35,000,000kWh/year	16,000	
full implementation	13,454	
100% introduction in Yokohama area	5,000	
Use electricity derived from renewable energy	—	
The tenant building uses electricity derived from renewable energy	—	
100% introduction rate	—	
Gas Turbine Renewal(8,000kW class)	1,200	
Gas turbine 1% hydrogen co-firing per year	1,100	
Methanol bunkering is conducted via ship-to-ship operations at anchorage for ocean-going vessels, with further efforts aimed at building additional operational track records.	TBD	The methanol includes biomethanol manufactured at the Niigata Plant of Mitsubishi Gas Chemical Company, Inc.

Waterfront Area Initiatives			
Initiatives	Implementing Entity	Place	Implementation period
Development and demonstration of various technologies	ENEOS	Central Research Laboratory	2025 Development and technical demonstration of large electrolyzer 2030s Aim for social implementation
			Scale-up demonstration at plant scale has been underway since FY2022.
			Starting from 2022
			Under implementation
	Tokyo Gas	Tsurumi ward	Under implementation
			Demonstration from FY2022
Other	NYK Line NTT FACILITIES, INC. Eurus Energy Holdings Corporation MUFG Bank	Yokohama Osanbashi PIER	Scheduled to run for one year from March 2026, followed by three months for dismantling.
	ENEOS	the City of Yokohama	FY2014～
	Mizuho Bank	Port of Yokohama	Plan
	Mitsui E&S	—	April 2024～
Glass Recycling	AGC	AGC Yokohama technical center	2026～
Supply of methanol as a hydrogen carrier and hydrogen generators	Mitsubishi Gas Chemical	Yokohama Port Waterfront Area	Targeting supply start in 2028
(Reference) Total amount of reductions by CNP Council members (15 companies) calculated from the global warming action			

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Direct MCH®: Development of low-cost production technology for MCH, a type of hydrogen carrier	—	
Development of synthetic fuel production technology	—	
Development of chemical recycling technology to produce raw materials for tires from used tires	—	
Ongoing development of MCH-FC technology, which generates electricity using methylcyclohexane (MCH), a type of hydrogen carrier, as a feedstock.	—	
Development of bioethanol production technology	—	
Production demonstration test of e-methane (synthetic methane)	—	Preparing to acquire Clean Gas Certificate
Green Data Center Demonstration Project A demonstration of an offshore data center has been under construction since October 2025.	19	
Hydrogen station operation(4 locations)	—	
Support for the creation of new financial schemes to promote initiatives for the formation of a carbonneutral port	—	
Widespread use of high-pressure, high-flow hydrogen compressors	—	
Recycling of 3,000 t/year of glass cullet	1,800	Maximum case
Initiate supply of container-sized portable hydrogen generators and methanol aqueous solution as a hydrogen feedstock to customers.	TBD	The methanol is expected to include biomethanol produced at Mitsubishi Gas Chemical's Niigata Plant.
Short to Medium Term Combination	639,100	
n plan system (2013 → 2022)	1,163,695	

(2) Medium-term (FY2040)

Table 26: Efforts to decarbonize the waterfront area (medium-term)

Waterfront Area Initiatives				
Initiatives	Implementing Entity	Place	Implementation period	
Energy-saving lighting equipment (LEDs, etc.)	Nissan Motor	Honmoku Wharf	2018~FY2032	
Decarbonization of heat (synthetic methane utilization, etc.)	The Nisshin OilIIO Group	Isogo office	FY2030~	
Synthetic methane supply	Tokyo Gas	the City of Yokohama	To be introduced sequentially from FY2030 onward	
Offshore Wind Power Generation	Yokohama Engineering Works, Ltd.	Anzen Dockyard, Daikoku Factory	FY2031~FY2040	
Next Generation Fuel Bunkering	Mitsubishi Gas Chemical	Port of Yokohama	after FY 2030~	
Supply of methanol as a hydrogen carrier and hydrogen generators	Mitsubishi Gas Chemical	Yokohama Port Waterfront Area	Continued and expanded from short- to medium-term plan	

(3) Long-term (FY2050)

Table 27: Efforts to decarbonize the waterfront area (long-term)

