PORT OF KAOHSIUNG

ENVIRONMENTAL REPORT

TAIWAN INTERNATIONAL PORTS CORPORATION, LTD.

TIPC

2024

Port of Kaohsiung
▪ T A I W A N ▪

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CONTENT

Message from Port of Kaohsiung

Over the past two years, the world has faced the severe threat of COVID-19, significantly impacting international economies and the lives of people everywhere. Kaohsiung Port was no exception. We conducted continuous screenings of port personnel, environmental disinfection, and control of people and vehicles entering and leaving the port. The arduous days of epidemic prevention are still vivid in our memories. We overcame the most challenging times together with everyone!

Since 2013, Kaohsiung Port Branch has been promoting the "Taiwan Ports Green Port Initiative," focusing on four major areas: "Passenger Transport," "Freight Transport," "Port Environment," and "City/Community Development." We have integrated the concept of "environmental friendliness" into our operational development priorities and established an environmental management mechanism. During the pandemic, we made many preparations. With the post-pandemic recovery, Kaohsiung Port is ready to welcome travelers from around the world. For example, the Kaohsiung Port Cruise Terminal was inaugurated in March 2023. This building features a unique 3D metal curtain wall design and passive energy-saving technology, which reduces heat absorption and achieves energy saving and carbon reduction. Since its opening, it has welcomed 50 international cruise ships. Additionally, to strengthen Kaohsiung Port's status as a container hub and meet the operational needs of large ships entering the port, we have been promoting the "Kaohsiung Port Intercontinental Container Terminal Phase II Project" since 2011. The first phase of the Seventh Container Terminal was officially opened in May 2023, and the second phasewas inaugurated in July 2024. We are currently seizing the opportunity to proceed with the integration of container terminals and the reconstruction of the third and fifth container terminals at Kaohsiung Port, securing our strategic position as a key container port in East Asia.

The Seventh Container Terminal is Taiwan's first fully automated terminal, serving as a new intelligent and sustainable container base in the Asia-Pacific region, providing innovative and sustainable modern port environments for shipping companies. In alignment with the Kaohsiung City Government's April 2023 announcement of the implementation of the second phase of the "Air Quality Maintenance Zone Control Area" at Kaohsiung Port, diesel trucks and tractors must comply with emission standards to enter the air quality maintenance zone. We continue to advocate for the use of shore power by ships to reduce fuel use and carbon emissions. In terms of the redevelopment of the old port area of Kaohsiung, we have preserved the historical and cultural value of the warehouse groups, transforming the old warehouses into the "Dagang Warehouse 410" complex, which opened to the public in 2022. Additionally, at the beginning of 2024, Kaohsiung Port Branch will collaborate with the Kaohsiung City Government to host the "Return of the Rubber Duck to Kaohsiung's Love River Bay and Winter Wonderland," allowing citizens to experience a unique port city atmosphere.

The challenges of international hidden risks and the opportunities for upgrading and transformation often coexist. Kaohsiung Port continues to evolve. The Kaohsiung Port Branch will comprehensively strengthen port development, social resilience, and adaptability, creating a more diverse and rich cultural environment. In the future, Kaohsiung Port will continue to collaborate with all sectors, working together towards sustainable development.

Wang, Chin-Jung

President of Port of Kaohsiung
Taiwan International Ports Corporation, Ltd.

Environmental Policy and Objective

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
Chairman of TIPC

Date: 2024 /10/30

Chin-Jung Wang
President of TIPC

Environmental Policies
Port of Kaohsiung

The port of Kaohsiung is the lifeblood of Taiwan's economic development and plays an important role in the world trade. We are well aware of the need to balance the prosperity of the port with the ecological environment, so that the port and the environment can be developed in a harmonious manner to ensure the sustainable development of the port of Kaohsiung.

In order to express our values towards the environment, the Port of Kaohsiung, Taiwan International Ports Corporation, has established the following environmental policies, incorporating the concept of environmental friendliness into the focus of operation and development, and striving to make Kaohsiung port a model of green port.

- Fully apply the environmental management system; promote sustainable development of the green port.
- Follow environmental laws and regulations; endeavor to fulfill corporate social responsibility initiatives.
- Provide appropriate environmental education and training; enhance the environmental awareness and skills of our employees.
- Continue environmental monitoring and pollution control; reduce energy consumption, carbon emissions, and environmental load.
- Disclose environmental information regularly; establish a bridge of communication between the inner and outer port.
- Promote community participation ; co-create a friendly port-city environment.

President of Port of Kaohsiung, TIPC Wang, Chin-Jung

Date 2024/06/18

Environmental Objectives
Port of Kaohsiung

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

Climate Change Adaptation Strategy
Continue greenhouse gas management and gradually promote a net-zero emission strategy. Strengthen infrastructure to achieve sustainable port development.

Improvement of Port Air Quality
Continuously monitor air quality in the port area and establish a maintenance zone for air quality. Strengthen environmental patrols to monitor and control pollution sources.

Enhancing Energy Efficiency
Promote energy conservation and carbon reduction, green procurement, and develop a smart energy management system to advance renewable energy.

Strengthening Port Development
Promote overall planning of the port area, conduct operations to relocate intercontinental container centers, revitalize old port resources, optimize waterfront recreational facilities, promote prosperity between port and city, and implement sustainable development.

Reducing Environmental Impact of Ships
Continue to advocate for ship speed reduction and expand the use of shore power, effectively manage ship emissions, and monitor water quality in the port area long term.

Prevention and Control of Fugitive Dust in the Port Area/Enhancing Vehicle Regulations
Enhance advocacy and inspections to ensure operators implement dust control measures. Improve automated gate control systems, establish a smart traffic flow system, and coordinate with authorities to manage older vehicles.

Enhancing Management of Hazardous Materials in the Port Area
Establish a safety management system for hazardous materials, strengthen onsite supervision, and implement disaster prevention.

Strengthening Port Area Waste Management
Implement resource recycling and enhance the efficiency of waste management in the port area.

Monitoring Pollution in Marine Sediments
Conduct long-term monitoring of sediment quality to protect the port's ecology.

Expanding Community-Friendly Relations
Develop environmentally friendly spaces in the port-city area, strengthen public participation and interaction with local communities.

President of Port of Kaohsiung, TIPC Wang, Chin-Jung

Date 2024/06/17

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Port Profile

1.1 Port Geographic Information

The Port of Kaohsiung is located on the southwest coast of Taiwan (22°27 north latitude and 120°10' East longitude) at the intersection of Taiwan Strait and Bashi Channel. The Port enjoys a geographic position at the hub of shipping routes, and serves as an essential point for American, European, Australian and Asian shipping routes. With a vast hinterland, the port occupies 18.71 km^2 of land, and the water area of the Port reaches 158.65km2. The maximum draft of its inner port is 17.5 meters. Average tidal range is 0.74 meters. The Port has two entrances: No. 1 and No.2. Geographically speaking, the Port was a natural lagoon before it became a port (Takao Bay). The Port is situated on a plain area, and the coastal area of the Port includes: rocky foreshore, tidal flats, sea walls, offshore island (Chichin Peninsula), offshore banks and sandy beach. The Port neighbors the downtown area of Kaohsiung City, industrial parks (Linhai Industrial Park, Export Processing Zone) and waterfront recreational area (Chichin Seashore). In addition, the Love River, Canal No. 5 , Qianzhen River and Yanshui Stream all flow into the ocean through the Port.

1.2 Legal Status and Port Operators

To modernize the management of commercial ports in Taiwan, the country passed the amendment of Commercial Port Law on December 28, 2011. It was then decided in March 2012 that the government 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 a corporation (Taiwan International Ports 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 transformation, management of the Port of Kaohsiung is now the responsibility of the Kaohsiung Branch of TIPC. The Southern Taiwan Service Center of Maritime and Port Bureau (MPB), Ministry of Transportation and Communications (MOTC) will be in charge of navigation and managemen.

Map of Kaohsiung Port

Port of Kaohsiung

Bulk/General Cargo Area
A1 Intercontinental Container Terminal Project Phase 2 Bulk/General Cargo Terminal
A2 Chungtao Commercial Harbor Area
Container Terminal Area
B1 Container Terminal No. 2
B2 Container Terminal No. 3
B3 Container Terminal No. 4
B4 Container Terminal No. 5
B5 Container Terminal No. 6
B6 Container Terminal No. 7
Recreation/Business Area
E1 Ling-Ya Comercial Harbor Area
E2 Peng-Lai Comercial Harbor Area
Military Zone
Fishery Zone
Green Zone
Passenger /Passenger and Cargo Terminal
Logistic & Warehousings Area
C1 Export Processing Zone
C2 Intercontinental Container Terminal Project Phase 2 Logistic & Warehousings Area
Port Administrative Zone
Industrial Zone
D1 Taiwan Shipbuilding Corp.
D2 CPC Corporation, Taiwan
D3 Taiwan Power Corp.; Dalin

Channel of Port Entrance No.2
Port Entrance No.1
Chunghe Levee
South Levee
North Levee
Fengbitou Fishing Port
Linhai System Interchange
Kaohsiung Linhai Industrial Park
China Steel Corp.
Cianjhen Fishing Port
Linguang Export Processing Zone
Cross-Harbor Tunnel
Fishery Zone
Sewage Treatment Plant
Basin No.7
Basin No.6
Basin No.8
Fishing Boats Basin
Maritime Working Ship Basin
Port Service Ship Basin
New Basin No.7
Naval Factory
Xinbin Terminal
Basin No.1
Basin No.2
Basin No.3
The Great Harbor Bridge
Cruise Passenger Terminal
Love River
800m (-22.0m)
600m (-17.0m)
900m (-17.0m)
320m (-12.5m)
400m (-12.5m)
12
13

1.3 Commercial Activities

At present, the commercial section of the port include 139 operating docks(Including 44 non-operating docks), whose full length is 34,223 m, including: bulk and sundry goods dock, container dock and industrial dock. Commercial activities within the port include: ship building and repair, petroleum product processing, marinas / leisure, chemical industry, general manufacturing, storage and packaging and refrigerated cargo.

