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PORT OF TAIPEI

ENVIRONMENTAL REPORT

TAIWAN INTERNATIONAL PORTS CORPORATION, LTD.

TIPC

2024

Port of Taipei
▪ T A I W A N ▪

Port of Taipei Environmental Report Work Team

Taipei Port Branch Office of Keelung Port, TIPC., Ltd: President, Chuan-Kai Kao
Chief Secretary, Wei-Chien Chang
Senior Director, Kuo-Hung Yeh
Senior Vice Director, Yong-Sin Guo
Manager, Fu-Chi Tsen
Manager, Yu-Ting Chang
Senior Administrator, Chia-Wen Hsu
Assistant Engineer, Yu-Kang Hu
Senior Clerk, Yen-Chieh Li
Senior Technician, Chung-En Wang

Advised by Taiwan International Port Corporation, Ltd.: Vice President of Administration Sean Lu
Occupational Safety and Security Department :
Senior Director, Zhi-Nan Hsieh
Manager,Tsung-Hsun Tsai
Senior Technician, He Yi

Chief editor: Wei-Chien Chang
Executive editor: Kuo-Hung Yeh
Layout design: URBAN MOSS DESIGN
Examine and revise: Yong-Sin Guo
Guang-Zai Peng
Fu-Chi Tsen
Yu-Ting Chang
Chia-Wen Hsu
Yen-Chieh Li
Yu-Kang Hu
Chung-En Wang

Publishers: Taiwan International Ports Corporation, Ltd.
Address: No.10, Penglai Rd., Gushan Dist., Kaohsiung City 804, Taiwan (R.O.C.)
TEL : +886-7-5219000

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01

Message from Port of Keelung, TIPC

As global environmental awareness continues to rise, major ports worldwide are increasingly integrating port management concepts with sustainable environmental development. Taiwan International Ports Corporation's Keelung Port Branch, while pursuing operational growth, is also actively implementing various environmental protection measures to establish Taipei Port as a green port.

Located on the southwest coast of the Tamsui River estuary, Taipei Port is a man-made port entirely constructed through land reclamation. The port is still undergoing continuous expansion, with strict implementation of environmental impact assessments and adherence to environmental commitments during the construction process to ensure that port development and environmental protection are equally prioritized.

Taipei Port obtained the European EcoPorts certification in 2016, 2018, 2020, and 2022. The port's concrete actions include continuously revising and adjusting related action plans/environmental policies and employing various energy-saving devices, environmental monitoring systems, and environmental management plans to protect the marine ecological environment and maintain the quality of life for neighboring communities. The Keelung Port Branch firmly believes that port development should be a win-win strategy for both economic development and environmental protection. In addition to implementing green port initiatives, the branch actively provides residents with more friendly waterfront spaces, thereby shaping Taipei Port into an internationally acclaimed quality port.

Kao, Chuan-Kai

President of Keelung Branch
Taiwan International Ports Corporations, Ltd.

Taiwan International Ports Corporation Environmental Policy

"Leverage innovation effectively to connect and communicate with global trade flows. Mature into a world-class port management group" is the vision of Taiwan International Ports Corporation (TIPC). TIPC manages and operates commercial ports in Taiwan and is engaged in maritime transport related services, free trade zones, and the development of relevant tourism and recreational projects.

While TIPC pursues business growth, we are well-aware of the importance of our social responsibility, which is to ensure both environmental and economic sustainability. With the goal to establish green and sustainable ports, we will proactively identify environmental risks that may be associated with our activities and manage the risks accordingly to minimize the environmental impacts.

We commit to:

1. Implement and follow through with the Green Port Policy to establish extraordinary world-class ports.
2. Comply with applicable environmental regulations to fulfill corporate environmental responsibility.
3. Execute pollution prevention, monitoring, and control mechanism to enhance environmental quality in and around port areas.
4. Reinforce environmental education to cultivate environmental awareness among employees.
5. Strengthen the communication with local communities, and pursue sustainable development for both the ports and the cities where we are operating.

Date: 2024 /10 /30

Hsien-Yi Lee

Hsien-Yi Lee
Chairman of TIPC

Date: 2024 /10/30

Chin-Jung Wang

Chin-Jung Wang
President of TIPC

Environmental Policies

Port of Keelung

(Including Keelung Port, Taipei Port, Suao Port)

In charge of port operation and developments, Port of Keelung, Taiwan International Ports Corporation (hereinafter referred to as Port of Keelung) recognizes its obligations towards protecting the environment as its corporate social responsibility. Aiming at being an eco-friendly and sustainable port with continuous advancement, we consider environmental protection as a part of port operation and work proactively to prevent the pollution of the environmental impacts.

In order to minimize the potential and actual environmental impacts from port operations, Port of Keelung has identified the scope of its environment protection. With autonomous management, periodic inspection and evaluation, we will keep continuously improving our environment performance.

We commit to:

- Regularly evaluate port **environmental** impacts and any pollution generated from port operation.
- Set environmental objectives to continuously **lower** environment impacts.
- **Comply with all relevant environmental** regulations and aim **at pollution prevention.**
- Provide environmental education to build environm**ental** awareness in all staff to completely implement our environment policy.

The full understanding and mutual consent to this environmental policy have been reached by the relevant parties, including employees, port-related industries of Port of Keelung.

President of Port of Keelung, TIPC Kao Chuan-kai

Date 2024 / 09 / 10

Port of Keelung, Taiwan International Ports Corporation, LTD. No. 1, Chung-Cheng Road, Keelung 20202, Taiwan, R.O.C.

Environmental Objectives

Port of Taipei

To implement the commitments of the environmental policy, the following environmental objectives are set based on the ten major environmental issues from the Port of Taipei.

Maintaining Port Air Quality
Through environmental patrols and monitoring operations in the port area, maintain control over the air quality.

Reducing Fugitive Dust in the Port Area
Use enclosed loading and storage for bulk goods and enhance road washing operations to reduce the dispersion of dust.

Reducing Waste in the Port Area
Properly sort and process garbage in the port area, implement resource recycling and reuse to achieve waste reduction targets.

Reducing Vehicle Pollution in the Port Area
Work with automated gate systems and air quality maintenance area regulations to reduce vehicular exhaust emissions in the port area.

Strengthening Management of Hazardous Goods in the Port Area
Enhance patrols and practice drills in the port area, implement hazardous goods management to maintain safety.

Controlling Ship Waste Oil and Wastewater Discharge
Mandatorily collect ship waste oil and wastewater properly, entrust qualified businesses for disposal, and prevent random discharges that pollute the port area.

Maintaining Water Quality and Ecology in the Port Area
Collect and treat waste and sewage through the sewage system, perform long-term monitoring of water quality in the port area to maintain water quality and ecological health.

Green Port Development
Promote the development of green energy industries in the port area, enhance the installation of green energy facilities and reduce energy loss to minimize climate change impacts.

Improving Ship Air Pollution in the Port Area
Continuously promote ship speed reduction and shore power usage, and advance a green port incentive program to reduce ship exhaust emissions.

Proper Disposal of Ship Waste
Manage waste properly with ship garbage collection certificates, ensuring the principle that garbage does not touch the ground.

The General Manager of the Keelung Port Branch is responsible for the implementation, maintenance, and communication of this environmental goal. They will review the environmental conditions in the port area and adjust action plans accordingly to meet commitments, ensure continuous improvement, and achieve the environmental goals.

President of Port of Keelung, TIPC Kao Chuan-kai

Date 2024 / 09 / 10

Port of Keelung, Taiwan International Ports Corporation, LTD. No. 1, Chung-Cheng Road, Keelung 20202, Taiwan, R.O.C.

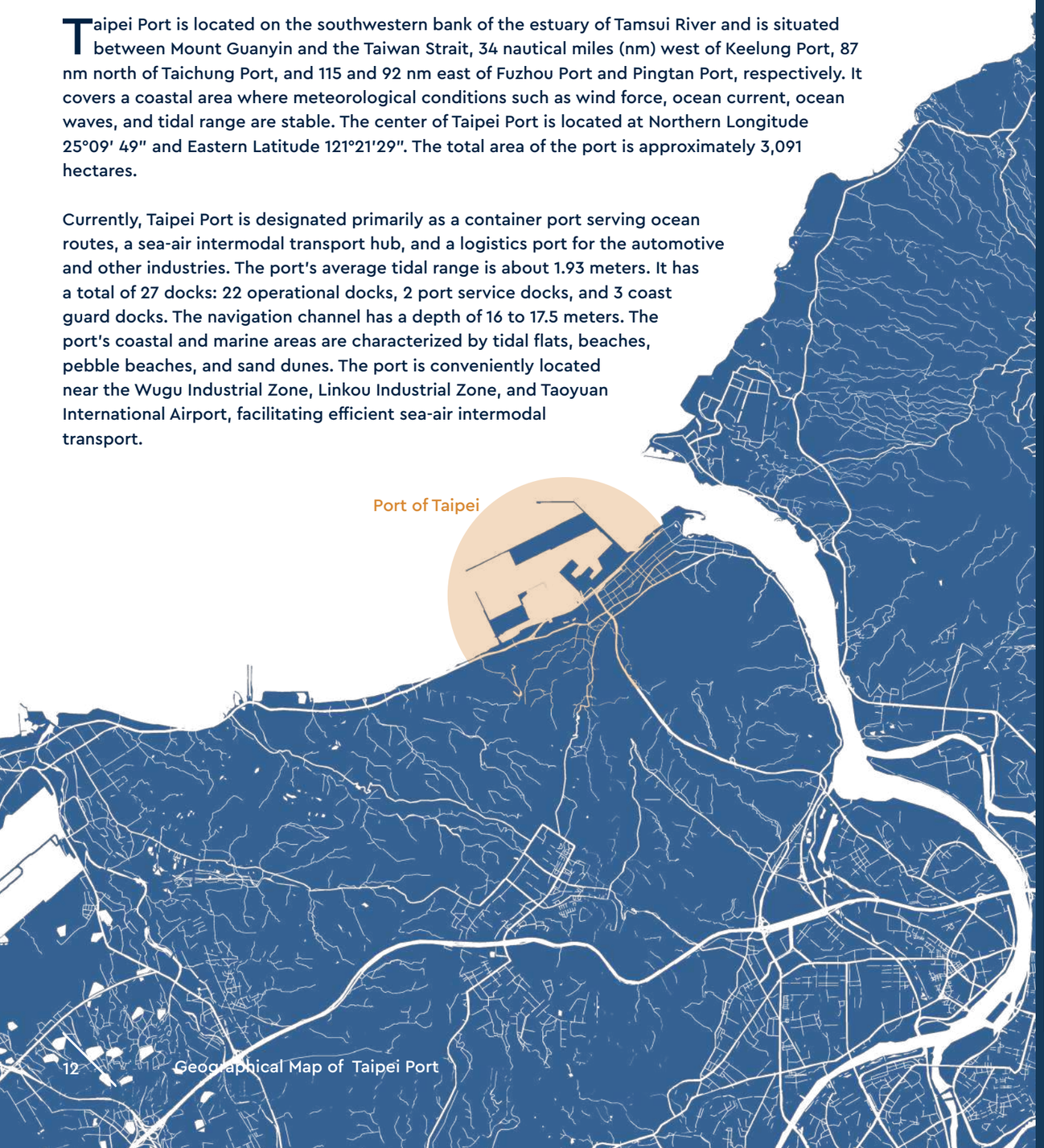
01

Port Profile

1.1 Port Geographic Information

Taipei Port is located on the southwestern bank of the estuary of Tamsui River and is situated between Mount Guanyin and the Taiwan Strait, 34 nautical miles (nm) west of Keelung Port, 87 nm north of Taichung Port, and 115 and 92 nm east of Fuzhou Port and Pingtan Port, respectively. It covers a coastal area where meteorological conditions such as wind force, ocean current, ocean waves, and tidal range are stable. The center of Taipei Port is located at Northern Longitude 25°09′ 49″ and Eastern Latitude 121°21′29″. The total area of the port is approximately 3,091 hectares.