Waterfront Area Initiatives				
Initiatives	Implementing Entity	Place	Implementation period	
Energy saving in production facilities	JFE Steel	Ohgishima	Plan	
Use of decarbonized electricity and fuels(CO2-free electricity, certificates, credits)	JFE Steel	Ohgishima	Plan	
	The Nisshin OilIIO Group	Isogo office	Plan	
	The Nisshin OilIIO Group	Isogo office	Plan	
Renewal of generators, hydrogen and ammonia utilization	IHI	Yokohama office	Plan	
	the City of Yokohama	Minato Mirai 21 district	Creation of a roadmap to 2050 in FY2023	
	JERA	—	TBD	
Hydrogen use in LNG- and coal-fired power generation	Electric Power Development(J-POWER)	Isogo Thermal Power Plant	TBD	

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Full LED conversion of 13,300 lights across the site Completion scheduled for 2032	505	Compared with 2018 baseline after replacement of 13,300 lights
Synthetic methane (e-methane) (minimum 1% of supply)	860	
Supply of e-methane (synthetic methane)	TBD	Studying the possibility of introducing more than 1% of city gas in 2030. Project effects will be discussed in conjunction with future concretization.
Manufacturing of Anchors for Floating Offshore Wind Power Facilities Plans for mass production of anchors for commercial projects across Japan, approximately 100–200 units per year	—	Planned application for a GX subsidy from METI
Expansion of bunkering systems in line with the development of methanol supply bases, along with continued bunkering operations	TBD	
Continued and expanded supply of container-sized portable hydrogen generators and methanol aqueous solution as a hydrogen feedstock, leveraging the development of methanol supply bases.	TBD	
Total Mid-term Initiatives	1,365	

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Energy saving by downsizing pumps, etc.	—	
Conversion from natural gas to carbon neutral fuel for heating furnaces, etc.	—	
Amount of electricity received	600	
Gas turbine hydrogen co-firing GT : 60%、Reheating : 100%	15,700	
Gas engine power plant fuel conversion (City gas → Ammonia)(4,000kW)	TBD	
Fuel conversion to hydrogen and other fuels in district heating and cooling under the Minato Mirai Hydrogen Project (boiler capacity to be determined)	45,000	
Hydrogen conversion of LNG-fired power plants, etc.	—	Promote company-wide conversion of LNG- fired power plants to hydrogen to reduce emissions intensity of thermal power generation. *We would like to refrain from giving a definite answer on the scale and period of implementation at each location at this time.
Transition of thermal power sources based on J-POWER BLUE MISSION 2050 (2 units)	—	In accordance with the J-POWER BLUE MISSION 2050 roadmap, high-efficiency coal-fired power plants will also select the most appropriate technology based on the characteristics of the site and contribute to a stable supply of electricity while reducing carbon emissions and decarbonization. *In May 2024, we presented the direction of transition for our seven thermal power plants, including the Isogo Thermal Power Plant. However, it may be revised according to preconditions such as policy, electricity supply and demand conditions, and progress in industrial development.

Waterfront Area Initiatives			
Initiatives	Implementing Entity	Place	Implementation period
Establishment of electric power supply bases and supply of renewable energy power	the City of Yokohama,Ocean Power Grid, MUFG Bank,etc.	Port of Yokohama	TBD
Offshore Wind Power Generation	Yokohama Engineering Works, Ltd.	Anzen Dockyard, Daikoku Factory	FY2040～FY2045 (planned)
Next Generation Fuel Bunkering	Idemitsu Kosan	Honmoku Pier Minami Honmoku Pier	Plan
	Mitsubishi Gas Chemical	Port of Yokohama	Continuation and expansion from the medium-term plan
Consideration of land use conversion	JFE Holdings	Ohgishima	FY2023～
Supply of methanol as a hydrogen carrier and hydrogen generators	Mitsubishi Gas Chemical	Yokohama Port Waterfront Area	Continuation and expansion from the medium-term plan

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Introduction of renewable energy from offshore wind power by battery tankers	TBD	5 parties MOU concluded with the City of Yokohama, TEPCO Power Grid, Ocean Power Grid, TODA CORPORATION, MUFG Bank (January 2025)
Manufacturing of Anchors for Floating Offshore Wind Power Facilities Plans for mass production of anchors for commercial projects across Japan, approximately 100–200 units per year	—	
eMethanol fueling for container ships	TBD	eMethanol demand calculation in progress
Expansion of bunkering systems in line with the development of methanol supply bases, along with continued bunkering operations	TBD	
Land use conversion to areas leading the way in carbon neutrality	TBD	
Continued and expanded supply of container-sized portable hydrogen generators and methanol aqueous solution as a hydrogen feedstock to customers, leveraging the development of methanol supply bases	TBD	
Total Long-term Initiatives	61,300	
Total Promotion Project Initiatives	701,765	