1.4 Main Cargoes

In 2022 and 2023, the inbound cargo of the Port of Kaohsiung mainly includes mineral products (60.66%), Base metals and their products (13.16%), vegetable products (8.46%), and products of chemical or allied industries (5.59%). The outbound cargo primarily includes base metals and their products (38.49%), plastics, rubber, and articles thereof (23.52%), products of chemical or allied industries (11.56%), and mineral products (10.64%).

Main Commercial Activities and Cargo Handling of Port of Kaohsiung

Petroleum	Pyrites minerals
Crude oil Refined products	Aluminium Cement Phosphates Sulphur
Dry bulk	Liquid bulk (non-oil)
Animal feed Chemicals Grains Scrap Timber Wood products	Liquid chemicals Liquefied gases
Ores	Other
Coal Iron ore	Fish Fruit

1.5 Port Business

2022–2023 Business of Port of Kaohsiung

Item		2022	2023	Difference	%
Incoming and Outgoing Ships	Number of Vessel	30,469	30,835	366	1.20
	G.T.	726,942,191	795,741,814	68,799,623	9.46
Volume of Cargo Handled	Cargo (Revenue ton)	339,354,108	315,550,620	-23,803,488	-7.01
	Dry bulk and Groceries (Revenue ton)	52,093,879	49,328,299	-2,765,580	-5.31
	Pipeline cargo (Revenue ton)	29,739,158	26,357,510	-3,381,648	-11.37
	Total (Revenue ton)	421,187,145	391,236,429	-29,950,716	-7.11
Number of Cargo Handle	Incoming Cargo(TEU)	4,736,007.50	4,410,810.00	-325,197.50	-6.87
	Outgoing Cargo(TEU)	4,755,607.50	4,423,020.00	-332,587.50	-6.99
	Total(TEU)	9,491,615.00	8,833,830.00	-657,785.00	-6.93
Volume of Imports & Exports	Imports (ton)	75,365,416	64,991,134	-10,374,282	-13.77
	Exports (ton)	28,964,319	25,372,399	-3,591,920	-12.40
	Domestic (ton)	9,727,684	9,519,935	-207,749	-2.14
	Total (ton)	114,057,419	99,883,468	-14,173,951	-12.43
Incoming and Outgoing Passenger	Domestic Line (number)	43,061	66,563	23,502	54.58
	International Line (number)	0	180,574	180,574	100.00
	Total (number)	43,061	247,137	204,076	473.92

02

Environmental Management

2.1 Organization Structure

The Kaohsiung Branch of TIPC is in charge of managing the environment of the Port of Kaohsiung. However, environmental aspects involve the division of responsibilities among different agencies. In addition to the Kaohsiung Branch of TIPC, agencies responsible for environmental aspects include the South Maritime Affairs Center, Marine Bureau, Environmental Protection Bureau, Ministry of Environment, Coast Guard 5th General Brigade, Kaohsiung Harbor Police Department, and Kaohsiung Harbor Fire Brigade...etc.

The Kaohsiung Branch of TIPC consists of 15 divisions, including Port Business Division, Harbor Management Division, Stevedoring and Warehousing Division, Information Technology Division, Construction Management, Engineering Division, Maintenance Division, Ship and Machinery Division, Occupational Safety and Health Division, Personnel Division, Civil Service Ethics Division, Accounting Division, Secretariat Division, Anping Port Branch Office, Magong District Office and Budai District Office.

The Occupational Safety and Health Division, primarily responsible for environmental management, consists of the following units:
Safety and Health Management Section: Manages labor safety and health operations.
Health and Prevention Section: Handles pollution prevention within the port area, environmental regulations, environmental monitoring, assistance in managing toxic chemical spills, and environmental education.
Field Safety Section: Manages oil pollution control, ecological conservation, plant maintenance, waste management, and resource recycling within the port.
There are a total of 36 personnel engaged in environmental-related roles.

Port Of Kaohsiung

Management
-Kaohsiung Port Branch Office
-Ocean Affairs Council
-South Taiwan Maritime Affairs Center

Supervise
-Kaohsiung Port Branch Office
-Marine Bureau Kaohsiung City
-Ocean Affairs Council
-South Taiwan Maritime Affairs Center
-Ministry of Environment, Executive Yuan
-Environment Protection Bureau of Kaohsiung City

Perform Interdiction,Collection of evidence or Enforcement Referral
-Kaohsiung Port Branch Office
-Offshore Flotilla 5
-South Taiwan Maritime Affairs Center
-Environment Protection Bureau of Kaohsiung City
-Kaohsiung Harbor Police Dept

Sanction
-Ocean Conservation Administration, OCA
-Marine Bureau Kaohsiung City
-South Taiwan Maritime Affairs Center
-Ministry of Environment, Executive Yuan
-Environment Protection Bureau of Kaohsiung City
-Kaohsiung Harbor Police Dept

Duties of the Divisions of the Kaohsiung Branch of TIPC

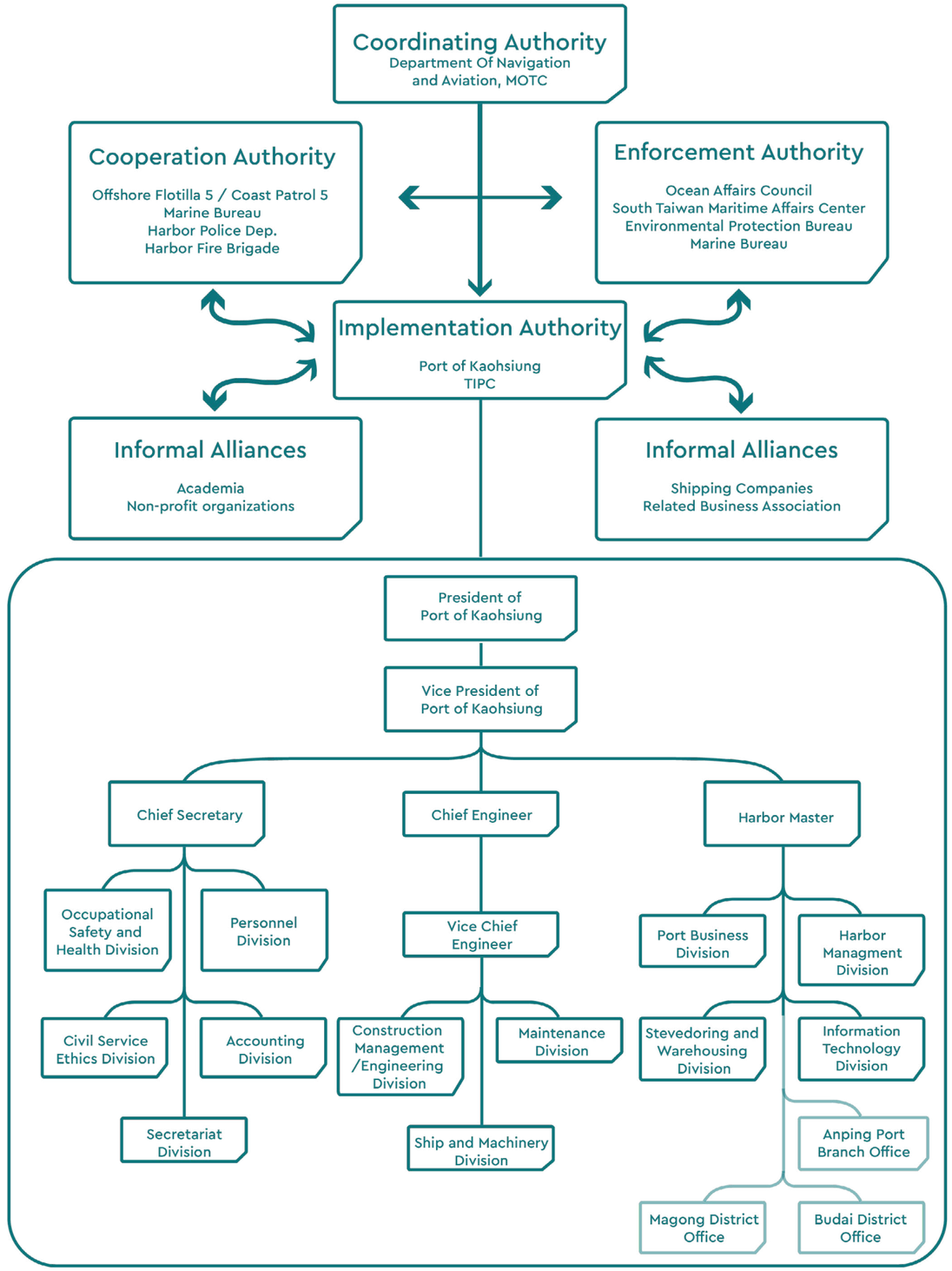


Figure of Organization chart of Kaohsiung Branch of TIPC

Remarks: Anping Port Operation Office is responsible for the operation and management of Anping Port, Magong Management Office is responsible for the operation and management of Magong Port, and Budai Management Office is responsible for the operation and management of Budai Port

2.2.1 Relevant International Regulations

The Kaohsiung Branch of TIPC follows relevant international specifications, such as International Convention for the Prevention of Pollution From Ships (MARPOL73/78), London Dumping Convention, International Convention for the Control and Management of Ships' Ballast Water and Sediments.