Currently, Taipei Port is designated primarily as a container port serving ocean routes, a sea-air intermodal transport hub, and a logistics port for the automotive and other industries. The port's average tidal range is about 1.93 meters. It has a total of 27 docks: 22 operational docks, 2 port service docks, and 3 coast guard docks. The navigation channel has a depth of 16 to 17.5 meters. The port's coastal and marine areas are characterized by tidal flats, beaches, pebble beaches, and sand dunes. The port is conveniently located near the Wugu Industrial Zone, Linkou Industrial Zone, and Taoyuan International Airport, facilitating efficient sea-air intermodal transport.



Geographical Map of Taipei Port

1.2 Legal Status and Port Operators

To modernize the management of commercial ports in Taiwan. The Taiwan International Ports Corporation, Ltd. Establishment Act was promulgated on November 9, 2011, and the country passed the amendment of Commercial Port Law on December 28, 2011. It was then decided in March 2012 that thegovernment should be separated from the enterprise for management of the ports. Public entities that used to manage the ports, including Kaohsiung Harbor Bureau, Taichung Harbor Bureau, Keelung Harbor Bureau, and Hualien Harbor Bureau, are integrated into one corporation (Taiwan InternationalPorts Corporation, TIPC) to reduce legal and institutional restrictions on commercial port operations, enhance the ability of ports to respond to market changes, and increase their competitiveness. After the Keelung Harbor Bureau underwent institutional changes, the operation of Taipei Port was delegated to the Taipei Port Branch Office under Port of Keelung TIPC, and the port administration and management of Taipei Port was governed by the Taipei Port Branch of the North Taiwan Maritime Affairs Center of the Maritime and Port Bureau (MPB) under the Ministry of Transportation and Communications (MOTC).

Port of Taipei

1.3 Commercial Activities

As of June 2024, Taipei Port has 22 operational docks, including container docks, bulk cargo docks, and liquid bulk cargo docks, primarily focusing on bulk cargo. The main types of goods handled include refined petroleum products, cement, coal, chemicals, and scrap iron. The shipping routes primarily cover long-haul international routes and cross-strait routes. Commercial activities within the port include logistics for automobiles and parts, assembly of wind turbine infrastructure, storage and transportation of finished products and petrochemical products, as well as the loading, discharging, storage, and transportation of bulk cargoes such as coal, gravel, slag, and cement.

2022–2023 Main Cargoes of Taipei

Commercial Activities	
Aggregates (Sand, gravel)	Storage and packaging
Refrigerated cargo	
Cargo Handling	
Dry bulk	Liquid bulk (non-oil)
Ro-Ro Trade cars / Vehicles	General cargo
Wind turbine infrastructure	

1.4 Main Cargoes

In 2022, the primary imports at Taipei Port were mineral products (49.43%) and scrap iron products (17.50%), while the main exports were chemical or related industrial products (42.32%) and wind turbine components and related products (30.85%). In 2023, the primary imports were mineral products (46.55%) and scrap iron products (18.31%), while the main exports were wind turbine components and related products (61.23%) and chemical or related industrial products (19.85%).

Minerals	Cement
Waste Materials (Scrap iron)	Liquid chemicals
Refined petroleum products	Automobiles and related parts
Wind turbines and related parts	

1.5 Business of Port of Taipei

2022–2023 Business of Port of Taipei

Service Category		2022	2023	Difference	%
Incoming and Outgoing Ships	Vessels	8,728	9,916	1,188	13.61%
	Gross (ton)	167,781,204	189,056,543	21,275,339	12.68%
Volume of Cargo Handled	Cargo (R/T)	64,127,259	57,900,447	-6,226,812	-9.71%
	Dry bulk and groceries (R/T)	13,920,127	20,695,886	6,775,759	48.68%
	Pipeline cargo (R/T)	2,697,264	2,614,563	-82,701	-3.07%
	Total (R/T)	80,744,650	81,210,896	466,246	0.58%
Number of Cargo Handled	Incoming cargo (TEU)	883,156	802,240	-80,916	-9.16%
	Outgoing cargo (TEU)	906,842	815,474	-91,368	-10.08%
	Total (TEU)	1,789,998	1,617,714	-172,284	-9.62%
Volume of Imports & Exports	Imports (ton)	10,102,776	13,705,187	3,602,411	35.66%
	Exports (ton)	3,341,477	3,024,359	-317,118	-9.49%
	Domestic (ton)	4,611,686	6,844,193	2,232,507	48.41%
	Total (ton)	18,055,939	23,573,739	5,517,800	30.56%
Incoming and Outgoing Passenger	Total (person-times)	33,524	14,662	-18,862	-56.26%

R/T : Revenue ton
Source: TIPC (https://www.twport.com.tw/chinese/cp.aspx?n=F6319BBC884EB15F)

02

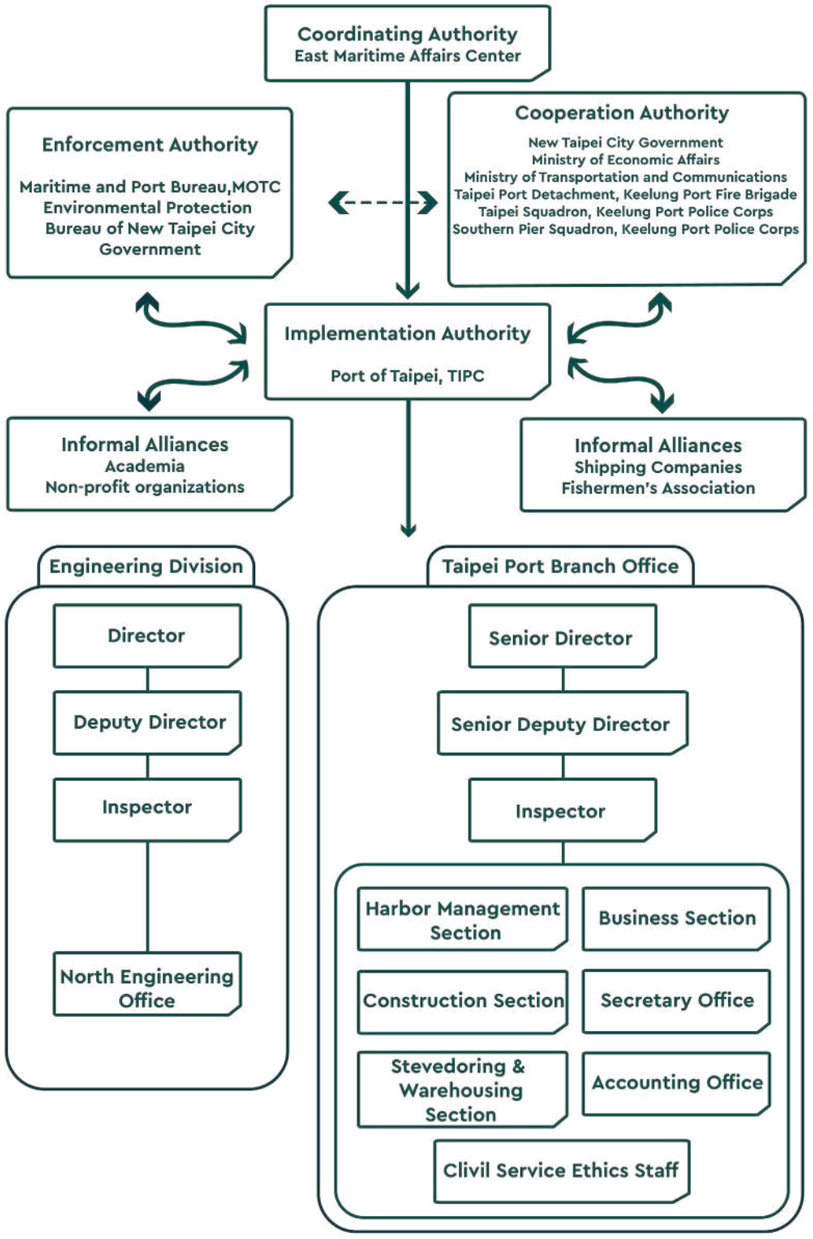
Environmental Management

2.1 Organization Structure

The Taipei Port Branch Office is in charge of managing the environment of the Port of Taipei. However, environmental aspects involve the division of responsibilities among different agencies. In addition to the Taipei Port Branch Office, agencies responsible for environmental aspects include the Taipei Port Division of the Northern Maritime Affairs Center of Maritime and Port Bureau of MOTC, Environmental Protection Department of New Taipei City Government, Ministry of Environment of Executive Yuan, 8th Coastal Patrol Squadron, Northern Branch, Coast Guard Administration, Ocean Affairs Council,Taipei Squadron, Keelung Port Police Corps, National Police Agency, Ministry of the Interior, Southern Pier Squadron, Keelung Port Police Corps, National Police Agency, Ministry of the Interior, Taipei Port Detachment, Keelung Port Fire Brigade, National Fire Agency, Ministry of the Interior,Construction Section, Keelung Port.

The Taipei Port Branch Office is consists of the Business Section, Harbor Management Section, Stevedoring and Warehousing Section, Construction Section, Personnel and Administration Affairs Office, Civil Service Ethics Office, Accounting Office, etc. Descriptions of the sections/offices of Taipei Port are listed in the following table.

Department	Functions of the divisions at Taipei Port
Business Section	Customer service operation and management, investment attraction, and port service and profit development
Harbor Management Section	Berth allocation, in-port ship traffic management, environmental
Stevedoring & Warehousing Section	Stevedoring and weighing, passenger liner service, labor safety, and health, and port service maintenance and management
Construction Section	Port construction planning, design, commission, procurement, and supervision, and commercial port service maintenance
Secretary Office	Branch office human resources and property management, public relations, cashiers, personnel affairs, and employee benefits
Civil Service Ethics staff	Service ethics formulation and promotion, corruption prevention and investigation, service ethics examination and reward, confidential information protection, and security system maintenance
Accounting Office	Budget, income, and expenditure administration, income and expenditure auditing, and annual and monthly report examinations
Engineering Division, North Engineering Office	Project-based (including civil, architectural, and electrical and mechanical) construction budgeting, construction supervision and management, prevention of environmental pollution at construction sites, and supervision of labor safety and health



Authorization of environmental management units

2.2 Relevant International Regulations

The Taipei Port Branch Office follows relevant international specifications, such as International Convention for the Prevention of Pollution From Ships (MARPOL 73 /78), London Dumping Convention, International Convention on the Control of Harmful Anti-fouling Systems on Ships etc.

In addition to the international environmental specifications and conventions, the Taipei Port Branch Office collaborates with local authorities to manage the environment in the Port in compliance with relevant environmental laws and regulations in Taiwan. The following table lists the relevant environmental laws and regulations related to ports in Taiwan.