(4) Reduction Effect of CO₂ Emissions

Table 28: Effects of Decarbonization Initiatives on CO₂ Emissions Reduction

Item	Total
① : CO ₂ emissions in the base year (2013)	9,093,000t
② : CO ₂ emissions in the most recent year (2022)	6,394,000t
③ : CO ₂ emission reductions from port decarbonization promotion projects (2023-2050)	728,000t *
④ : Reduction of CO ₂ emissions from base year (2050) (①-②+③)	3,427,000t
⑤ : Reduction rate (④／①)	37.7%

*The total of 701,000 tons for the port decarbonization promotion projects in the waterfront area and 27,000 tons for the port decarbonization promotion projects at the piers.

4-1-2. Initiatives for decarbonization at the piers

The project to promote decarbonization of the port and harbor in the waterfront area of Yokohama (initiatives to decarbonize at the piers) and its implementing entities are as follows.

These are the current status of initiatives conducted by each entity. The report will be updated to reflect the considerations of each entity in light of future developments in technologies that contribute to decarbonization and changes in social conditions, as well as the progress of inter-company collaboration and the participation of new entities.

(1) Short to medium term (FY2030)

Table 29: Efforts toward decarbonization at piers (short to medium-term)

Efforts at the wharf (in the terminal)			
Initiatives	Implementing Entity	Place	Implementation period
Energy-saving lighting equipment (LEDs, etc.)	the City of Yokohama	In Terminal public facilities	~FY2030
	Yokohama Kawasaki International Port Corporation	Minami Honmoku Pier MC-4	FY2021
		Honmoku Pier D-4	FY2025~
		Honmoku Pier D-5	FY2025~
		Honmoku Pier D-1	FY2026~
		Minami Honmoku Pier MC-1~3	FY2026~
		Honmoku Pier BC	FY2027~
	Yokohama Port Corporation	Daikoku Pier C-1~4,L-1~8	FY2014~2024
Building decarbonization (multiple initiatives)	Yokohama Port Corporation	Daikoku Pier C-1~4,L-1~8,etc. Daikoku Pier A-5	Phased implementation by FY2030
Solar Power Generation	Yokohama Port Corporation	Minami Honmoku Pier MC-1,2	FY2014~
		Minami Honmoku Pier MC-3	FY2015~
	the City of Yokohama	Daikoku Pier T-4	FY2014~
		Daikoku Pier Y-CC	FY2016~
Use of decarbonized electricity and fuels (CO2-free electricity, certificates, credits)	Yokohama Kawasaki International Port Corporation	Honmoku Pier D-1	FY2022~
		Honmoku Pier D-4	FY2022~
		Honmoku Pier BC	FY2022~
		Daikoku Pier T-9	FY2022~
	Terminal lessee, etc.*	Minami Honmoku Pier MC-1~4	~FY2029 conceptual stage
	Yokohama Port Corporation	Daikoku Pier C-1	FY2022~
		Daikoku Pier C-2	FY2022~
		Daikoku Pier L-1~8	FY2022~
		Honmoku Pier A-5,6	FY2022~
		—	FY2023~
	NYK Line	Daikoku Pier C-3	2020~

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
adjusting	—	
Six lighting towers, gantry crane lighting facilities, etc.	—	Effects of the project are accounted for in the introduction of renewable electricity
Six lighting towers, gantry crane lighting facilities, etc.	—	
Four lighting towers, gantry crane lighting facilities, etc.	—	
Six lighting towers, gantry crane lighting facilities, etc.	—	
15 lighting towers, gantry crane lighting facilities, etc.	—	
13 lighting towers, gantry crane lighting facilities, etc.	—	
Adoption rate 100 %	—	40%-50% reduction in electricity consumption for lighting
Achieve ZEB Ready certification through improved insulation performance, enhanced energy efficiency of HVAC and hot water systems, and further optimization of LED lighting, including both efficiency improvements and review of the number of units in operation.	69	
520kW	249	FIT
310kw	184	FIT
300kw	160	FIT
24.5MWh/year	13	
2,145MWh/year	948	
5,645MWh/year	2,495	
9,459MWh/year	4,181	
675MWh/year	299	
27,000kWh/year	10,176	
252MWh/year	110	
198MWh/year	80	
1,389MWh/year	580	
142MWh/year	50	
Use of J-credits (gasoline)	16	
Use of electricity derived from renewable energy	—	