2.2.2 Relevant Environmental Laws and Regulations Related to Ports in Taiwan

In addition to the international environmental specifications and conventions, The Kaohsiung Branch of TIPC collaborates with local authorities to manage the environment in the Port in compliance with relevant environmental laws and regulations in Taiwan.

Relevant Environmental Laws and Regulations Related to Ports in Taiwan

Competent Authorities	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 Transportation and Communications	South Maritime Affairs Center, Maritime and Port Bureau, MOTC
	The Law Of Ships	2018/11/28		
	The 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	Fire Bureau, Kaohsiung City Government
Sectors related to agricultural	Wildlife Conservation Act	2013/01/23	Council of Agriculture	Marine Bureau/ Agriculture Bureau, Kaohsiung City Government
Sectors related to environmental protection	Marine Pollution Control Act	2023/05/31	Ocean Affair Council	Marine Bureau, Kaohsiung City Government
	Basic Environment Act	2002/12/11	Ministry of Environment	Environmental Protection Bureau, Kaohsiung 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 Act	2011/11/23		
	Toxic and Concerned Chemical Substances Control Act	2019/01/16		
	Soil and Groundwater Pollution Remediation Act	2010/02/03		
	Environmental Agents Control Act	2016/12/07		
	Climate Change Response Act	2023/02/15		
	Resource Recycling Act	2009/01/21		
	Public Nuisance Dispute Mediation Act	2009/06/17		Public Nuisance Disputes Mediation Committee, Kaohsiung City Government
Intersectoral	Disaster Prevention and Protection Act	2022/06/15	Ministry of the Interior	Kaohsiung City Government

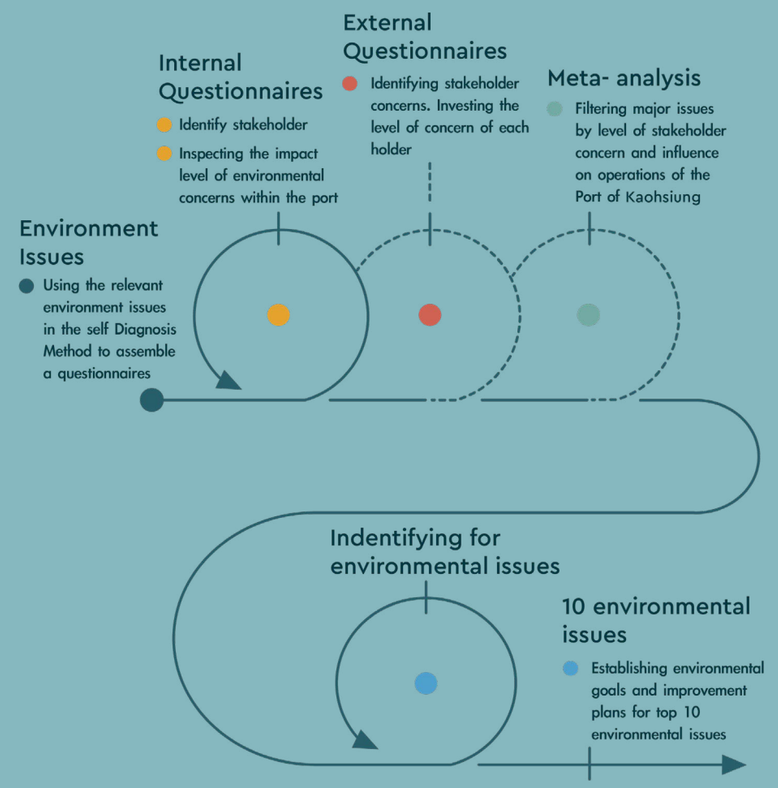
2.3 Stakeholder Analysis

As an important enterprise in the Kaohsiung City bay area, the Kaohsiung Branch of TIPC uses a variety of methods to communicate with stakeholders Their needs and expectations are gathered and incorporated into the company's policy. The Port of Kaohsiung believes that good communications with the stakeholders help identify key environmental issues and create value Therefore, it collected surveys to help formulate the Port's Environmental Objective

Sector	Environmental Concerns	Relevant Environmental Objectives
Government	Climate Change, Air Quality, Energy Management, Ship Emissions, Dust/Vehicle Emissions, Port Area Business Pollution, Hazardous Goods, Marine Sediments, etc.	Issue 1: Climate Change Issue 2: Air Quality Issue 3: Energy Efficiency Issue 4: Port Development Issue 5: Ship Emissions Issue 6: Dust/Vehicle Emissions Issue 7: Port Area Business Pollution Issue 8: Waste/Port Waste Management Issue 9: Marine Sediments
Employee	Climate Change, Air Quality, Environmental Hygiene Quality in the Port Area, Resource Utilization	Issue 1: Climate Change Issue 2: Air Quality Issue 3: Energy Efficiency Issue 4: Port Development Issue 6: Dust/Vehicle Emissions Issue 8: Waste/Port Waste Management Issue 10: Relationship with Local Communities
Clients	Climate Change , Air Quality, Port Area Business Pollution, Environmental Hygiene Quality in the Port Area, Port Development, Port Safety Maintenance	Issue 1: Climate Change Issue 2: Air Quality Issue 4: Port Development Issue 5: Ship Emissions Issue 8: Waste/Port Waste Management
Community	Air Quality, Vehicle Emissions, Ship Emissions, Pollutants Carried by Rivers Noise, Port Development, Port Safety Maintenance	Issue 2: Air Quality Issue 4: Port Development Issue 5: Ship Emissions Issue 7: Hazardous Goods Issue 8: Waste/Port Waste Management Issue 10: Relationship with Local Communities

Kaohsiung Port Branch has assessed the activities and services that may have a significant impact on the environment of Kaohsiung Port, including the significant environmental impacts caused by related businesses (tenants, contractors) in the port area, and sorts out the relevant environmental laws and regulations for each topic. Regulations, and the handling methods of Kaohsiung Port Branch, and through the third justice law firm to confirm the laws and regulations and operating norms that should correspond to various environmental issues. In addition, in order to review the environmental performance of Kaohsiung Port, the Kaohsiung Port Branch has established appropriate environmental performance indicators for the ten major environmental issues of Kaohsiung Port.

Stakeholders	Number of Questionnaires	Percentage
Government	43	42%
Employees (Colleagues)	45	44%
Suppliers or Contractors	3	3%
Port Operator	10	10%
Community or Local Groups	2	1%
Total	103	100%



Port of Kaohsiung

Environmental Issues

Top 10

1. Climate Change

indicator

- Greenhouse Gas Management
- Tree Planting Program
- Water Resource Recycling

2. Air quality

indicator

-Air quality pass rate (PM_{10}、$PM_{2.5}$、SO_2、NO_2)
-Number of air pollution patrols

3. Energy Efficiency

indicator

- Electricity and Fuel Efficiency
- Replacement of Energy-Saving Equipment
- Solar Power Generation

4. Port Development

indicator

- Intercontinental Relocation Operations
- Public Waterfront Recreation Spaces

5. Ship Emissions

indicator

- Management of Ship Waste Oil and Sewage
- Ship Exhaust Emissions
- Proportion of Harbor Service Ships Using Shore Power
- Shore Power Usage

6. Dust/Vehicle Emissions (including large vehicles for loading and discharging goods)

indicator

- Proportion of Bulk Cargo (cement, coal) Handling Using Enclosed/Sheltered Transportation in Port Areas
- Vehicle Washing
- Promotion of Automated Gate Systems for Transportation Companies

7. Hazardous Goods

indicator

- Coordination with the Harbor and Port Bureau for Supervision of Hazardous Goods in Port Areas
- Company-Managed Inspections of Hazardous Goods in Port Areas

8. Waste/ Port Waste Management

indicator

- Resource Recycling Rate in Port Areas (Land)
- Waste in Port Water Areas

9. Marine sediment quality

indicator

-Sediment monitoring

10. Relationship with Local Communities

indicator

-Neighborhood and community welfare activities

03

State of the Environment

3.1 Responding to Climate Change

In March 2022, Taiwan officially announced the "Taiwan 2050 Net Zero Emissions Pathway and Strategy Overview," and on February 15, 2023, the domestic "Climate Change Response Act" was officially promulgated. In line with national policy, the Port Authority also proposed in 2023 a greenhouse gas reduction target of reducing Scope 1 and Scope 2 emissions by 50% compared to 2020 levels by 2030 and achieving net zero emissions by 2050.