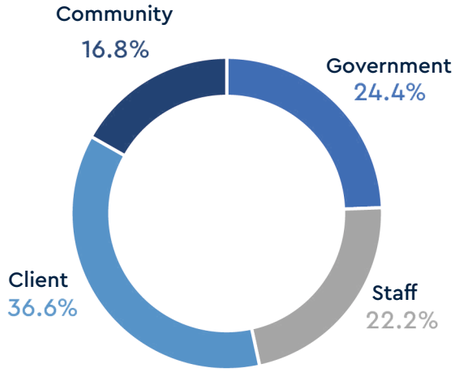
Competent Authority	Laws Title		Central Competent Authority	Local Law Enforcement Agencies
Sectors in the Ministry of transportation and communications	The Commercial Port Law	2023/06/28	Ministry of Transporation and Communications	Taipei Port Division of North Maritime Affairs Center, Maritime and Port Bureau, MOTC
	The Law Of Ships	2018/11/28		
	Shipping Act	2014/01/22		
	Act for the Establishment and Management of Free trade zones	2019/01/16		
Sectors in the Ministry of the Interior	Fire Services Act	2023/06/21	Ministry of the Interior National Police Agency	New Taipei City Fire Bureau
				Keelung Harbor Fire Brigade
Sectors related to agricultural	Wildlife Conservation Act	2013/01/23	Council of Agriculture	New Taipei City Agriculatture Departmant
Sectors related to environmental protection	Marine Pollution Control Act	2023/05/31	Ocean Affairs Council	Ocean Conservation Administration
	Basic Environment Act	2002/12/11	Ministry of Environment	Environmental Protection Bureau, New Taipei City Government
	Air Pollution Control Act	2018/08/01		
	Water Pollution Control Act	2018/06/13		
	Waste Disposal Act	2017/06/14		
	Environmental Impact Assessment Act	2023/05/03		
	Environmental Education Act	2017/11/29		
	Noise Control Act	2021/01/20		
	Indoor Air Quality Management Act	2011/11/23		
	Toxic and Concerned Chemical Substances Control Act	2019/01/16		
	Soil and Groundwater Pollution Remediation Act	2010/02/03		
	Climate Change Response Act	2023/02/15		
	Environmental Agents Control Act	2016/12/07		
	Public Nuisance Dispute Mediation Act	2009/06/17		Public nuisance in New Taipei City Government Dispute Mediation Committee
Intersectoral	Disaster Prevention and Protection Act	2022/06/15	Ministry of Interior	New Taipei City Government

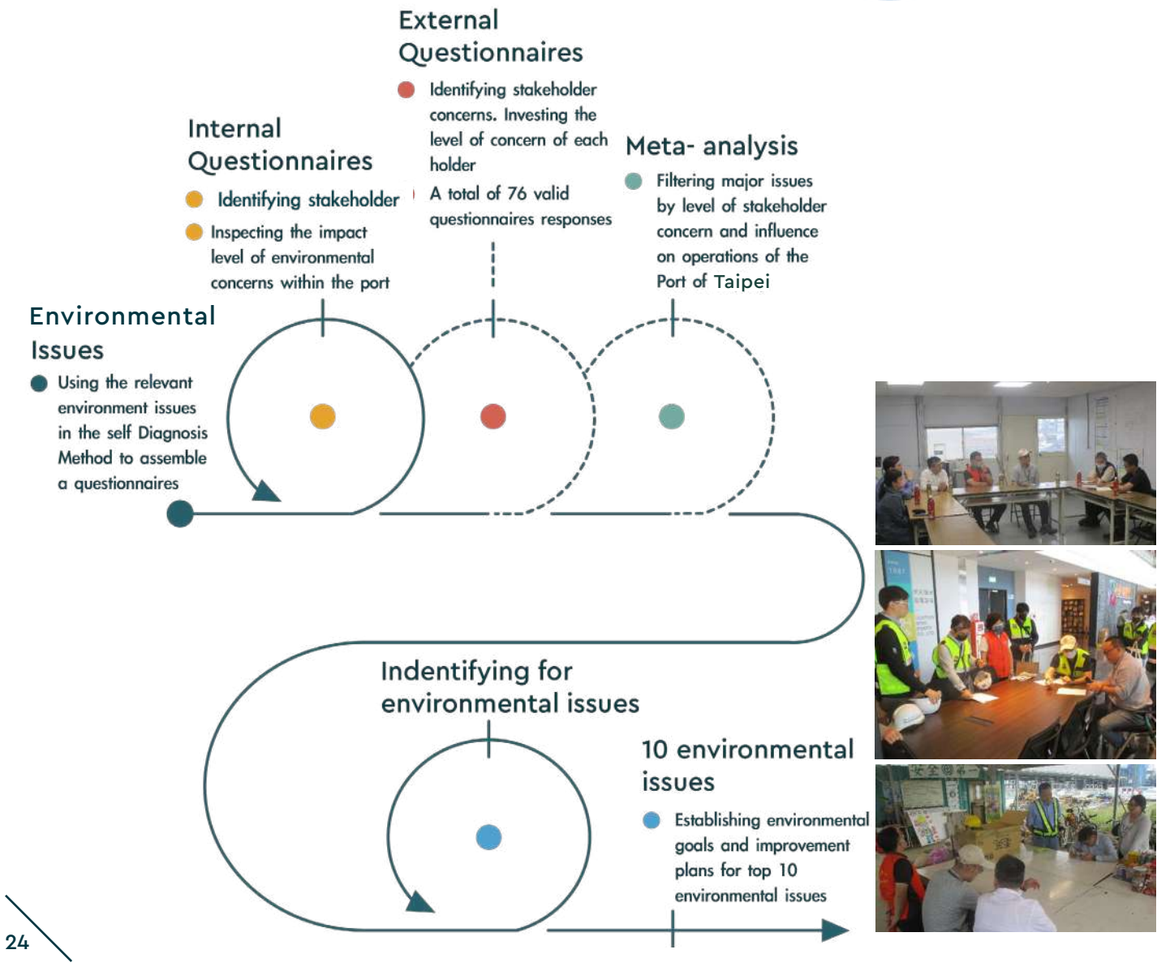
03

State of the Environment

3.1 Analysis of major environmental issues

To fully understand the opinion of each stakeholder and adapt Port of Taipei distributed internal questionnaires as an opinion poll among relevant stakeholders, including employees, the government, clients, and the community. The information obtained was used to evaluate the level of concern each stakeholder held. The data are plotted on the table to the right.





Organizations involved in coping with the environmental issues in the port area of the Port of Anping

3.2 Summarize the Top Ten Environmental Issues

Top 10

1. Air quality

Indicator

- Air quality pass rate ($PM^{2.5}$,PM^{10}, SO^2, NO^2)

2. Dust

Indicator

- Number of Pollution Prevention, Enclosed, and Dust Collection Loading and Discharging Equipment
- The proportion of bulk cargo (gravel + coal + other bulk cargo) handling in the port area using enclosed storage facilities.

3. Waste/ Port and harbor waste

Indicator

- Resource recovery rate in the port area

4. Vehicle Emissions (including cargo loading and discharging)

Indicator

- Number and proportion of lanes with automated door posts in and out of the port area

5. Hazardous Cargo (Handling /storage)

Indicator

- Drills and exercises
- Joint inspections
- Inspections

6. Ship sewage discharg

Indicator

- Number of vessels calls for waste oil and wastewater reception
- Volume of waste oil and wastewater received
- Execution rate of commissioning qualified contractors to clean ship oil and sewage.

7. Port Development (water area)

Indicator

- Marine water quality pass rate (pH, DO, BOD_5, mineral oils, cyanide, phenols)
- Maintaining port waterfront protection area

8. Port development (land area)

Indicator

- Green energy industry development
- Installation and power generation of solar panels
- Greenhouse Gas Inventory (Inventory Boundary Defined by Operational Boundary)

9. Vessel Emissions

Indicator

- Proportion of harbor service vessels using low-polluting fuels in port
- Proportion of harbor service vessel using shore power
- Vessel speed reduction achievement rate
- Vessel speed reduction achievement rate

10. Ship Waste

Indicator

- General waste removed rate in vessels.

3.3 Air Quality and Dust (Issue 1, Issue 2)

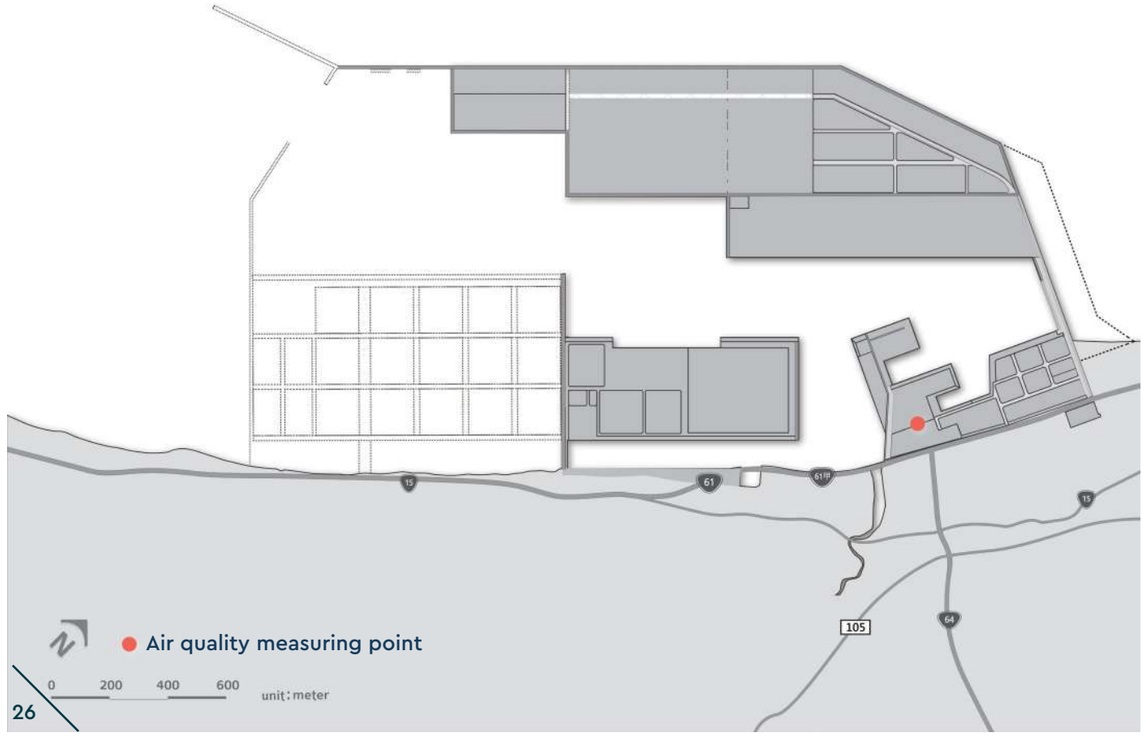
Since 2015, air pollution has been ranked as the top environmental issue at Taipei Port. The main sources of air pollution include dust and suspended particulates generated during cargo handling at docks and construction processes, as well as emissions from fuel combustion by ships and vehicles within the port area. To improve air quality, Taipei Port has formulated improvement strategies and continues to conduct environmental monitoring to track and understand the port's air quality.

The monitoring points are located at the port gates, and the monitored items include suspended particulates ($PM_{2.5}$, PM_{10}), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitric oxide (NO), nitrogen dioxide (NO_2), total hydrocarbons (THC), non-methane hydrocarbons (NMHC), wind speed, and salinity. The monitoring results below indicate that the average air quality monitoring values for each season in 2022 and 2023 at Taipei Port met the regulatory standards.

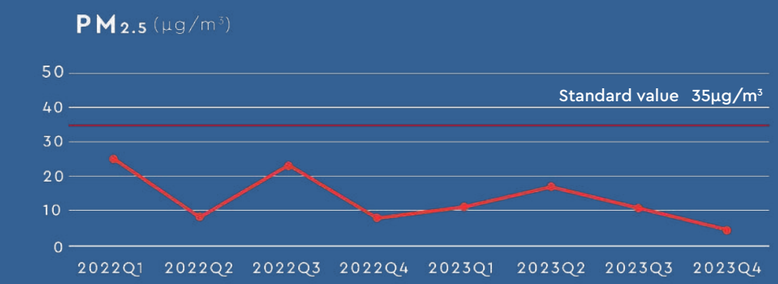
In recent years, the Taipei Port Operations Office has actively maintained air quality within the port area. From 2015 to 2019, "dust" was identified as a major environmental issue second only to "air quality," indicating that stakeholders believe the dust problem at Taipei Port requires ongoing attention.