Efforts at the wharf (in the terminal)

Initiatives	Implementing Entity	Place	Implementation period
Introduction of decarbonized cargo handling equipments	Yokohama Kawasaki International Port Corporation	Honmoku Pier D-1	FY2021～FY2024
		Honmoku Pier D-4	2024～FY2027
		Minami Honmoku Pier MC-4	After 2026
		Honmoku Pier BC	After 2026
		Honmoku Pier MC-1,2	FY2020～FY2024
		Honmoku Pier BC	FY2021～FY2023
		Honmoku Pier BC	FY2025～FY2026
		Honmoku Pier D-5	After2028
		Honmoku Pier C5～9	FY2026～FY2028
Introduction of decarbonized cargo handling equipments	Suzue Corporation, Sankyu, Sumitomo Warehouse, Tokyo International Terminal, Mitsubishi Logistics Corporation, Port of Yokohama Mega Terminal	Honmoku Pier BC	FY2015～FY2023
	Nippon Express Kamigumi	Honmoku Pier D-1	～FY2021
			FY2022～FY2026
	CMACGMJAPAN	Honmoku Pier D-4	FY2013
	APM Terminals Japan	Minami Honmoku Pier MC-1～4	FY2015～FY2023
			FY2025～FY2026 conceptual stage
	Terminal lessee, etc.*	Minami Honmoku Pier MC-1～4	FY2027～FY2029 conceptual stage
			FY2027～FY2029 conceptual stage
			FY2027～FY2029 conceptual stage
			FY2027～FY2029 conceptual stage
			FY2027～FY2029 conceptual stage
			FY2027～FY2029 conceptual stage
	Mitsui E&S	Port of Yokohama	FY2023～FY2024

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Introduction of energy-saving gantry cranes (3 units)	—	Effects of the project are accounted for in the introduction of renewable electricity
Introduction of energy-saving gantry cranes (2 units)	—	
Introduction of energy-saving gantry cranes (2 units)	—	
Introduction of energy-saving gantry cranes (3 units)	—	
Introduction of energy-saving gantry cranes (5 units)	—	
Introduction of energy-saving gantry cranes (2 units)	—	
Introduction of energy-saving gantry cranes (1 units)	—	
Introduction of energy-saving gantry cranes (3 units)	—	
Introduction of energy-saving gantry cranes (2 units)	—	
Low-carbon RTGs 50% of total installed	501	
Low-carbon RTGs 87.5% of total installed	374	
Low-carbon RTGs 100% of total installed	53	
Low-carbon RTGs 100% of total installed	701	
Low-carbon RTGs 93% of total installed	2,134	
Low-carbon RTGs 100% of total installed	305	
RTG 100% adoption rate	4,551	
Reach Stacker 100% adoption rate	2	
Top Lifter 100% adoption rate	1,232	
Forklift 100% adoption rate	107	
Truck on the premises 100% adoption rate	3,013	
On-site demonstration of hydrogen-fueled cargo handling equipment (Our near-zero emission RTGs is powered by a fuel cell)	—	Reduce CO2 emissions to zero
Total short- and medium-term in terminal	32,583	

Efforts at the wharf (incoming/outgoing vessels and vehicles)			
Initiatives	Implementing Entity	Place	Implementation period
Next Generation Fuel Bunkering	the City of Yokohama	Port of Yokohama	—
Decarbonization of vessels	NYK Line	Tokyo Bay	FY2024～
		Port of Yokohama etc.	In service from July 2025
	Daito Corporation	Port of Yokohama etc.	FY2027～
	City of Yokohama	Port of Yokohama	FY2025～
			FY2024～
			FY2023～
	Installation of onshore power supply facilities	the City of Yokohama	Honmoku Pier A-4
Osanbashi Pier			April 2027～
Yokohama Kawasaki International Port Corporatioin etc.		Honmoku Pier D-4,5	Under planning conceptual stage
		Minami Honmoku Pier MC-3,4	Under planning conceptual stage
Introduction of gate reservation system		Kanto Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism	Minami Honmoku Pier
	Honmoku Pier		after FY 2025～
Incentives for environmentally friendly vessels	City of Yokohama	Port of Yokohama	FY2017～
			FY2020～
			FY2025～
Inbound/Outbound			