To achieve these goals, the Port Authority has begun planning a carbon reduction blueprint and pathways, promoting corporate transformation strategies, and collaborating with industry partners to reduce carbon emissions. Through continuous greenhouse gas management, we are gradually implementing net zero emission strategies. At the same time, we are strengthening infrastructure to achieve concrete actions for the sustainable development of the port.

Greenhouse Gas Management

Since 2013, the Port Authority has proactively conducted greenhouse gas inventory operations. Through refined greenhouse gas management practices, we continually monitor energy use and the emissions generated by our operations.
Kaohsiung Port has conducted greenhouse gas inventories for 2020-2021 based on the ISO 14064–1:2018 standard, starting from 2022. Since 2023, this inventory process has been adjusted to an annual basis.
The primary activities include port area management operations and office administration. The organizational boundary for greenhouse gas emissions is set according to the operational control approach, identifying all emission sources within the organizational boundary. This means 100% of emissions are owned and controlled by the Kaohsiung branch, excluding emissions from affiliated ports (Anping Port, Budai Port, Penghu Port), subsidiary harbor services companies, and tenants. The 2022 inventory was completed in November 2023 and was externally verified to meet the ISO 14064–1:2018 standard requirements.
Additionally, the greenhouse gas inventory verification for the first phase of the Nanxing Free Trade Port Zone at Kaohsiung Port was conducted in October 2019. This was part of the "Nanxing Land Development Project Free Trade Port Zone Phase 1" Environmental Impact Statement's third content amendment comparison table (greenhouse gas inventory). The verification results were submitted to the Environmental Protection Administration, which changed it to Kaohsiung Port Branch guiding resident companies to conduct independent greenhouse gas inventories and keep records for reference.

2023 "Taiwan Ports Greenhouse Gas Verification and Guidance Research Project" Kaohsiung Branch Port Area Stakeholder Briefing

Kaohsiung Port Branch 2022 Greenhouse Gas Verification Statement

Area Name	Company Name	Scope 1	Scope 2	Scope 1 + Scope 2	Total Emissions (tons CO_2e/year)	Total Emissions (10,000 tons CO_2e/year)
Nanxing Free Trade Zone Phase 1	Gaoqun Stevedoring Co., Ltd.	24.4017	32.2775	56.6792	56.6792	0.0057
	Dingmao Storage and Logistics Co., Ltd.	0.4842	13.6125	14.0967	14.0967	0.0014
	Fuhui Enterprise Co., Ltd.	49.8611	28.5719	78.433	78.433	0.0078
	Luda Co., Ltd.	0.3975	16.1558	16.5533	16.5533	0.0017
	Jieqi Enterprise Co., Ltd.	19.491	17.7992	37.2902	37.2902	0.0037
	Jiexin International Logistics Co., Ltd.	30.4051	20.4742	50.8793	50.8793	0.0051
	Zhaoxin Chemical Industry Co., Ltd.	11.5754	29.8035	41.3789	41.3789	0.0041
	Junding Machinery Co., Ltd.	619.9886	2816.24	3436.2286	3436.2296	0.3436
	Total	756.6046	2974.94	3731.5402	3731.5339	0.3731539

Water Resource Reuse

To achieve carbon sequestration through planting, the "Taiwan International Ports Corporation Tree Planting Program" annually assesses and inventories areas within the commercial port zones suitable for planting. Appropriate tree species and quantities are selected, outsourced, and planted, with subsequent maintenance operations conducted. In 2022, a total of 32,394 trees were planted; in 2023, the total was 37,415 trees. Additionally, to ensure that colleagues responsible for plant maintenance correctly understand the coastal greenbelt suitable for sustainable port operations, our branch organized a "Coastal Afforestation Workshop" in 2022, inviting participation from various branches. In 2023, a tree planting activity was held, with representatives from port area agencies invited to participate.

2023/05/04 "Establishing Sustainability, Greening Kaohsiung Port" Tree Planting Event

2023/05/04 "Establishing Sustainability, Greening Kaohsiung Port" Tree Planting Event

Tree Planting Program

After wastewater from Kaohsiung Port enters the treatment facilities, it undergoes processes such as primary sedimentation, coagulation, aeration, filtration, activated carbon adsorption, and disinfection. Once it meets discharge standards, it is released into receiving water bodies. To achieve water conservation, reclaimed water is also utilized for irrigation of green areas within the port. The water reuse rates for 2022 and 2023 were 90.1% and 92.9%, respectively.

Port Area Sewage Treatment Facilities

Recycled Water Reused for Plant Irrigation

Tree Planting Program

The impact of global warming has become increasingly evident, affecting various aspects of life due to abnormal weather conditions. To enhance the resilience of our commercial ports in adapting to such conditions, the Port Authority commissioned the "Assessment of Harbor Structures Affected by Abnormal Weather Conditions Professional Services." This includes basic data surveys of existing breakwaters (including breakwater berms), piers, and revetments. The survey covers location, usage, facility types and structural forms, length, parapet height, footing types, pier structural types, pier usage, berthing ship tonnage, turning basin dimensions and number, channel depth, and water and land area. Additionally, relevant cases of domestic and international harbor structures coping with abnormal weather conditions are collected and analyzed to develop response strategies and measures. The reconstruction needs and urgency of old piers in response to climate change are also reviewed. This includes assessing pier elevation, wave resistance, seismic resistance, track foundation bearing capacity, and conducting inspections and safety evaluations of port facilities, followed by necessary repairs.

3.2 Air Quality

The primary air pollutants at Kaohsiung Port include nitrogen oxides (NOx), sulfur dioxide (SO_2), and particulate matter (PM_{10}). The majority of pollution emissions come from ocean-going vessels, followed by port vessels, heavy-duty vehicles, and loading and discharging equipment. The main source of pollution from ocean-going vessels is the combustion emissions from auxiliary boilers and auxiliary engines while docked, leading to high SO_2 emissions.

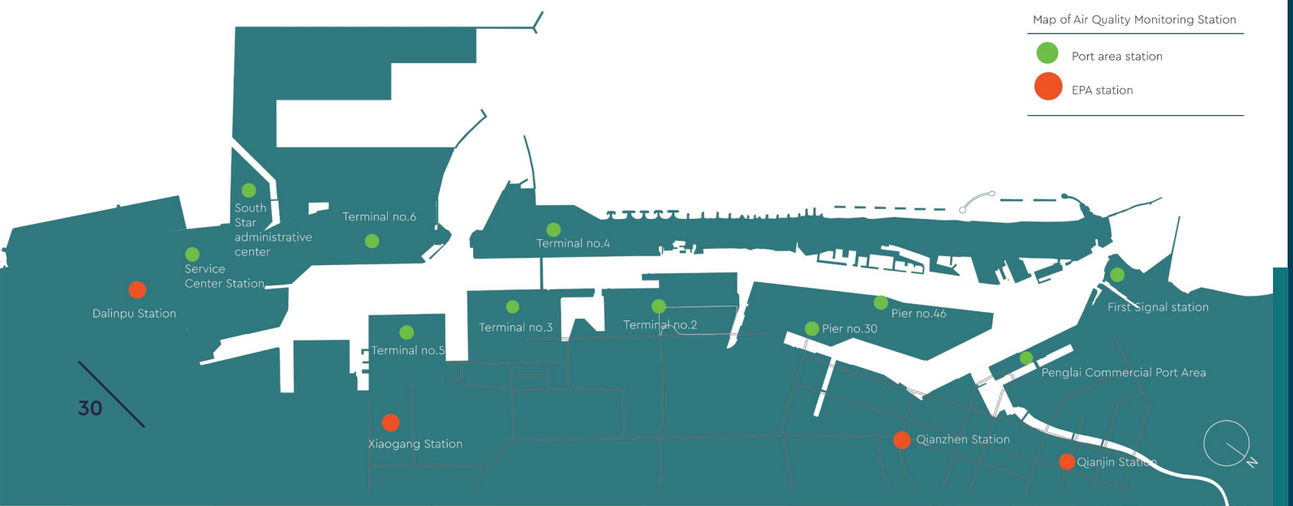
Pollution from heavy-duty trucks mainly occurs during idling engines in operations such as loading, discharging, and weighing. Therefore, whether in terms of pollution reduction or greenhouse gas reduction, the Kaohsiung Port Branch focuses on promoting awareness among incoming vessels and freight operators, improving emissions from cargo handling equipment and operations, and regulating transportation vehicles.

Air Quality Monitoring Situation

Currently,12 air quality monitoring stations are set up in the Port of Kaohsiung, monitoring items include total suspended particles(TSP)、particulate matters(PM_{10})、fine suspended particles($PM_{2.5}$)、(SO_2)、(NO_x) and ozone(O_3)。These indicators are monitored quarterly In addition, two monitoring stations are established in the neighboring areas of the Port of Kaohsiung, namely the Xiaogang Monitoring Station and the Dalin Po Monitoring Station, respectively set up by the Ministry of Environment and EPB.

Performance Rate

Indicator	Performance (Pass Rate%) Target	2022	2023
PM_{10} Daily Ave.(<100μg/m³)	100	99	97
$PM_{2.5}$Daily Ave.(<35μg/m³)	60	77	84
SO_2 Daily Ave.(<0.02 ppm)	100	100	100
NO_2 Daily Ave.(<0.1 ppm)	100	100	100



Preventing Emissions from Cargo Handling Operations

In order to suppress environmental dust, Kaohsiung Port has installed dust nets, cleaned roads, used sprayers, and set up four car wash pools at Piers 50, 52, 54, and 55 to effectively reduce the number of bulk cargo terminals No. 48–56. Environmental pollution caused by suspended particles generated during loading and discharging of cargo.