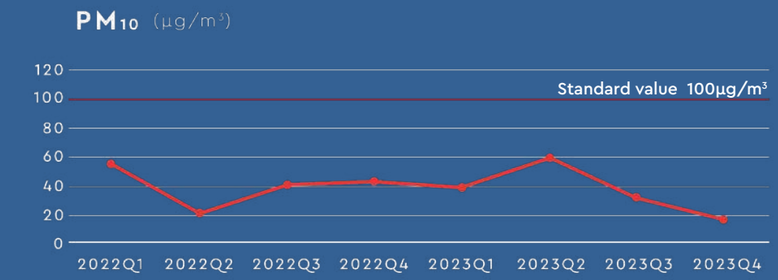
Currently, gravel and bulk cargo handling operations are conducted at the first and second bulk cargo centers. Facilities such as spray systems, enclosed loading and discharging systems, and indoor storage have been installed by contractors to reduce dust emissions from the handling and storage of bulk cargo. Additionally, road cleaning, pulling down dust covers on truck beds by 15 centimeters, and using car wash stations to clean vehicles and equipment are implemented to suppress dust from vehicles driving on port roads.

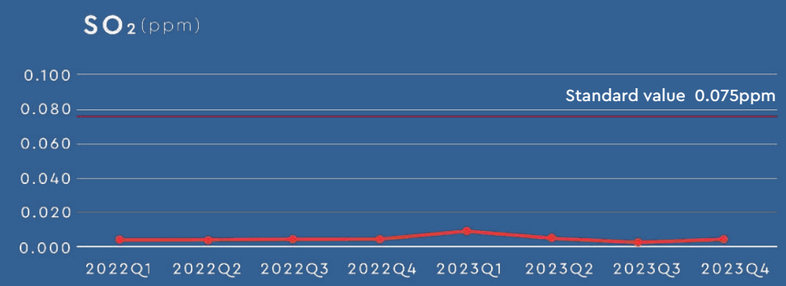
In 2022, Taipei Port installed 12 dust control facilities and 6 enclosed loading systems . In 2023, the port maintained 12 dust control facilities and 6 enclosed loading systems.

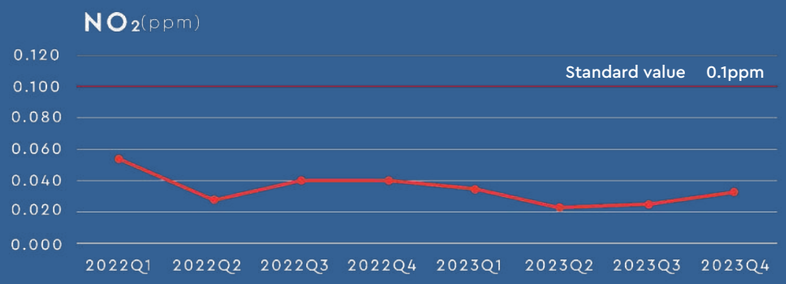


Air quality monitoring measurements









3.4 Reducing Port Land and Ship Waste (Issue 3, Issue 10)

As the port expands, the amount of waste generated has increased, making waste management crucial. The Taipei Port Operations Office enforces strict waste segregation and recycling to improve efficiency. Recent efforts include mandatory waste classification into recyclables, kitchen waste, and general waste, with a focus on recycling plastics and paper.

Waste at Taipei Port is collected by external contractors. Dock tenants, shipping companies, and loading/discharging companies manage their own general and industrial waste (including oil and water) through qualified contractors. In 2022, 210.44 metric tons of general waste were generated, with 102.90 metric tons recycled (48.9% recycling rate). In 2023, 238.76 metric tons of general waste were generated, with 33.70 metric tons recycled (14.1% recycling rate). These measures reduce waste and increase resource recycling and reuse.

Taipei Port requires all vessels, including port service vessels, public vessels, workboats, and international commercial vessels, to rigorously implement waste segregation to enhance recycling and waste management efficiency.

Ship waste is managed by contractors commissioned by the Taipei Port Operations Office and is regularly collected by external cleaning contractors. Dock tenants, shipping companies, and loading/discharging companies manage their own waste through qualified contractors. In 2022 and 2023, the ship waste removal execution rate was 100%, ensuring proper management and minimizing the environmental impact of docked vessels.

Year	2022	2023
Total waste generated (metric tons)	210.44	247.26
General waste removal volume(metric tons)	164.24	212.36
Resource recovery (metric tons)	46.20	34.90
Resource recovery rate (%)	22.0	14.1

Waste Recycling Rate (%)

3.5 Controlling Vehicle and Ship Emissions in the Port Area (Issue 4, Issue 9)

Each year, over 3.5 million vehicles enter and exit Taipei Port. A comparison with nearby air quality monitoring stations indicates a correlation between vehicle traffic at Taipei Port and air pollutant emissions. The pollutant emissions from diesel vehicles of Phases 1 and 2 are 2 to 6 times higher than those from Phases 3, 4, and 5. Therefore, in September 2020, the New Taipei City Government Environmental Protection Bureau designated Taipei Port as the first "Air Quality Maintenance Area" in the country. From the announcement date onward, all Phase 1 and 2 diesel vehicles entering or exiting Taipei Port must have a valid smoke test certificate within the past year. Vehicles without such certification are prohibited from entering the air quality maintenance area. If an unauthorized vehicle is found entering the area, a fine of up to NT$60,000 will be imposed in accordance with the Air Pollution Control Act, and repeated violations will result in continuous fines until compliance is achieved.

In February 2023, the New Taipei City Government expanded the air quality maintenance area along the western coastal area of New Taipei City and implemented mobile pollution source control measures. The controlled areas now include Taiwan Route 61 West Coast Expressway, Taiwan Route 15 Coastal Highway, Bali Incineration Plant, and other locations, with regulations extending to all diesel vehicles and ships, regardless of their phase. In 2023, the measures led to reductions of 31.1 tons/year of PM10, 28.2 tons/year of PM2.5, and 517 tons/year of nitrogen oxides (NOx).

To effectively manage personnel, vehicles, and containers entering and exiting the port area, and to reduce vehicle idling and emissions, Taipei Port uses a sentry system equipped with Optical Character Recognition (OCR) and Radio Frequency Identification (RFID) systems to automatically identify and quickly verify against the database, improving checkpoint efficiency. Furthermore, Taipei Port fully implemented the digitalization of entry passes in 2023, allowing temporary passes to be applied for online. The passes are then generated using a QR code or ID barcode that can be scanned by the automated sentry e-lane system, thereby reducing idling time and emissions. Taipei Port also provides vehicle entry and exit data from the vehicle recognition system to the New Taipei City Environmental Protection Bureau, helping the bureau check whether diesel vehicles have valid smoke test records and thus enforcing vehicle control measures.

Currently, over 70% of the lanes at Taipei Port have been automated or equipped with electronic lanes, reducing vehicle waiting times for inspections and vehicle emissions. In 2022, Taipei Port had 17 lanes open for traffic, of which 12 were automated, with a completion rate of 70.6%. In 2023, all 18 lanes open for traffic were electronic, achieving a 100% implementation rate.

Regarding vessel emissions within the port area, 100% of port service vessels now use low-pollution fuel with a sulfur content of less than 10 ppm. In line with the electrification of port facilities, all public docks in the port area are equipped with shore power systems. Currently, Taipei Port has installed shore power at 11 docks (including public docks, coast guard zones, and bulk cargo docks) to be used while ships are berthed, reducing exhaust emissions from ship engines.

Through the Vessel Speed Reduction (VSR) program, the Port Authority has utilized the Automatic Identification System (AIS) since 2015 to automatically send speed reduction notices to incoming ships, amounting to 8,760 messages annually. In both 2022 and 2023, all vessels entering the port area reduced speed to below 12 knots, achieving a 100% compliance rate. Additionally, a vessel speed reduction monitoring application system was used to collect data, establish a monitoring mechanism, and promote the speed reduction policy.

3.6 Strengthening Hazardous Cargo Management (Issue 5)

According to the "Chemical Spill Response Plan" for the Keelung Port Branch, this plan addresses emergency responses to chemical spill incidents or potential threats in the commercial port area. It coordinates with the Ministry of Transportation and Communications and the Ministry of Environment to mitigate disaster losses and ensure environmental and personal safety. To maintain normal port operations and reduce the risk of chemical disasters posing significant harm to the environment or human life, various preventive and response measures are implemented regularly. Coordination and communication with relevant support units are strengthened to establish a joint response system, effectively utilizing existing manpower and response equipment resources.

The petrochemical and chemical storage and transportation industries pose potential environmental hazards within Taipei Port. In the event of an unexpected incident, leaked materials could harm the ecosystem and nearby residents. Therefore, implementing robust cargo management and enhancing port safety are key environmental priorities for Taipei Port. Each business unit has corresponding emergency response plans and conducts regular disaster drills and joint exercises with the port to improve emergency response capabilities.

For loading and discharging operations, the Taipei Port Operations Office conducts over 20 inspections monthly and performs random checks approximately every three months to ensure the management of hazardous cargo in the port area. Additionally, the Operations Office maintains regular communication with various units regarding emergency responses to cargo spills. Annual joint disaster prevention drills, joint inspections, and various disaster exercises are conducted to enhance the response capabilities of relevant units handling cargo spills.

Project/year	2022	2023
Joint Disaster Prevention Drill	1	1
Joint Audit	5	5


Joint Disaster Prevention Drill


Joint Disaster Prevention Drill


Joint Disaster Prevention Drill


Joint Disaster Prevention Drill

3.7 Enhancing Water Environment Quality and Maintaining Port Waterfront (Issue 6, Issue 7)

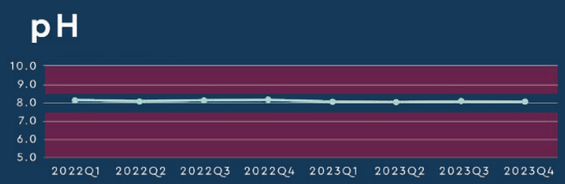
The Taipei Port Operations Office continuously monitors the water quality in the port area, conducting quarterly sampling and analysis to maintain and manage water quality parameters such as pH, DO (Dissolved Oxygen), BOD_5 (Biochemical Oxygen Demand), cyanide, phenols, and mineral oils. In 2022 and 2023, all quarterly samples met the Class B marine environmental quality standards, with a compliance rate of 100%.

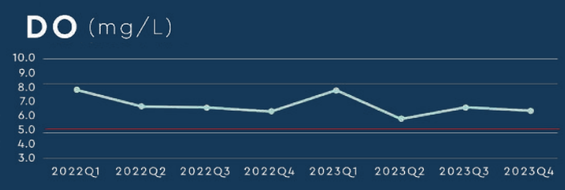
In 2003, Taipei Port became the first commercial port in Taiwan to achieve complete collection and treatment of domestic sewage, utilizing separate systems for rainwater and sewage. Wastewater from the East and North Wharves is collected through the port's sewage system and pumped to the Bali Wastewater Treatment Plant for processing. Additionally, the South Wharf Water Resource Recycling Center, constructed from 2019 and completed in 2021, processes about 1,500 cubic meters per day (CMD) of domestic and industrial wastewater from the South Wharf area, discharging treated water after tertiary treatment.