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Work with companies to implement initiatives	TBD	Assuming an increase in fuel types, listed for all periods.
Ammonia-fueled tugboat One ammonia-fueled tugboat scheduled to enter commercial operation in 2025.	Up to 95% reduction compared to heavy fuel oil	
LNG dual-fuel capability and shore power readiness for Asuka III Asuka III is equipped with a dual-fuel system enabling operation on both heavy fuel oil and LNG, and is also fitted with onshore power supply capability.	—	
Battery-electric propulsion tugboat	—	Project to Promote Innovative Operation Efficiency and Non-Fossil Energy Conversion for Coastal Shipping by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Ministry of Economy, Trade and Industry (METI)
Introduction of biofuel-compatible engines in harbor boat		
Participation in the Blue Visby Consortium	—	
Use of Maritime Emissions Portal (RightShip)	—	
Low-voltage onshore power supply facilities	5	Subsidy for International Strategic Port Rehabilitation Project (Yokohama Port Rehabilitation (International Strategic) Project)
High-voltage onshore power supply facility (for large cruise ships)	—	FY2025 Subsidy for the Creation of New Local Economies and Living Environments (Coastal Area Revitalization Project Centered on the Osanbashi International Passenger Terminal)
High-voltage onshore power supply facilities (for container ships)	—	
High-voltage onshore power supply facilities (for container ships)	—	
full implementation	—	
full implementation	—	
· ESI (Environmental Ship Index) system · Programs by the Green Award Foundation	—	Assuming that the type of incentive will increase with the increase in fuel
LNG-fueled vessels and LNG bunkering vessels	—	Assuming that the type of incentive will increase with the increase in fuel
Methanol-fueled vessels	—	types, the incentives are listed for the
Vessels bunkered with biofuels	—	entire period.
Vehicles Vessels Medium/Short Term Total	5	

(2) Medium-term (FY2040)

Table 30: Efforts toward decarbonization at piers (medium-term)

Efforts at the wharf (in the terminal)				
Initiatives	Implementing Entity	Place	Implementation period	
Introduction of decarbonized cargo handling equipment	Yokohama Kawasaki International Port Corporation	Minami Honmoku Pier MC-1,2	~ FY2040 conceptual stage	
		Honmoku Pier BC	~ FY2040 conceptual stage	
		Shinhonmoku Pier	~ FY2040 conceptual stage	
		Minami Honmoku Pier MC-3	~ FY2040 conceptual stage	
		Minami Honmoku Pier MC-4	~ FY2040 conceptual stage	
		Honmoku Pier BC	~ FY2040 conceptual stage	
		Honmoku Pier D-1	~ FY2040 conceptual stage	
	Terminal lessee, etc.*	Honmoku Pier D-5	~ FY2040 conceptual stage	
			~ FY2040 conceptual stage	
			~ FY2040 conceptual stage	
			~ FY2040 conceptual stage	
		Honmoku Pier BC	~ FY2040 conceptual stage	
			~ FY2040 conceptual stage	

Efforts at the wharf (incoming/outgoing vessels and vehicles)				
Initiatives	Implementing Entity	Place	Implementation period	
Next Generation Fuel Bunkering	the City of Yokohama	Port of Yokohama	—	
Decarbonization of vessels	the City of Yokohama	Port of Yokohama	FY2024 ~	
Incentives for environmentally friendly vessels	the City of Yokohama	Port of Yokohama	FY2017 ~	
			FY2020 ~	
			FY2025 ~	

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Introduction of energy-saving gantry cranes (5 units)	—	Effects of the project are accounted for in the introduction of renewable electricity
Introduction of energy-saving gantry cranes (6 units)	—	
Introduction of energy-saving gantry cranes (8 units)	—	
Introduction of energy-saving gantry cranes (4 units)	—	
Introduction of energy-saving gantry cranes (1 units)	—	
Introduction of energy-saving gantry cranes (2 units)	—	
Introduction of energy-saving gantry cranes (3 units)	—	
RTG 100% introduction rate	925	
Top Lifter 100% adoption rate	227	
Forklift 100% adoption rate	14	
Truck on the premises 100% adoption rate	549	
RTG introduction rate 50%	1,077	
Top lifter introduction rate 13.3%	113	
Trucks on premises introduction rate 22.9%	284	
Total mid-term in terminal	3,189	
Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Work with companies to implement initiatives	TBD	Assuming an increase in fuel types, listed for all periods.
Promotion of the Blue Visby Consortium	—	
• ESI (Environmental Ship Index) system • Programs by the Green Award Foundation • LNG bunkering and LNG bunkering vessels	—	Assuming that the type of incentive will increase with the increase in fuel types, the incentives are listed for the entire period.
LNG-fueled vessels and LNG bunkering vessels	—	
Methanol-fueled vessels	—	
Vessels bunkered with biofuels	—	