Dust prevention nets

Number of times and utilization rate of car wash pool

year	washing times
2022	around 55,000
2023	around 39,000

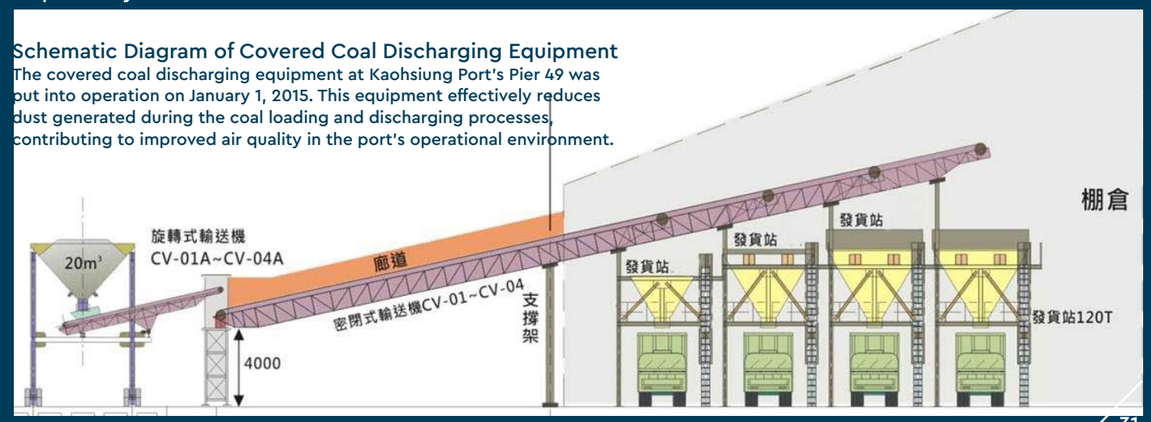
Covered coal discharging equipment has been installed at Pier 49 to prevent dust pollution during the coal loading and discharging processes. The coal discharging volumes for 2022 and 2023 were approximately 590,000 tons and 510,000 tons, respectively.


Shelter type coal discharging operation

High water pressure car wash lane

Schematic Diagram of Covered Coal Discharging Equipment

The covered coal discharging equipment at Kaohsiung Port's Pier 49 was put into operation on January 1, 2015. This equipment effectively reduces dust generated during the coal loading and discharging processes, contributing to improved air quality in the port's operational environment.



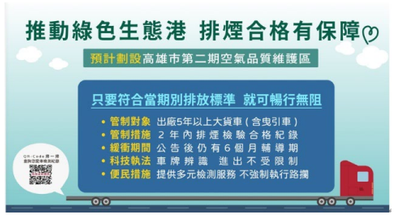
Schematic of the shielded coal discharging facility

Land Mobile Pollution Source Control

Land-based transportation vehicles at Kaohsiung Port are another major source of air pollution emissions. In recent years, the Kaohsiung Port Branch has not only coordinated with the Kaohsiung City Government's Environmental Protection Bureau to conduct joint inspections and provide mobile testing stations for large diesel vehicles in Phases 3 to 5 within the port area, but has also supported the Kaohsiung City Government in designating the "Port Air Quality Maintenance Zone."

Additionally, measures such as enhancing the automated sentry system and establishing a pre-announcement system for container pickup and delivery have been implemented to effectively reduce vehicle exhaust emissions.

To minimize truck idling time and reduce engine exhaust emissions, there are currently 69 entry and exit lanes at Kaohsiung Port, of which 36 are equipped with automated sentries. The main reason for not fully implementing automated sentries across all lanes is to accommodate the entry and exit of cargo with special specifications. However, for future new lanes, aside from retaining a small number of general lanes, all others will be planned as automated sentries.



Designation of Air Quality Maintenance Zones in the Port Area

Automated vehicle traffic and carbon reduction

After the automated lanes are installed, the average clearance time has been improved from 4 minutes to 10 seconds, and the diesel consumption can be reduced by 24.6 grams and carbon emissions by 0.152 kilograms per trip. According to statistics, the number of traffic from 2022 to 2023, there were approximately 26.95 million vehicle trips, which is estimated to have reduced carbon emissions by about 4,097 tons.

Establishment of "Port 168" Kaohsiung Port Traffic Information Network

Nanxing Control Station

The carbon reduction of heavy trucks through automatic gate lanes

Year	No.of Passing Container Trucks	Fuel Consumption Reduction	Carbon Emission Reduction(Kg)	Total Fuel Reduction (L)	Total Carbon Reduction(Kg)
2018	9,898,116	24.6 g/per passing	0.152 kg/Per passing	243,493,654	1,504,514
2019	10,876,734			267,567,656	1,653,264
2020	12,600,997			309,984,526	1,915,352
2021	12,904,406			317,448,388	1,961,470
2022	13,795,966			339,380,764	2,096,957
2023	13,154,783			323,607,662	1,999,527

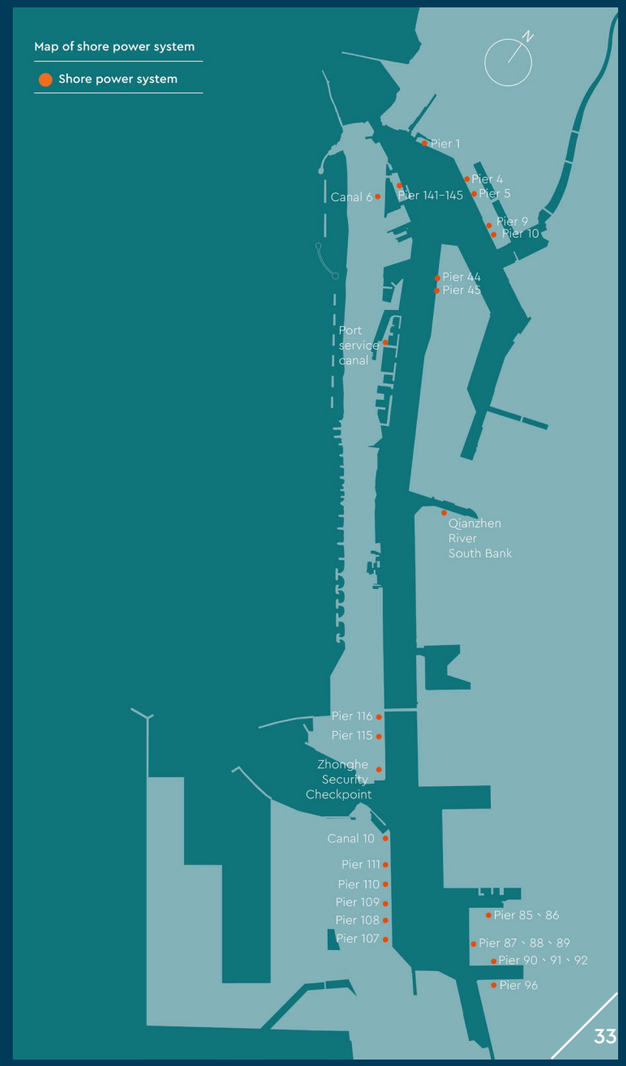
1. Automotive Research & Testing Center
2. EPA "Eco Life"Website (ecolife.epa.gov.te)

Vessel (Water) Mobile Pollution Source Control

Ship pollution management can be divided into air and sewage and waste. In terms of air pollution, Kaohsiung Port Branch continued to make efforts towards the full use of low-polluting ships in port operations. Kaohsiung Port currently has 73 low-voltage shore power stations and 8 high-voltage shore power stations. First of all, it is ensured that all ships in the port area use shore power when docking to reduce the exhaust emissions of ships in the port area. According to statistics, the utilization rate of shore power (both low-voltage shore power) for port handling ships is 100%; The shore power usage was 925,778 kWh in 2022 and 828,129 kWh in 2023.