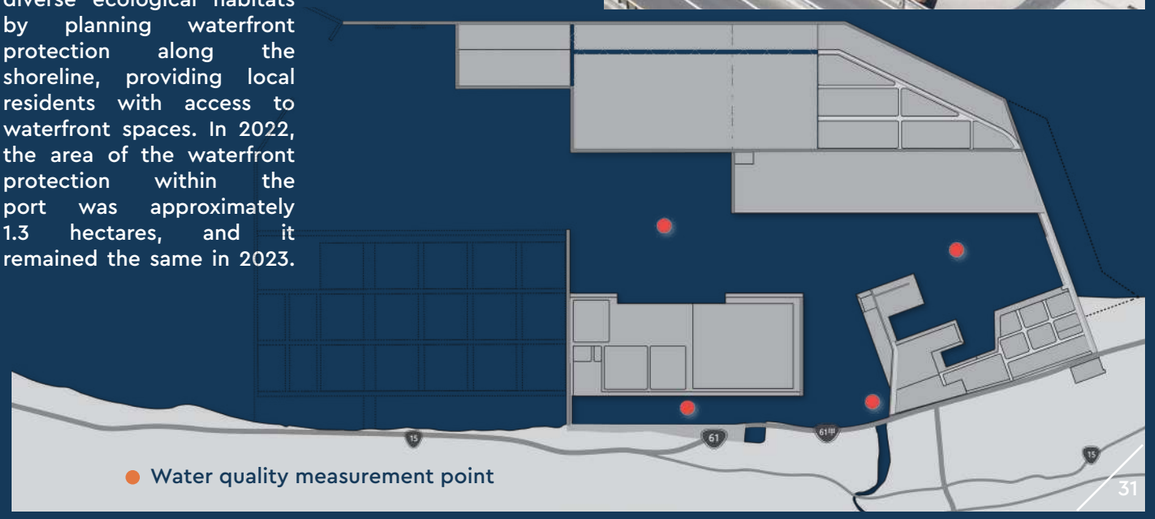
To reduce the water quality impact of ship wastewater discharges, certified contractors collect ship wastewater for proper off-site treatment. In 2022, the port processed wastewater from 99 ships, collecting 1,372.55 metric tons of waste oil and water with a 100% execution rate. In 2023, the port processed wastewater from 98 ships, collecting 1,526.60 metric tons of waste oil and water, also with a 100% execution rate.

During the development of Taipei Port, efforts were made to create a high-quality port environment and diverse ecological habitats by planning waterfront protection along the shoreline, providing local residents with access to waterfront spaces. In 2022, the area of the waterfront protection within the port was approximately 1.3 hectares, and it remained the same in 2023.

By implementing these measures, Taipei Port aims to enhance the water quality in its port area and develop a vibrant, sustainable waterfront that benefits both the environment and the community.







3.8 Optimizing Port Land Planning (Issue 8)

To align with government policies on green energy transition and energy conservation and carbon reduction, Taipei Port has planned an offshore wind energy logistics park and a smart vehicle logistics park in the South Wharf District. In addition to welcoming green energy industries focused on wind power generation, the park will center on the manufacturing and assembly of underwater foundations for offshore wind turbines. Integrated with 5G smart vehicle technology and vehicle-to-infrastructure connectivity, the development aims to establish a "smart logistics and logistics hub." In 2022, green energy industries occupied 50.83 hectares, which expanded to 109.77 hectares in 2023.

To implement energy conservation and carbon reduction, Taipei Port continues to install solar panels on rooftops throughout the port and conducts annual greenhouse gas inventories to monitor carbon emissions. Following ISO 14064-1 standards, the inventory includes all emission sources under the operational control of the Taipei Port Operations Office, covering management activities and office administration. In 2022, solar photovoltaic facilities generated 6.018 million kWh, and the greenhouse gas inventory was completed. In 2023, solar generation reached 13.486 million kWh, with the greenhouse gas inventory scheduled for completion by the end of 2024.

In addition to expanding the port and improving operational efficiency, Taipei Port is committed to enhancing green landscaping within the port area to mitigate the environmental impact of land reclamation projects.

3.9 Environmental Performance Indicators

Ten Significant environmental issues		Index item	Calculation method	Index target	SDGs indicators	Description of calculation	
						2022	2023
1	Air Quality	Air quality pass rate(PM_{10}、$PM_{2.5}$、SO_2、NO_2)	The ratio of the measurements in the air quality monitoring station of the port that meet the "Air Quality Standards"	$PM_{2.5}$ daily average standard: 35 μg/m³ PM_{10} daily average standard: 100 μg/m³ SO_2 hourly average standard: 0.075 ppm NO_2 hourly average standard: 0.1 ppm	Goal 13 Climate change: Take urgent action to combat climate change and its impacts. SDGs 13.3:STRENGTHEN RESILIENCE AND ADAPTIVE CAPACITY TO CLIMATE RELATED DISASTERS Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	Qualified percentage of daily average $PM_{2.5}$: 100% PM_{10}: 100% SO_2 : 100% NO_2: 100%	Qualified percentage of daily average $PM_{2.5}$: 100% PM_{10}: 100% SO_2 : 100% NO_2: 100%
2	Dust	Number of Pollution Prevention, Enclosed, and Dust Collection Loading and Discharging Equip-ment	Number of Pollution Control Facilities In-stalled by Operators Annually	Continually Update or Maintain the Number of Pollution Control Facilities	SDG 11: Sustainable Cities and Communities Goal: Make cities and human settlements inclusive, safe, resilient, and sustainable. SDG 11.6: Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, municipal and other waste management.	• Pollution Control Facilities for Loading and Discharging: 12 sets • Enclosed Loading and Discharging Equipment: 6 units • Dust Collection Loading and Discharging Equipment: 0 units	• Pollution Control Facilities for Loading and Discharging: 12 sets • Enclosed Loading and Discharging Equipment: 6 units • Dust Collection Loading and Discharging Equipment: 0 units
		The proportion of bulk cargo (gravel + coal + other bulk cargo) handling in the port area using enclosed storage facilities.	Annual Enclosed Bulk Cargo Volume ÷ Total Bulk Cargo Volume × 100%	Maintain or Increase the Enclosed Bulk Cargo Handling Volume		• Enclosed Storage Cargo Volume÷ (Gravel+Coal+Other Bulk Cargo) ×100 • 8,761,161÷(5,604,680+1,139,838+3,468,423) ×100%=85.8%	• Enclosed Storage Cargo Volume÷ (Gravel+Coal+Other Bulk Cargo) ×100 • 10,856,139÷ (7,021,485+1,188,970+4,294,222)×100%=86.8%
3	Waste/ Port and harbor waste	Resource recovery rate in the port area	Number of resources recycled ÷ Amount of waste generated × 100%	Annual resource recovery rate more than 10 %	SDG 12: Responsible Consumption and Production Goal: Ensure sustainable consumption and production patterns. SDG 12.5: Substantially reduce waste generation through prevention, reduction, recycling, and reuse.	• Resource recovery volume: 46.2 tons • Total waste removal: 210.4 tons • 46.2 tons ÷ 210.4 tons = 22% • Annual recycling rate of 22%	• Resource recovery volume: 34.9 tons • Total waste removal: 247.3 tons • 34.9 tons ÷ 247.3 tons = 14% • Annual recycling rate of 14%
4	Vehicle Emissions (including cargo loading and discharging)	Number and proportion of lanes with automated door posts in and out of the port area	The number of inbound lanes with automatic door posts and the total number of lanes in the port area Automated door posts in and out of the port area ÷ total lanes × 100% = ratio of automated door posts	Number of lanes with automatic gate posts, ratio 50%	SDG 13: Climate Action Goal: Take urgent action to combat climate change and its impacts. SDG 13.3: Improve education, awareness, and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.	• 17 lanes (including 12 automated gate lanes) • 12 automated gate lanes ÷ 17 lanes = 70.6% • In 2022, a total of 3,491,872 vehicles used the automated gate lanes to enter and exit the port area.	• 18 lanes (including 18 automated lanes) • 18 automated lanes ÷ 18 lanes = 100% • In 2023, a total of 4,375,305 vehicles used the automated lanes to enter and exit the port area • Explanation: In 2023, two additional physical exit lanes and one automated lane were added, making the number of automated lanes more reflective of actual vehicle usage for entering and exiting the port.

3.9 Environmental Performance Indicators

Ten Significant environmental issues		Index item	Calculation method	Index target	SDGs indicators	Description of calculation	
						2022	2023
5	Hazardous Cargo Handling/ Storage	Drills and exercises	Number of drills and exercises	2 drills a year	Goal 8 Decent work and economic-growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. (SDGs 8.8:PROTECT LABOUR RIGHTS AND PROMOTE SAFE WORKING ENVIRONMENTS Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.)	Security drills: 4 times Typhoon drills: 1 time Fire drills: 2 times Joint disaster prevention drills: 1 time	Security drills: 4 times Typhoon drills: 1 time Fire drills: 2 times Joint disaster prevention drills: 1 time
		Joint inspections	Number of joint inspections	2 joint inspection a year		5 joint inspections	5 joint inspections
		Inspections	Number of inspections	Daily inspection		Scheduled inspection once a day and unscheduled inspection once every three mounths.	Scheduled inspection once a day and unscheduled inspection once every three mounths.
6	Ship Sewage Discharg	Number of vessels calls for waste oil and wastewater reception	Number of vessel calls received annually for waste oil and wastewater reception	The execution rate of entrusting qualified contractors to clean ship oil and sewage reaches 100%.	SDG 14: Life Below Water Goal: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. SDG 14.1: Prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution. SDG 14.2: Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, strengthen their resilience, and take action for their restoration to achieve healthy and productive oceans.	Executed 99 times	Executed 98 times
		Volume of waste oil and wastewater received	Annual intake volume of waste oil and sewage accepted			Accepted 1,372.55 metric tons of waste oil and sewage.	Accepted1,526.60 metric tons of waste oil and sewage.
		Execution rate of commissioning qualified contractors to clean ship oil and sewage.	Actual execution rate of accepting ship oil and sewage by qualified contractors.			Execution rate 100%	Execution rate 100%
7	Port Development (water area)	Marine water quality pass rate (pH, DO, BOD_5, mineral oils, cyanide, phenols)	The ratio of port water quality measurements (obtained at the water quality monitoring station in the port) satisfying the Marine Environment Classification and Quality Criteria.	Marine water quality: 100% of the quarterly pH, DO, BOD_5, mineral oils, cyanide, and phenols measurements satisfy the criteria.	SDG 14: Life Below Water Goal: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. SDG 14.1: Prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution. SDG 14.2: Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, strengthen their resilience, and take action for their restoration to achieve healthy and productive oceans.	Class B marine water quality standard: • pH 100% • DO 100% • BOD_5 100% • Mineral oils 100% • Cyanide 100% • Phenols 100%	Class B marine water quality standard: • pH 100% • DO 100% • BOD_5 100% • Mineral oils 100% • Cyanide 100% • Phenols 100%
		Maintaining port waterfront protection area	Area of port waterfront protection area	Maintain area of port waterfront protection area		Total area of waterfront protection area in 2022: 1.3 hectares.	Total area of waterfront protection area in 2023: 1.3 hectares.