(3) Long-term (FY2050)

Table 31: Efforts toward decarbonization at piers (long-term)

Efforts at the wharf (in the terminal)			
Initiatives	Implementing Entity	Place	Implementation period
Introduction of decarbonized cargo handling equipment	Terminal lessee, etc.*	Honmoku Pier BC	~FY2050 conceptual stage
			~FY2050 conceptual stage
			~FY2050 conceptual stage
			~FY2050 conceptual stage
Introduction of decarbonized cargo handling equipment	Terminal lessee, etc.*	Honmoku Pier D-1	~FY2050 conceptual stage
			~FY2050 conceptual stage
			~FY2050 conceptual stage
			~FY2050 conceptual stage

Efforts at the wharf (incoming/outgoing vessels and vehicles)			
Initiatives	Implementing Entity	Place	Implementation period
Next Generation Fuel Bunkering	the City of Yokohama	Port of Yokohama	—
Decarbonization of vessels	Nissan Motor Co., Ltd.	whole company	—
	the City of Yokohama	Port of Yokohama	FY2024~
Incentives for environmentally friendly vessels	the City of Yokohama	Port of Yokohama	FY2017~
			FY2020~
			FY2025~

Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
RTG 100% adoption rate	1,077	
Top Lifter 100% adoption rate	735	
Reach Stacker 100% adoption rate	122	
Truck on the premises 100% adoption rate	959	
RTG 100% adoption rate	990	
Top Lifter 100% adoption rate	199	
Straddle carriers 100% adoption rate	33	
Trucks on the premises 100% adoption rate	279	
Forklift trucks 100% adoption rate	3	
Reach Stacker 100% adoption rate	1	
Long-term total in terminal		4,398
Scale and Breakdown of Initiatives	Project Effectiveness (CO2 reduction t/year)	Note
Work with companies to implement initiatives	—	Assuming an increase in fuel types, listed for all periods.
Adoption of container Bio Fuel vessels for Europe	—	
Promotion of the Blue Visby Consortium	—	
• ESI (Environmental Ship Index) system • Programs by the Green Award Foundation • LNG bunkering and LNG bunkering vessels	—	Assume that the type of incentive will increase with the increase in fuel types, the incentives are listed for the entire period.
LNG-fueled vessels and LNG bunkering vessels	—	
Methanol-fueled vessels	—	
Vessels bunkered with biofuels	—	

(4) Reduction of CO₂ Emissions

Table 32: CO₂ Emissions Reduction Effects of Decarbonization Initiatives at Docks

Item	In Terminal※ 1	Incoming and outgoing vessels and vehicles※ 2	Total
① : CO ₂ emissions in the base year (2013)	37,000t	337,000t	374,000t
② : CO ₂ emissions in the most recent year (2022)	26,000t	326,000t	352,000t
③ : Reduction of CO ₂ emissions through port decarbonization promotion projects(2023 - 2050)	26,000t	0t	26,000t
④ : Reduction of CO ₂ emissions from base year (2050) (①-② + ③)	37,000t	11,000t	48,000t
⑤ : Reduction rate (④／①)	100%	3.3%	12.8%

* 1 Only figures for container terminals are reported.

* 2 The outgoing and incoming vessels include CO₂ emissions from vessels at anchor (including anchorages). CO₂ emissions from inbound and outbound vehicles are not reported because measures such as electrification and modal shift are qualitative at this time.

In the future, this plan will be reviewed and added to the Port Decarbonization Promotion Project as the private sector and others take concrete steps to decarbonize their operations, thereby promoting the project and achieving its goals.

4-1-3. Efforts to create a rich ocean

The project to promote decarbonization of ports and harbors (initiatives to create a rich ocean) at the Port of Yokohama and its implementing entities are defined as shown in the table below.