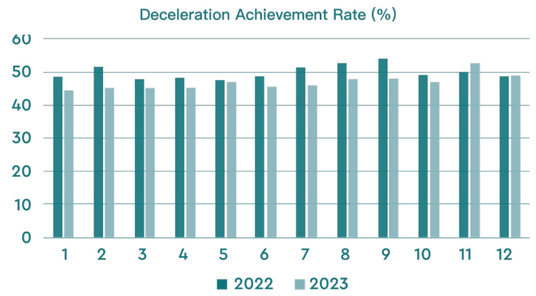
Shore power terminal voltage and quantity table

Location	Voltage	Quantity
Pier No. 1	220V	1
Pier No. 4	220V	1
Pier No. 5	220V	2
Pier No. 9	220V	1
Pier No. 10	440V	2
Pier No. 44	3.3KV	1
Pier No. 45	440V	1
Pier No. 85、86	440V	5
Pier No. 87、88、89	440V	7
Pier No. 90、91、92	440V	7
Pier No. 96	480V	1
Pier No. 107	6.6kV	1
Pier No. 108	6.6kV	1
Pier No. 109	6.6kV	1
Pier No. 110	6.6kV	1
Pier No. 111	6.6kV	1
Pier No. 115	6.6kV	1
Pier No. 116	6.6kV	1
Pier No. 141	110V、220V、440V	4
Pier No. 142	110V、220V、440V	5
Pier No. 143	110V、220V、440V	2
Pier No. 144	110V、220V、440V	2
Pier No. 145	110V、220V、440V	2
Channal 6	220V、440V	12
Channal 10	220V	3
Zhonghe Security Checkpoint	220V	1
Port service canal	110V、220V	11
Qianzhen River South Bank	220V、440V	3



Promote Vessel Speed Reduction

Kaohsiung Port encourages ships entering and leaving the port to implement Vessel Speed Reduction (VSR), and promotes ships sailing within 20 miles of the international commercial port area through VTS and other pipelines to cooperate to reduce speed to less than 12 knots; within the port area (3~5 wei) The rate of achievement of deceleration of the ship is 100%, and the ship should travel slowly in accordance with regulations. The achievement rates in 2022 and 2023are 46.78% and 49.78%, respectively.



year	(A)Vessels meeting the criteria	(B)Vessels with measured average speed	(C)VSR achievement rate(%) (C=A/B)
2022	10,802	23,089	46.78
2023	11,123	22,346	49.78

Low Pollution Fuel

All vessels in Kaohsiung Port from 2016 to 2021 use low-polluting fuel oil. At the same time, the switch of fuel products of ships entering the port is promoted, and the ship will be promoted to the ship from the VTC tower for fuel switching within 5 nautical miles. From 2019, ships in the port area should use low-sulfur fuel oil with a sulfur content of less than 0.5% or devices or alternative fuels with the same emission reduction effect.

Build "Ship Navigation Smart Warning Auxiliary System"

Kaohsiung Port is an international integrated port for commerce, military, fishing and industry. About 70,000 ships enter and leave the port every year. Such a huge sea traffic flow has caused a great burden on tower controllers and increased risks to navigation safety. In order to promote smart ports, improve operational efficiency and navigation safety, the port company will upgrade the VTS in 2020 and build a "smart navigation warning assistance system for ships". Reduce the human error rate to improve port efficiency and service quality, strengthen maritime traffic safety, reduce the occurrence of port accidents such as terminal collisions, and reduce marine impact and pollution caused by ship accidents.

A Improve the marine weather management mechanism

Strengthen the warning function of abnormal marine weather

Establish a warning notification mechanism for marine meteorological equipment, and establish a warning function in accordance with the relevant regulations of the port area. Since 2022, it is planned to build and improve the marine meteorological warning function to improve marine traffic safety and reduce the risk of marine environment pollution due to marine traffic accidents.

Optimize the marine weather webpage

Through the new setting function, it is also connected to the webpage. If the marine weather value reaches the standard, a color block will be displayed on the webpage to strengthen the reminder function, and the construction will provide reference for various ships and shipping companies to speed up voyage planning.

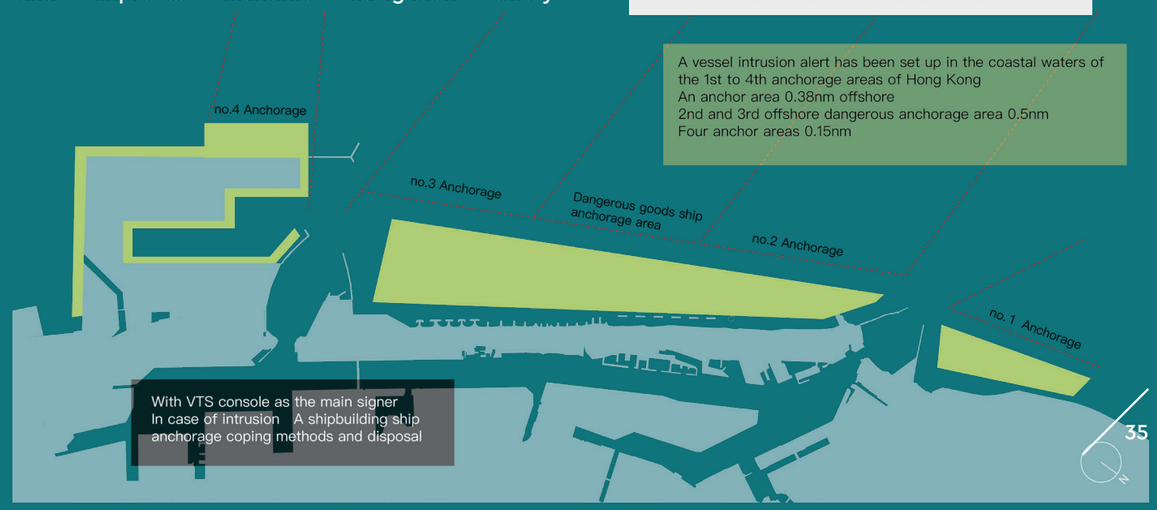
Optimization of Wave and Current Meters

Currently, two sets of wave and current meters (one primary and one backup) are installed at both the First Port and the Second Port. This setup increases the frequency of data updates, enhances monitoring and warning capabilities, and improves maritime navigation safety.

B Strengthen the function of monitoring ships

Added intrusion warning function

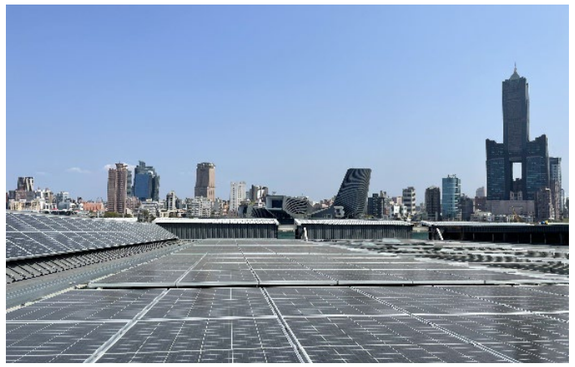
Strengthen the water management of the ship's anchoring area. In order to prevent the ship from stranded in the shoal area due to anchoring or unpowered drifting to the shoal area, resulting in the risk of oil pollution of the marine environment, the smart electronic chart has added a water intrusion ship warning function. Once the ship enters the shoal area , the warning function will give an instant warning and remind you to pay attention.



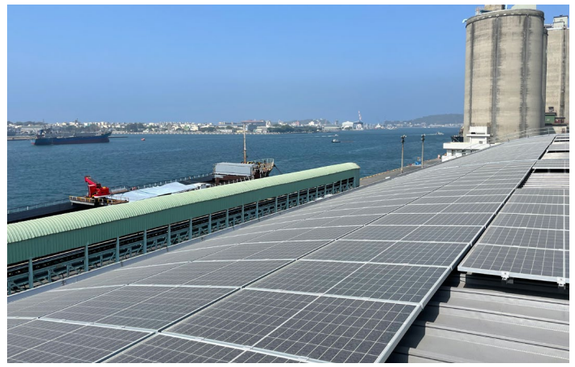
3.3 Port Energy

Setting up a solar photovoltaic system

In order to reduce the impact of the port area on the environment and implement environmental protection, Kaohsiung Port has set the improvement of energy efficiency as one of the ten environmental issues. Considering that the Kaohsiung Port area has sufficient sunshine conditions, it has important conditions for solar energy development, and makes full use of the resources of the port area. Therefore, it is planned to lease the roofs of some buildings in the port area to energy companies to set up photovoltaic power generation equipment, and the lessee will pay part of the electricity sales revenue. Paying for Kaohsiung Port as management fee not only makes good use of space to increase income, but also can block sunlight, reduce indoor temperature and reduce electricity consumption. Therefore, solar photovoltaics are used as the main force of Kaohsiung Port's renewable energy. Currently, Kaohsiung Port uses the roof space of existing buildings to install photovoltaic power generation equipment in Penglai, Qianzhen, Zhongdao Port District and the second, third, fourth, fifth, and sixth container centers generated approximately 8.98 million kWh of electricity in 2022 and about 9.05 million kWh in 2023.



Kaohsiung Port Zhongdao Commercial Port Area (Warehouse No. 36)



Kaohsiung Port Zhongdao Commercial Port Area (Warehouse No. 46–1)

Solar Panel Installation at the Newly Launched Seventh Container Terminal in 2023

In 2023, the Port Authority planned and installed solar photovoltaic panels at the newly launched Seventh Container Terminal. The installation of solar panels on Building I of the container terminal has been completed. The solar panels cover an area of approximately 9,350 square meters, with an estimated power generation capacity of about 2,208 MWh per year and a carbon reduction of approximately 1,093 tons per year.

Seventh Container Terminal Storage Yard

Reduce resource consumption

A.Promoting Energy Conservation Reporting Website for Government Agencies and Schools."
The main approach for reducing resource consumption in port is to report the amount of power consumption and oil consumption through the "Energy Conservation Reporting Website for Government Agencies and Schools." This website was established by the Bureau of Energy, Ministry of Economic Affairs. The amounts of power saved in 2020 and 2021 were 1.9% and – 0.29% respectively, and the amounts of oil saved in 2020 and 2021 were 7.64% and 4.86% respectively.

Establishment of the Port Area "Smart Energy Management System"

B. Green Procurement
In order to implement the green port policy, the office equipment of this branch will be given priority to purchase items with "environmental protection labels", and cooperate with the "green life information website" to log in. Both 2020 and 2021 will achieve 100% green procurement.