3.9 Environmental Performance Indicators

Ten Significant environmental issues		Index item	Calculation method	Index target	SDGs indicators	Description of calculation	
						2022	2023
8	Port development (land area)	Green energy industry development	Area dedicated to green energy industry	Maintain or increase the green energy industry area	SDG 13: Climate Action Goal: Take urgent action to combat climate change and its impacts. SDG 13.3: Improve education, awareness, and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.	Green energy industry area of 50.83 hectares in 2022.	Green energy industry area of 109.77 hectares in 2023.
		Installation and power generation of solar panels	Solar photovoltaic power generation ca-pacity in the port area	The annual electricity generation statistics for solar photovoltaic facilities in the port area:		In 2022, the total electricity generated by solar photovoltaic facilities was 6,017,841 kilowatt-hours.	In 2023, the total electricity generated by solar photovoltaic facilities was 13,486,074 kilo-watt-hours.
		Greenhouse Gas Inventory (Inventory Boundary Defined by Operational Boundary)	Conduct greenhouse gas inventory annually.	Complete the greenhouse gas inventory for the previous year in accordance with ISO 14061-1 standards.		The greenhouse gas inventory for 2022 has been completed.	The greenhouse gas inventory for 2023 is expected to be completed by the end of 2024.
9	Vessel Emissions	Proportion of harbor service vessels using low-polluting fuels in port	×100% Number of har-bor service vessel using low-polluting fuels in port operations ÷ Number of vessels in total port oper-ations × 100%	Proportion of port service vessels using low-pollution fuels reached 100%.	Goal 13 Climate change: Take urgent action to combat climate change and its impacts. SDGs 13.3:STRENGTHEN RESILIENCE AND ADAPTIVE CAPACITY TO CLIMATE RELATED DISASTERS Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	1÷1×100%=100% 1 harbor service vessel, 1 harbor service vessel using low-pollution fuel.	1÷1×100%=100% 1 harbor service vessel, 1 harbor service vessel using low-pollution fuel..
		Proportion of har-bor service vessel using shore power	Number of harbor ser-vice vessel using shore power (vessels) ÷ Total number of harbor ser-vice vessel (vessels) × 100%	100%The proportion of harbor service vessel using shore power		1÷1×100%=100% 1 vessel for harbor service, 1 vessel for using shore power at the berth.	1÷1×100%=100% 1 vessel for harbor service, 1 vessel for using shore power at the berth.
		Vessel speed reduction achievement rate	Monitor the speed reduction of vessels navigating within the port area using the AIS-based Vessel Speed Reduction Inspection System	100% speed reduction compliance rate within the Taipei Port area.		A total of 4,371 vessels entered the port, achieving a 100% compliance rate for speed reduction within the port area.	A total of 4,955 vessels entered the port, achieving a 100% compliance rate for speed reduction within the port area.
		Vessel speed reduc-tion promotion	Number of speed reduc-tion announcements for incoming vessels	Maintain at least 8,000 times per year		Set the system to automatically send out speed reduction announcements for incoming vessels every hour, for a total of 8,760 times in 2022.	Set the system to automatically send out speed reduction announcements for incoming vessels every hour, for a total of 8,760 times in 2023.
10	Vessels waste	General waste removed rate in vessels.	Number of cleanups conducted by relevant vessels÷ number of vessels that collected waster × 100%	100% ratio of waste removed from vessels	Goal 12 Responsible consumption and production: Ensure sustainable consumption and production patterns. (SDGs12.5:SUBSTANTIALLY REDUCE WASTE GENERATION By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.)	Ratio of Waste removed from vessels: 100%.	Ratio of Waste removed from vessels: 100%.

04

Emergency Response

4.1 Port Emergency Notification and Drill

To maintain a safe operational environment at Taipei Port, the Taipei Port Operations Office assigns personnel for daily environmental inspections. Upon discovering any suspected pollution, immediate corrective actions are taken, including guidance, emergency response, or reporting to enforcement authorities for penalties. The main accidents in 2022 and 2023 were primarily falls at work sites, as detailed in the following table.

Accident and Pollution Response

For pollution and disaster incidents within the port, the Taipei Port Operations Office, New Taipei City Environmental Protection Bureau, and the Ministry of Transportation and Communications' Northern Navigation Center, Taipei Harbor Section, have established reporting channels for relevant units. The Taipei Port Operations Office has also set up emergency response procedures for major port disasters, such as ship accidents, fires, explosions, and significant incidents, to handle crises effectively.

Bulk Cargo Operations Management

Taipei Port enforces strict control over bulk cargo handling operations to enhance cargo management, prevent overloading or leakage, and strengthen communication and coordination mechanisms for emergency response among relevant units. In November 2020, the Taipei Port Operations Office established an online port inspection recording system, where all daily environmental inspection details are documented.

Environmental Inspection Summary

- 2022: A total of 365 environmental inspections were conducted.
- 2023: A total of 365 environmental inspections were conducted.
-

By implementing these measures, Taipei Port ensures a safe and environmentally compliant operational area, improving overall safety and response capabilities.

Facility Security Drill

Year	Name of the Exercises	Dates
2022	Facility Security Exercises	March, June, September, December
	Flood Prevention Drill in Taipei Port	May
	Fire Exercises and Training	June and December
2023	Facility Security Exercises	March, June, September, December
	Flood Prevention Drill in Taipei Port	April
	Fire Exercises and Training	June

2022–2023 Port Accident Statistics Table

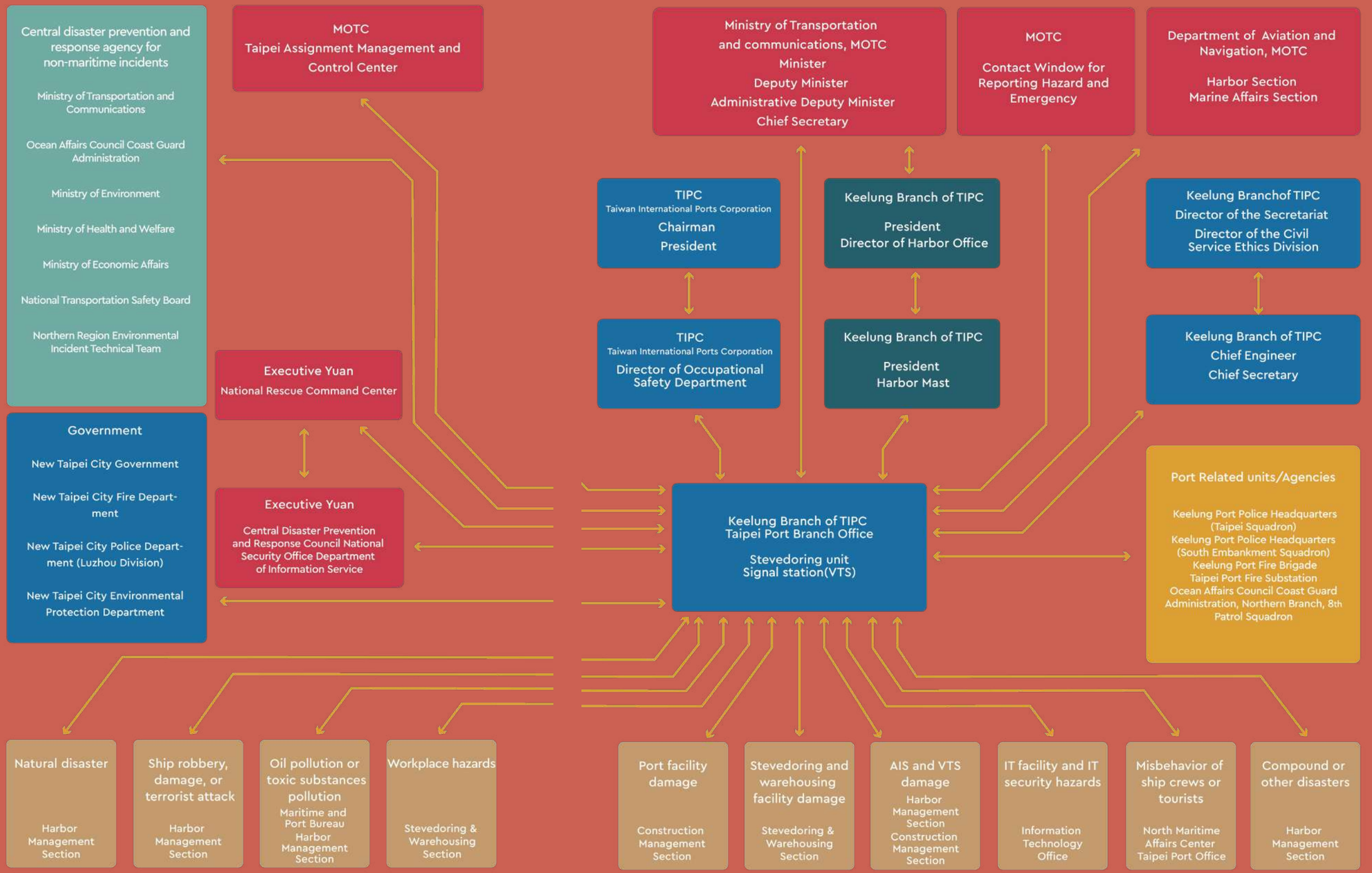
Accident unit (company name)	Date	Location	Type of accident	Cause overview
Taipei Port Container Terminal Corp.	2022/7/29	North Wharf Area	Fall	A driver at the container terminal fell from a trailer truck, resulting in injuries.
Taipei Port Container Terminal Corp.	2022/9/12	North Wharf Area	Impact	An inspection station staff member at the Taipei Port Container Terminal was struck on the head by a container door due to strong winds, causing a laceration.
Tung Pei Construction Co., Ltd.	2023/5/14	North Breakwater	Fall	A crane operator, while standing on an excavator platform to assist with crane operations, accidentally fell to the ground, resulting in a head laceration.
Construction Co., Ltd.	2023/5/2	East Wharf 15	Drowning	An excavator operator, working on a dredging job aboard a workboat, fell into the sea along with the machinery, presumably due to mishandling.
Taipei Port Container Terminal Corp.	2023/8/21	North Wharf 4	Fall	An individual walking on a ship's gangway lost footing and fell, injuring their head.
Taipei Port Commerce & Trade Co., Ltd.	2023/11/13	Second Bulk Cargo Center	Fall	An individual suffered from a heart condition, causing weakness and a subsequent fall.

2022 Ship Arson Drill

2023 Explosive Firefighting Drill

Typhoon and Flood Prevention

Port of Taipei Emergency Response



05

Innovation and Collaboration

5.1 Reclamation of Taipei Port Logistics and Warehousing Area (Using Recycled Converter Slag Aggregate)

- Strategies：Exemplifying, Enabling
- Environmental Issue：Port Development (Land-Based), Air Quality, Water Quality, Dust Control

Concern/Motivation

Converter slag, a type of recycled aggregate, plays a crucial role in the government's efforts to promote a circular economy. The specific approaches include increasing the use of recycled aggregates in public works, ensuring the quality of these products so that project managers are confident and mandated to use them, thus accelerating the promotion of "circular industrialization" nationwide to achieve sustainable resource utilization.

Converter slag is a byproduct of integrated steel mills and is widely used internationally in various engineering fields such as road pavement, ground improvement, construction access roads, and land reclamation. However, there has been no large-scale application in recent years domestically. To align with government policies on the circular economy, Taipei Port is promoting the use of recycled aggregates in maritime engineering projects.

Solutions

In alignment with government policies and relevant operational regulations, Taipei Port designated the waters of the Phase II embankment in the logistics and warehousing area (future windbreak forest land) as a site for on-site testing of converter slag filling. According to the research outcomes of the test plan, converter slag can be used as reclamation material without impacting the marine environment or surrounding structures.

Following the environmental impact assessment (EIA) review, which was approved by the Ministry of Environment's EIA committee, the use of converter slag was expanded to portions of the windbreak forest areas in Phases II, III, and IV of the logistics and warehousing area. The slag, produced by the China Steel Corporation, is used as reclamation material, increasing the use of recycled aggregates. This practice meets the requirements of the circular economy policy, achieving the benefits of sustainable resource reuse.

Implementation/Timeline

Construction began in November 2020; the entire project (Phases 2, 3, and 4) is scheduled for completion in September 2029.