(1) Short to medium term (FY2030)

Table 33: Efforts to create a rich ocean (short-to-medium term)

Name (Business Name)	Position	Scale	Implementing Entity	implementation period	Effects of the Project (CO ₂ absorption)	Note
Preservation, reproduction and creation of blue infrastructure	Harbor area, etc.	Seawalls, wave dissipating blocks, shallow areas, etc.	City of Yokohama,etc.	~FY2030	Approx.150t- CO ₂ /year	

(2) Medium term (FY2040)

Table 34: Efforts to create a rich ocean (medium term)

Name (Business Name)	Position	Scale	Implement Entity	Implementation period	Effects of the Project (CO ₂ absorption)	Note
Preservation, reproduction and creation of blue infrastructure	Harbor area, etc.	Seawalls, wave dissipating blocks, shallow areas, etc.	City of Yokohama,etc.	~FY2040	Approx. 200t- CO ₂ /year	

(3) Long-term (FY2050)

Table 35: Efforts to create a rich ocean (long-term)

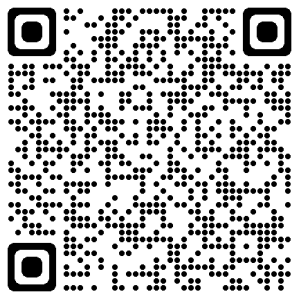
Name (Business Name)	Position	Scale	Implementing Entity	Implementation period	Effects of the Project(CO ₂ absorption)	Note
Preservation, reproduction and creation of blue infrastructure	Harbor area, etc.	Seawalls, wave dissipating blocks, shallow areas, etc.	City of Yokohama,etc.	~FY2050	Approx. 250t- CO ₂ /year	

(4) CO₂ absorption effect

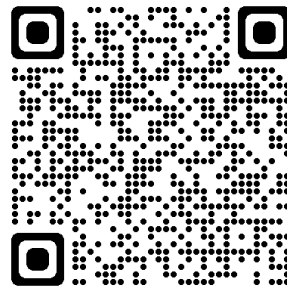
Table 36: Effects of increased CO₂ absorption through efforts to create a rich ocean

	① : CO ₂ Absorption (FY2024)	② : Cumulative amount of CO ₂ absorption (Cumulative amount by FY2050)	③ : rate of increase (②/①)
Total	Approx. 100t/year	Approx. 250t/year	2.5times

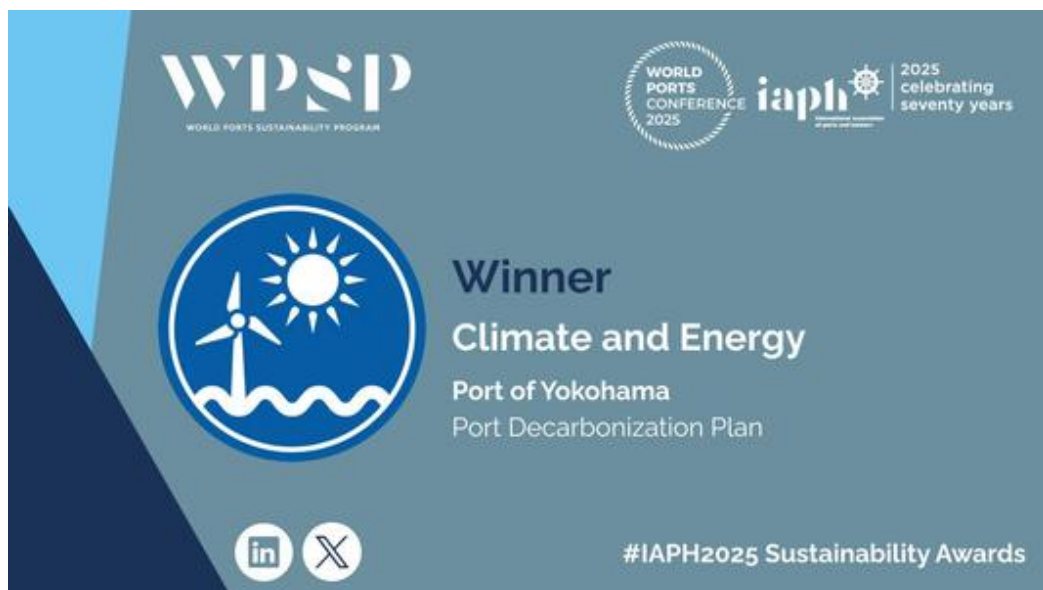
Carbon-Neutral Port Initiatives of the Port of Yokohama



Japanese



English



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