Establishment of the Port Area "Smart Energy Management System"

C. Purchase electric business vehicles
In order to reduce fuel consumption and pollution at the same time, the branch has purchased 2 electric vehicles and 17 locomotives for use by colleagues for inspections and business negotiations, in order to achieve the effect of energy saving and carbon reduction

D. Daily office energy saving measures

- Meeting (training) by video
- Reverse Osmosis Recycled Water Reuse
- Implement paperless work with electronic operations
- Utility bills sent electronically instead
- Use e-cards
- Data double-sided printing, blank paper reuse
- Meeting (training) bring your own green cup
- Moderate control of air conditioning temperature
- Encourage employees to use the mass transit system
- Planting green environment, tree planting activities

E. Handle energy conservation and carbon reduction

2023/09/15–24 Port Authority's Response to "2023 Global Sustainable Development Week"
In response to the "2023 Global Sustainable Development Week," the Port Authority organized the "2023 Sustainable Future SDGs Joyful Life" series of activities from September 15 to 24, 2023. The event (pictured: "Starting a Low-Carbon Lifestyle") called on port and shipping industry partners, along with families and children, to participate in actions promoting a green and low-carbon lifestyle. The aim was to establish sustainable development goals (SDGs) and raise awareness of sustainability.

2023/03/10 Port Authority and Taiwan Ports Association Co-Hosted the "Voluntary Carbon Reduction World Café"
On March 10, 2023, the Port Authority, in collaboration with the Taiwan Ports Association, co-hosted the "Voluntary Carbon Reduction World Café." This event utilized group discussions to brainstorm and discover innovative carbon reduction tips in daily life, thereby deepening the awareness of carbon reduction among port partners.

3.4 Port development promotion

Kaohsiung Port is the largest international commercial port in Taiwan and is located in the Asian shipping hub. The port development policy is aimed at a sustainable green port. Therefore, the overall environment and compatibility with the city are the primary considerations in the development process.

Start the port construction in accordance with the "Taiwan International Commercial Port Future Development and Construction Plan" approved by the Executive Yuan.

Promote the "Intercontinental Container Center Project"

Kaohsiung Port has been established for over 100 years. In response to the trend of larger ships and changing economic and trade environments, the "Intercontinental Container Center Project" is being promoted to create future development opportunities. This project focuses on sustainable and environmentally friendly design and construction. Once completed, it will allow for the re-allocation of the Kaohsiung Port Area Container Center, increase the number of berths for large container terminals, provide sufficient land for industrial chain integration, and address the issue of scattered oil storage tanks in the port area. Additionally, it will create land development opportunities in the old port area and revitalize waterfront tourism and recreational resources. Kaohsiung Port aims to become a green port that supports sustainable development in production, living, and ecology, creating a win-win situation for both the port and the city.

Kaohsiung Port handles nearly 70% of Taiwan's total container volume, with Evergreen Shipping accounting for over 30% of the port's total. This significantly contributes to Taiwan's economic growth. To enhance the port's competitiveness and future development, the seventh container center, currently under construction, will provide a better operational base for Evergreen Shipping and improve its competitiveness in international shipping. This development is crucial for the long-term growth of Taiwan's economy and trade, offering a modern operating environment for shipping companies and fostering a new win-win situation for Kaohsiung Port, the city, and the shipping industry.

Construction of "Kaohsiung Port Tourism Center"

To revitalize the harbor space and provide a relaxing environment, Kaohsiung Port is developing the "Kaohsiung Port Tourism Center" as part of a multi-functional economic and trade park plan. The center, featuring a modern steel frame and 3D curved metal curtain wall inspired by ocean waves, will have 2 underground floors and 15 above ground.

Upon completion, it will integrate with Piers 17 to 21, accommodating 225,000-ton cruise ships and serving over 2,100 passengers per hour during peak times. The center aims to offer recreational, dining, cultural, and commercial activities, promoting international exchanges and tourism. This transformation will make Kaohsiung Port a landmark multi-functional international port, enhancing its role beyond cargo transportation.

The old port area reconstruction and transformation plan

The Kaohsiung Port Area, close to densely populated urban areas, established the "Kaohsiung Port City Cooperation Platform" with the Kaohsiung City Government in 2015 to facilitate communication and consensus-building. As of October 2022, 18 formal meetings have been held. The platform addresses port-city cooperation issues, promotes the transformation and development of the port area, upgrades the old port area's infrastructure, and monitors air pollution control.

The old port area of Kaohsiung Port is rich in historical and cultural significance. To promote land development and revitalize waterfront resources, the company and the Kaohsiung City Government established "Kaohsiung Port Area Land Development Co., Ltd." This entity has successfully developed Zhan 2 Warehouse, Kaohsiung Port Waiting Room, Dagang Warehouse 410, and Yachting Wharf Zone A. Future plans include promoting the Penglai Commercial Port Zone, the land behind Pier 21, and Yachting Wharf Zone B, with a total waterfront space of 58.7 hectares. These efforts aim to reshape the old port area, achieving co-prosperity and sustainable development for the port and city.

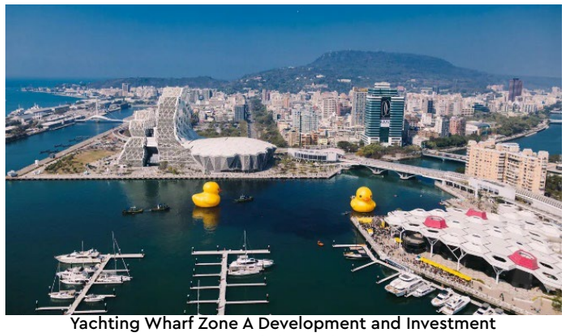
Continue to carry out environmental monitoring in the port area

To manage environmental changes around the port area, the port company continuously monitors air quality, noise, water quality, bottom quality, and the ecological environment. The monitoring results help assess the impact of operations and development projects, identify deviations from the original environmental impact assessments, and compare findings with environmental regulations. This allows for the prompt detection of anomalies and immediate adjustments to maintain environmental quality.

Improve the road traffic in the port area

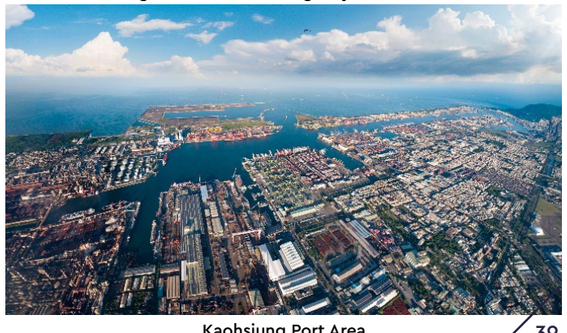
To enhance the connectivity of Kaohsiung Port and its surrounding areas, improve transportation efficiency, and reduce traffic conflicts, the Kaohsiung Port Linkage outer elevated road plan is being promoted. This plan aims to foster coordinated development between the port and the city, upgrade the traffic system, and improve living quality in Kaohsiung City. It involves constructing a 3.4-kilometer corridor connecting the commercial port area and a 1.13-kilometer extension corridor to Zhongshan High.

Dagang Warehouse 410 Revitalization and Development
(Image Source: Kaohsiung Port Area Land Development Co., Ltd.)



Yachting Wharf Zone A Development and Investment
(Image Source: Kaohsiung City Government)

Zhan Er Warehouse Officially Operational on 2018.03.31
(Image Source: Kaohsiung Port Area Land Development Co., Ltd.)



Kaohsiung Port Area

Habitat Restoration

The natural coast where the Port of Kaohsiung is located at was originally the habitat of mangroves. The coast was later reclaimed to develop the Port of Kaohsiung, and the increase of artificial coasts reduces the ecological and species diversity of the coast. Therefore, when developing the Port of Kaohsiung, the Kaohsiung Branch of TIPC is also committed to maintaining the ecology and habitats in the port and actively protecting the existing green belts (or buffer zones) to reduce the environmental stress.For example, the South Star Free Trade (SSFT) District is located in a remote area that is relatively free from human disturbances According to the environmental assessment conducted on the first and second phases of this land development project, a total 68 bird species have been observed and recorded According to the Kaohsiung Wild Brid Society, more than 210 species of migratory birds stop by the SSFT District during autumn and winter The district is also habitat to 8 species of mammals, 6 species of amphibians, 10 species of reptiles, and 40 species of butterflies In addition, the society found 5 species endemic to Taiwan, 19 subspecies endemic to Taiwan, 2 rare and protected species, and 3 other species that should be protected Therefore during construction and operation processes, the SSFT District plans to preserve the existing windbreaks, protect indigenous species to green the area, set up green belts as buffer zones,and restrict the speed of incoming and outgoing vehicles to reduce the impact incurred by development Currently, approximately 10 ha of land in the development area of the first phase of the SSFT District has been preserved as a wild bird habitat.

Green Building of Nanxing Management Center

Oriental Pratincole

Common kestrel

Ecological conservation

The Seventh Container Terminal at Kaohsiung Port incorporates a green container yard design, introducing multiple concepts of energy saving and reuse to create a green port. It is the first container terminal in Taiwan to introduce the concept of a port area park. During construction, surplus soil was fully utilized to backfill the south and north green belt areas, promoting circular economy and reuse.