Alignment with the United Nations' 17 Sustainable Development Goals (SDGs):

SDG 12: Responsible Consumption and Production
Promote green economy and ensure sustainable consumption and production patterns.
SDG 13: Climate Action
Implement comprehensive mitigation and adaptation actions to address climate change and its impacts.
SDG 15: Life on Land
Conserve and sustainably use terrestrial ecosystems, ensure biodiversity, and prevent land degradation.

Effect/Benefit

- Using recycled aggregates for land reclamation enhances land creation efficiency and increases the utilization of land resources. This approach reduces the extraction of natural resources, achieving carbon reduction benefits. Additionally, it lowers the associated construction costs and minimizes environmental impact.
- By incorporating recycled materials like converter slag into land reclamation projects, the initiative supports sustainable development, conserves natural resources, and promotes a circular economy.

Participating Units

- Taipei Port Branch Office
- China Steel Corporation

Stakeholders

- Keelung Port Branch
- China Steel Corporation
- New Taipei City Environmental Protection Bureau
- Ministry of Environment
- Port Loading and Discharging Operators
- Port Area Tenants
- Bali Residents

Contact

Port of Taipei

Contact Person: Feng, Li-Ren
Department: Northern Engineering Office, Construction Section
Title: Manager
Contact Number: 02-2619-6081
E-mail: fengline@twport.com.tw

China Steel Corporation

Contact Person: Chu, Tsai-Ying
Department: China Steel Corporation
Title: Engineer
Contact Number: 07-8021111#3831
E-mail: 185736@mail.csc.com.tw

5.2 South Wharf Smart Vehicle Industrial Park at Taipei Port

- Strategies：Engaging, Enabling
- Environmental Issue：Conservation area, development of Port (water related)

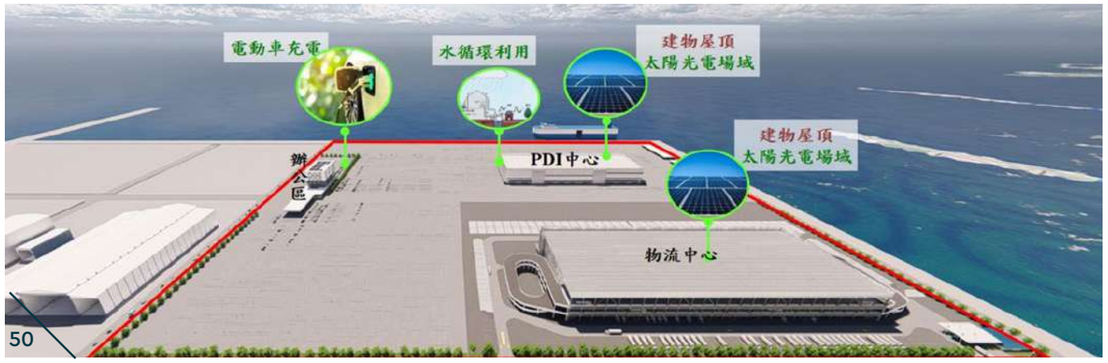
Concern/Motivation

As global warming continues, natural disasters caused by extreme weather events are becoming more frequent, leading to severe ecosystem damage. Data from the U.S. Energy Information Administration indicates that approximately 40% of global carbon emissions are related to buildings, and 30% are from transportation. Addressing these environmental and ecological issues, "smart logistics parks" that integrate intelligent technologies have become a key focus for global industrial development.

To align with the global trend of green port development, respond to climate change, and adapt to environmental shifts, Taipei Port is supporting New Taipei City's 2030 plan to develop Bali as a net-zero demonstration area. Through the development of port land, the port aims to introduce advanced technologies such as smart logistics, green energy solutions, and smart vehicles, striving to establish itself as a "Regional Smart Logistics Hub."

Solutions

The Taipei Port Operations Office, in collaboration with Dongli Logistics Co., Ltd., is supporting New Taipei City's 2030 initiative to make Bali a net-zero demonstration zone, aligning with the national strategy to develop Taipei Port as a "Regional Smart Logistics Hub." They aim to further integrate and upgrade the existing value-added automotive logistics services and expand smart logistics operations. With an application for land in the C-fill area of the South Wharf District, the goal is to create a "smart logistics and logistics hub" by combining automotive logistics with infrastructure to develop a smart logistics and operations port area.
Dongli Logistics Co., Ltd. is committed to environmental sustainability. From design to construction, and through ongoing operational maintenance, the park's facilities are geared toward energy and water conservation. Energy-saving measures include high-efficiency LED lighting and variable-frequency equipment, while water-saving measures feature certified water-efficient appliances and rainwater collection tanks, along with planned greenery around the site for enhanced aesthetics. Additionally, unused rooftop spaces are equipped with solar photovoltaic power systems, with plans for wind power facilities and hydrogen fueling stations in suitable areas. By leveraging clean, pollution-free energy sources such as solar, wind, and hydrogen, Dongli Logistics is committed to achieving energy savings and carbon reduction, continuously advancing toward a carbon-neutral and sustainable logistics park.



Implementation/Timeline

- Investment Start Date: 2021
- Lease Term: 25 years
- Construction Start Declaration: January 2024
- Expected Operational Date: 2026

Investment Amount

Investment Amount: NT$6,000,000 thousand

Alignment with the United Nations' 17 Sustainable Development Goals (SDGs):

SDG 7: Affordable and Clean Energy
Ensure access to affordable, reliable, sustainable, and modern energy for all.
SDG 9: Industry, Innovation, and Infrastructure
Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
SDG 13: Climate Action
Take urgent action to combat climate change and its impacts by implementing comprehensive mitigation and adaptation strategies.

Effect/Benefit

- **Extensive Green Areas Surrounding the Site:** Maintain water retention functions around the site.
- **Energy and Water Conservation:** Use energy-saving and water-efficient equipment to minimize energy usage on site.
- **Solar Panel Power Generation:** Estimated annual power generation of 8.455 million kilowatt-hours, with an estimated annual carbon reduction of approximately 3,585 metric tons of CO_2e.
- **Plan to establish wind power generation facilities and a hydrogen fueling station.**

Participating Units

- Taipei Port Branch Office
- Dongli Logistics co., LTD.

Stakeholders

- Taipei Port Branch Office
- Dongli Logistics co., LTD.
- New Taipei City Environmental Protection Bureau
- Ministry of Environment

Contact
Port of Taipei
Contact Person: Chen, Po-Jung
Company: Tonglit Logistics Co., Ltd.
Phone: 886-2-80069009
E-mail: emilychen@tonglit.com.tw

5.3 Involvement and Collaboration

The Taipei Port Branch Office actively collaborates with both domestic and international organizations, including governmental agencies, academics, and industries.

Association of Pacific Ports(APP)

The APP aims to gather port authorities along the Pacific coast to discuss Pacific marine transportation development, seeking solutions for problems.

The International Association of Ports and Harbors(IAPH)

The IAPH is an NGO with tremendous influence on global port authorities, IAPH also provides the advisory to the main bodies of the UN (eg. ECOSOC, IMO,UNCTAD, UNEP, ILO, WCO). The IAPH holds biennial conferences alternately in America, Asian Pacific, and European and African regions.

Xiamen Port Holding Group Co.

To cultivate human resources, exchange visits and academic exchange activities are irregularly organized for employees between Xiamen and Taipei Port, allowing them to share successful working experiences and advanced port management concepts, thus enhancing both sides' container, transshipment, and logistics services.

Pingtan Comprehensive Pilot Zone Administration Committee in Fujian

After two years of negotiation, a direct ship line was established between Taipei Port and Fujian Province's Pingtan Island on October 9, 2013, leading to a mutual partnership.

North Maritime Affairs Center, Maritime and Port Bureau, MOTC

Taipei Port Division of North Maritime Affairs Center, Maritime and Port Bureau, MOTC is in charge of Port safety, disaster rescue, pollution prevention services, responsible for decree execution, evidence collection, conducts joint spot check, and pollution prevention drills.

Institute of Transportation, MOTC

The Institute of Transportation at the MOTC has served as a think tank that assists the ministry with formulating policies, integrating and coordinating transportation-related decisions, and establishing a communication network for industrial, governmental, and academic transportation organizations

Ministry of Environment

The Ministry of Environment, Executive Yuan collaborates with the US EPA in accordance with the "Agreement between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States for Technical Cooperation in the Field of Environmental Protection (1993)," and this partnership has led to the development of a series of strategies relating to port environmental issues.

New Taipei City Environmental Protection Department

Taipei Port works closely with the New Taipei City Environmental Protection Department. Conducts joint spot check and pollution prevention drills.

Bali District Hall

Port of Taipei and the Bali District share the responsibility to maintain the port surrounding environment.

Century Wind Power Co. Ltd

Since 2019, Century Iron Group has leased 21 hectares of land in Taipei Port to build an underwater basic manufacturing plant. The company not only provides related facilities of offshore wind power (manufacturing, assembling, and storing), but engages in wind turbine import and export. In the future, the 1,000-unit marineland electromechanical project will further promote the development of related industries and promote local employment opportunities

Chia Hsin Int'l Corp.

In 2006, Chia Hsin rented Wharf No. 13–15 of the east bank and rented Wharf No. 16of the east bank to build and operate facilities. In 2009, Chia Hsin built an enclosed warehouse at Bulk and General Cargo Terminal No. 1. Thus, Chia Hsin is an excellent example of an environmental Chia Hsin Int'l Corp. manager for Taipei Port

Goldsun Building Materials Co., Ltd.

In 2009, the Goldsun Building Materials Co., Ltd. obtained the 50-year management right of the second bulk general cargo storage and transportation center in Taipei Port. The total investment in development and construction is 4.5 billion yuan. The operation of the enterprise includes cargohandling , warehousing, and shipping

Oriental Freight Services

Oriental Logistics Group, a subsidiary of Chaojie Group, was opened on March 6, 2020. The center is located in the Taipei Free Trade Port Zone, with a total storage area of 9,520 square meters and 6,800 shelf spaces, which can store bonded warehouses. Goods and domestic goods, and meet the storage needs of bonded and non-bonded goods at the same time.

Tonglit Logistics Corp.

In October 2005, Tonglit Logistics Co., Ltd. was officially approved as a free trade enterprise in Taipei. Tonglit's main business is in automobile and automobile parts trading, featuring the integration of shipping and packaging services.

Taipei Port Container Terminal Corp.

Taipei Port Container Terminal Corp. (TPTC) is the first privately funded container terminal build-operate-transfer project in Taipei Port. Established on March 9, 2009, TPTC features highly efficient stevedoring servicesand automated entry procedures through its highlyadvanced wharves and has aimed to increase port operation effectiveness and achieve energy conservation and carbon reduction.

Formosa Petrochemical Corporation | Chun Pin Enterprise Co., Ltd. | BOM AMI ENTERPRISE Co.,Ltd.

There are 47 chemical tanks in the Taipei Port, which are managed by Formosa Petrochemical Corporation, CPE, and BOA. These facilities mainly store gasoline, diesel, any organic chemicals such as toluene, vinyl chloride, and p-xylene. To avoid large scale chemical accidents, Port of Taipei mostly stores non-explosive chemicals. Furthermore, the pipelines are mostly buried underground along the Binhai provincial highway, which is sparsely populated areas.

China Steel Corp.

Since 2018, China Steel Corporation (CSC) has partnered with Taiwan International Ports Corporation (TIPC) to prepare for using converter slag in the Taipei Port logistics area. In 2020, the Environmental Protection Administration approved the use of converter slag for land reclamation, and by November, official filling operations began. This set a milestone for using recycled materials in Taiwan's port projects. CSC continues to manage the quality and use of converter slag through a three-tier system and works with TIPC to promote recycled materials in port projects, supporting the circular economy policy.

Fu-Ming Transport Corp.

Fu-min Transportation Co., Ltd., a member of the Far Eastern Group, has leased 4 hectares of land in the logistics and storage area of Taipei Port, with a total investment of approximately NT$300 million. The investment includes the construction of a logistics warehouse, related storage facilities, and a container repair and cleaning yard. The company primarily focuses on sea freight operations such as a "cargo storage and transfer center," "container repair and cleaning," and related free trade port zone services. Currently, construction is underway, with operations expected to begin by the end of 2024.

Innotech Logistics Co., Ltd.

Innotech Logistics Co., Ltd., part of the Chien Hsin Group, secured rights in 2021 and 2022 to invest and lease land for Phase 1 Warehouses 1–3 and 1–2 in Taipei Port's logistics area. With a total investment of NT$4.3 billion, the company plans to build automated warehouses. Services include warehousing, road and container transport, and customs clearance. Innotech Logistics will leverage Taipei Port's location to integrate commerce, finance, information, and logistics, offering a one-stop service platform with added value.

National Taiwan Ocean Univ. | National Sun Yet-Sen Univ | National Cheng Kung Univ.

To enhance international competitiveness and improve shipping service quality, Taiwan International Ports Corporation (TIPC) has signed MOUs with three national universities in Taiwan since 2012. Both sides will collaborate on academic exchanges, research, industry-academia partnerships, training, student internships, and port management lectures. This partnership enhances teaching quality and allows the universities to act as think tanks for TIPC, playing an active role in port management, creating a win-win outcome.

06

Training and Communication

6.1 Employee Education

To raise employee awareness of environmental protection and enhance workplace safety, thereby promoting lifelong learning, the Keelung Port Branch regularly conducts environmental education and health and safety training. According to the "Environmental Education Act" enacted in 2011, relevant units, including public enterprises, must establish an environmental education plan each year, requiring every employee to participate in at least four hours of environmental education.

In 2022 and 2023, the Taipei Port Operations Office organized approximately five sessions of environmental education and fire safety training courses for both internal and external personnel. These sessions are aimed at ensuring that all staff members are knowledgeable about environmental protection practices and are well-prepared to handle safety issues in their work environment.

Taipei Port 2022–2023 Occupational Safetyand Health Training

Year	Course Title	Course Dates
2022	Fire Safety Education and Training	6/30, 12/24
	Environmental Education Course – Digital Environmental Education Film Appreciation	12/14–12/22
2023	Occupational Safety and Health and Operational Health Employee Training Course	12/12
	Environmental Education Course – Digital Environmental Education Film Appreciation	12/8–12/20
	Fire Safety Education and Training	6/5, 12/22

Occupational Safety and Health and Operational Health Employee Training Course, 2023

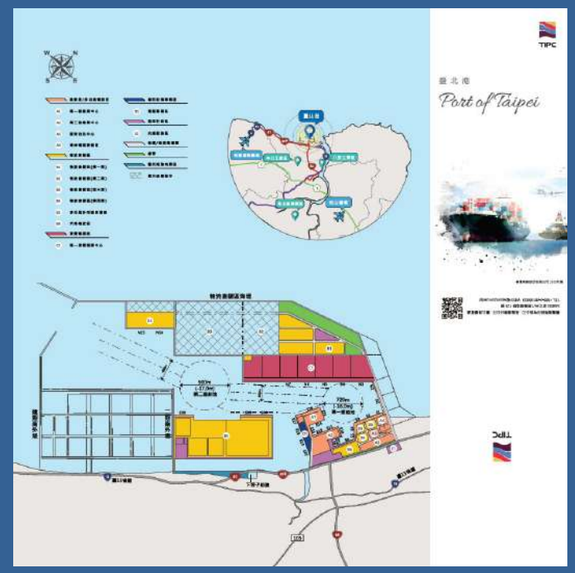
Fire Safety Lecture, 2023

Fire Safety Training, 2022

Fire Safety Training, 2023

6.2 Communication and Publication

Brochure for Taipei Port



Academic

To enable the Port of Taipei to communicate with the industry and the outside world, the Port of Taipei has held many events, seminars and workshops. Besides, the information on the Port of Taipei is available to the general public, businesses, academic institutions.

Year	Unit	Date
2022	National Defense University Visit	10/14
	Normal University EMBA Operations and Supply Chain Management Course	10/19
	Department of Civil Engineering, National Taiwan University Visit	11/16
2023	National Defense University	1/12
	Delegation of Legislative Leaders from the State of Utah, USA	3/30
	Tourism Association	4/18
	Taipei University of Marine Technology	5/5
	Department of Business Administration, National Taipei University of Business	5/12
	Kinmen County Harbor Bureau	6/8
	Vietnam Delegation	8/30
	Construction Committee of the Taoyuan City Council	9/4
	Netherlands Trade and Investment Office	9/18
	Chinese Institute of Electrical Engineering (CIEE)	10/17
	Political Warfare Center	10/26
	Taichung Industrial Development and Investment Promotion Committee	11/23
	Fukuoka, Japan	12/7
	China Electrotechnical Society	12/21
	Department of Transportation and Logistics Management, National Yang Ming Chiao Tung University	12/29

Republic of Nauru Visit, 2022

Canadian Member of Parliament Visit, 2022

Netherlands Trade and Investment Office Visit, 2023

Fukuoka, Japan Visit, 2023

Community Engagement

In its pursuit of operational growth, the Taipei Port Operations Office remains committed to environmental sustainability and corporate social responsibility by organizing several community engagement and public welfare activities.

2022 Community Activities:
Beach Cleanup: Organized one beach cleanup activity to help maintain the cleanliness and beauty of the coastal environment.
Blood Donation Drives: Conducted two blood donation drives to support local healthcare needs.

2023 Community Activities:
Beach Cleanup: Organized one beach cleanup activity, continuing efforts to preserve the coastal environment.

Blood Donation Drives: Conducted two blood donation drives, contributing to community health and emergency blood supply needs.
These activities reflect Taipei Port's dedication to fostering good relationships with the local community and contributing to social welfare while balancing operational growth with sustainable development.

Beach Cleanup, 2022

Blood Donation Drives, 2022

Beach Cleanup, 2023

Blood Donation Drives, 2023

07

Green Accounting

7.1 Environmental Investment and Cost

To enhance employees' environmental awareness, maintain and improve the port environment, and increase emergency response capabilities, the Taipei Port Operations Office has invested significantly in addressing environmental issues. The cost items can be categorized into five main areas, as detailed below:

To enhance employees' environmental awareness, maintain and improve the port environment, and increase emergency response capabilities, the Taipei Port Operations Office has invested significantly in addressing environmental issues. The cost items can be categorized into five main areas, as detailed below:

The costs invested by the Taipei Port Operations Office in environmental issues for the years 2022 and 2023 were NTD 490,868 thousand and NTD 394,145 thousand, respectively.

Costs related to Environmental Issues at Taipei (Unit: NTD thousand)

Items of Expenses	2022	2023
Employees(Environmental Education)	20,227	20,762
Environmental Maintenance & Management	40,753	41,181
Environmental Monitoring	42,121	42,198
Emergency Response	204	19
Communication & Publication	324,916	227,368
Total	490,868	394,145

7.2 Environmental Assets

To develop Taipei Port into a container port focusing on ocean-going routes, a sea-air intermodal port, a logistics hub for automobiles and other industries, and an environmentally friendly green port, the Keelung Port Branch has promoted a series of port development projects. These projects, which include ongoing and emerging plans as well as general construction and equipment projects, involve environmental issues such as land reclamation and embankment engineering. The fixed asset investments by the Taipei Port Operations Office in environmental issues amounted to NTD 2,271,532 thousand in 2022 and NTD 3,225,546 thousand in 2023.

Assets invested in Environmental Issues (Unit: NTD thousand)

Year	Project	Amount
2022	South Wharf Area B Fill Area Embankment Land Reclamation Project	209,840
	Phase II Logistics Storage Area Land Reclamation Project	118,416
	Phase III and IV Logistics Storage Area Embankment Engineering Project	812,377
	Tamsui River Mouth Dredging and Filling Project	50,539
	Logistics Storage Area Public Facilities Engineering Project	14
	South Wharf Area Public Facilities and Permanent Revetment Engineering Project	21,897
	Phase II Logistics Storage Area Land Reclamation Project – Preliminary Phase	38,095
	Phase III and IV Logistics Storage Area Embankment Engineering – Preliminary Phase	623,415
	Tamsui River Mouth Dredging and Filling Project – Preliminary Phase	47,619
	Public Facilities Engineering Project	185,411
	Public Facilities Engineering Project – Preliminary Phase	57,143
	Improvement of Public Road Pavement in Keelung Port, Taipei Port, and Su'ao Port	21,902
	Port Area Water Depth Measurement	3,963
	Dredging of Public Waters in the Port Area	21,500
	Specific Plan Road Damage Repair Project	20,899
	Phase II Waste Removal Engineering Project in the Waterfront Recreation Area	18,616
	Environmental Quality Monitoring Operations during Construction and Operation	18,162
	South Breakwater External Road Maintenance Engineering	1,428
	East Wharf 15 Damage Repair Project (II)	298
	Total	2,271,532
2023	Phase II Logistics Storage Area Land Reclamation Project	133,401
	Phase III and IV Logistics Storage Area Embankment Engineering Project	1,271,188
	Tamsui River Mouth Dredging and Filling Project	38,112
	Logistics Storage Area Public Facilities Engineering Project	93,799
	South Wharf Area Public Facilities and Permanent Revetment Engineering Project	642,414
	Public Facilities Engineering Project	139,226
	Administrative Building Comprehensive Renovation Project	11
	Embankment and Public Road Pavement Improvement and Repair Project	20,084
	Port Avenue Pavement and Roadbed Improvement Project	9,898
	Seawall Ancillary Engineering	82,954
	Bridge Inspection	4,841
	Dredging of Public Waters in the Port Area	65,379
	Phase II Waste Removal Engineering Project in the Waterfront Recreation Area	141,489
	Environmental Monitoring in the Port Area	22,328
	South Wharf Area Wharf Construction Project	314,228
	South Wharf Area Wharf Construction Project (Preliminary)	150,000
	Administrative Building Comprehensive Renovation Project	2,950
	Internal Road Pavement Repair Project	23,324
	East Wharf 15 Repair and East Wharf 7–9 Seabed Maintenance	55,586
	Taipei Port Water Supply System Improvement Project (2022)	1,870
	Port Avenue Pavement and Roadbed Improvement Project	12,464
	Total	3,225,546

08

Improvement Recommendations

Taipei Port initially expanded from two gravel wharfs to accommodate the government's policy of transporting sand from the east to the north. As of June 2024, the port has grown to 22 operational wharfs and continues to build various port facilities. Aligning with port development trends and national economic policies, Taipei Port has gradually developed into a key logistics center in northern Taiwan, featuring ocean-going container routes, value-added logistics centers, sea-air intermodal transport, and green energy environmental functions. It has become an important hub for container distribution and wind power development in northern Taiwan.

To comply with international green port trends and align with government environmental policies, Taipei Port is continuously constructing various environmentally friendly facilities. These include enclosed storage, waterfront revetments, windbreak forests, and ecological tidal pools, a 24-hour environmental monitoring system, and solar power generation facilities. The goal is to establish Taipei Port as a high-quality international green port, integrating concepts of environmental protection, social responsibility, and corporate governance, and advancing towards sustainable development.

If you have any inquiries regarding this report, please contact us.

Port of Taipei
Keelung Port
Taiwan International Ports Corporation, Ltd.

Address: 24941 No.123,Shanggang Rd.,Bali Areas New Taipei City, Taiwan(R.O.C)
Website: https://kl.twport.com.tw/tp_en/