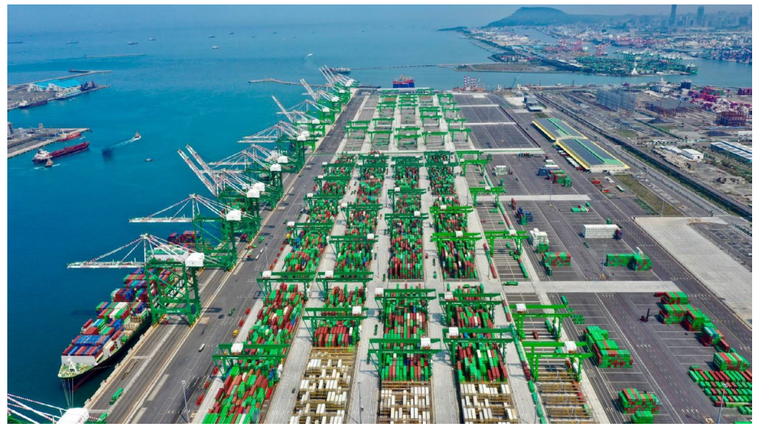
Kaohsiung Port employs eco-conservation strategies and eco-friendly designs in response to its "Green, Ecological Port" directive. The four main strategies are avoidance, minimization, mitigation, and compensation:

Avoidance: Construction sites avoid ecologically sensitive areas and important habitats.

Minimization:
- Wharf structures use steel pipe pile relief structures to reduce marine construction time and impact on the underwater ecosystem.
- Container yard track designs use pile-beam foundations to minimize excavation time and ecological impact.

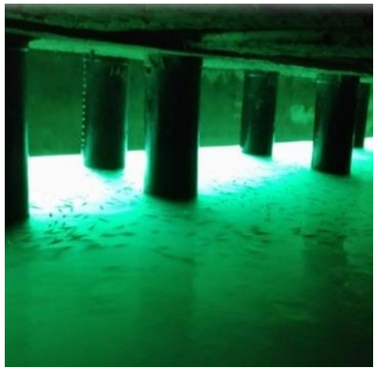
Mitigation:
- Structures adopt designs to reduce marine construction impact.
- Turbidity prevention membranes are installed during dredging to mitigate marine ecological impacts.

Compensation:
- Pressure relief and wave dissipation chambers are installed, and caissons are relocated to create ecological submerged reefs.
- Green belts are added to create ecological zones, balancing economic development with environmental sustainability.



The Seventh Container Terminal

Installation of Turbidity Prevention Membranes



Ecological Habitats in the Wharf's Underwater Pressure Relief and Wave Dissipation Chambers

Underwater Ecology of the Relocated Circular Caissons as Ecological Submerged Reefs

Ecological Habitats in the Wharf's Underwater Pressure Relief and Wave Dissipation Chambers

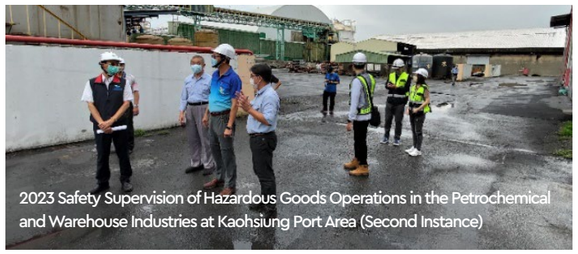
3.5 Management of Hazardous Goods in the Port Area

To effectively manage hazardous containers in the port area, our company established the "Port Hazardous Goods Safety Management Information System" in January 2017. This system integrates with the customs container movement system to provide detailed information on the storage and auditing of hazardous goods in the port. In December 2019, we further enhanced this by establishing the "Port Hazardous Goods Intelligent Cloud Platform," which visually displays the storage distribution on a map, allowing for real-time tracking of hazardous materials.

To ensure port safety, in addition to emphasizing disaster prevention and response to emergencies, Kaohsiung Port has also implemented drills, exercises, and supervisory inspection mechanisms for hazardous goods. Monthly safety and health inspections are conducted for the loading and discharging operations at the public petrochemical terminals. Any deficiencies found during these inspections are immediately communicated to the operators and on-site management units to prevent operational hazards.

The port authority, in collaboration with the port's fire brigade and the Harbor Bureau, conducts at least two joint inspections and supervisory audits of hazardous goods annually, along with irregular inspections throughout the port area. In both 2022 and 2023, there were four joint inspections each year. Serious violations discovered during inspections are referred to the competent authorities for further action. For instance, in cases where highly dangerous goods were left in the port area for extended periods, there were five such referrals in 2022 and one in 2023.


2023 Safety Supervision of Hazardous Goods Operations in the Petrochemical and Warehouse Industries at Kaohsiung Port Area (First Instance)


2023 Safety Supervision of Hazardous Goods Operations in the Petrochemical and Warehouse Industries at Kaohsiung Port Area (Second Instance)

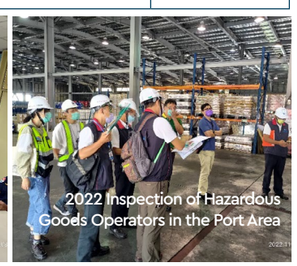
Kaohsiung Port Branch 2022–2023 Hazardous Goods Management and Related Activities

Year	Activity Type (Inspections, Meetings, Drills, Promotion)	Number of Participants
2022	"Safety Supervision Meeting for Hazardous Goods Operations in the Petrochemical Storage and Transportation Industry of Kaohsiung and Anping Port Areas"	23
	Self-organized Hazardous Goods Loading, Discharging, and Storage Management Inspections (05.11–05.27 Visits to Kaohsiung Port Area Petrochemical Operators)	15
	Kaohsiung Port 2022 Typhoon Disaster Prevention and Response Simulation Exercise (Video Conference)	23
	Kaohsiung Port Branch 2022 "Natural Disaster Education Training – Overview of the Physical Characteristics of Waves and Tides"	32
2023	"Safety Supervision Meeting for Hazardous Goods Operations in the Petrochemical Storage and Transportation Industry of Kaohsiung Port Area"	23
	Self-organized Hazardous Goods Loading, Discharging, and Storage Management Inspections (03.20–03.31 Visits to Kaohsiung Port Area Petrochemical Operators)	11
	Kaohsiung Port 2023 Typhoon Disaster Prevention and Response Wargame Exercise	28
	Kaohsiung Port Branch 2023 "Natural Disaster Education Training – The Impact of El Niño Phenomenon on Taiwan's Climate"	29


2022 Inspection of Hazardous Goods Operators in the Port Area


2022 Inspection of Hazardous Goods Operators in the Port Area


2022 Inspection of Petrochemical and Storage Operators' Operations


2022 Inspection of Hazardous Goods Operators in the Port Area

3.6 Port waste

Due to its proximity to urban areas, Kaohsiung Port places great importance on environmental cleanliness and the quality of life for residents. In accordance with the Waste Disposal Act and Articles 19 and 20 of the Resource Recycling and Reuse Act, the port managed to remove 1,395.56 tons of waste in 2022 and 1,192.01 tons in 2023. Through the "General Waste Resource Recycling Management Procedure," resources are sorted, recycled, and statistically managed to achieve resource reuse, reduce port resource consumption, and minimize waste generation. Environmental pollution or waste generated from loading and discharging operations of bulk cargo ships at the wharves is managed according to the "Taiwan International Ports Corporation Wharf Operations Environmental Pollution and Residual Waste Cleaning Management Procedure."

The Port Authority conducts daily cleaning operations in the port waters and, in accordance with Article 38 of the Commercial Port Law, manages the disposal of ship and crew living waste. In 2022, a total of 709.63 tons of ship and water area waste were collected, and in 2023, 592.80 tons were collected. Ships arriving at the port are also required to hire certified environmental companies to collect waste oil and water, reducing the environmental impact of ships docking at the port. In 2022, 3,118.51 tons of waste oil and water were collected, and 3,387.47 tons in 2023.

To effectively manage the waste disposal operations for the soon-to-be-operational Phase II Intercontinental water areas, the Port Authority has planned to purchase a new multifunctional cleaning vessel, which will begin operations in mid-2023. This new vessel will not only be capable of navigating outside the port but also feature automatic cleaning, high-pressure water jets, hydraulic arms, and oil-water separation functions, significantly enhancing Kaohsiung Port's capacity for handling marine waste and oil pollution.

Kaohsiung Port Waste Disposal and Recycling Statistics

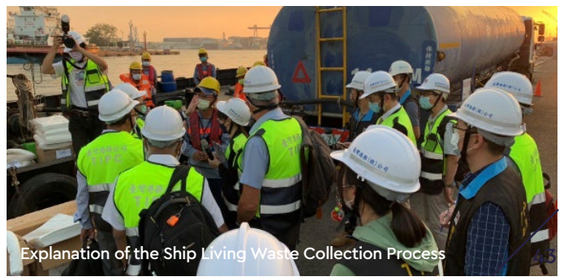
Project / Year	2022	2023
Waste generation (metric tons)	1,395.56	1,192.01
Resource recovery (metric tons)	10.893	23.27
Resource recovery rate (%)	0.8%	1.9%

Land Waste Cleaning Operations

Land Waste Cleaning Operations


Newly Installed Multifunctional Cleaning Vessel

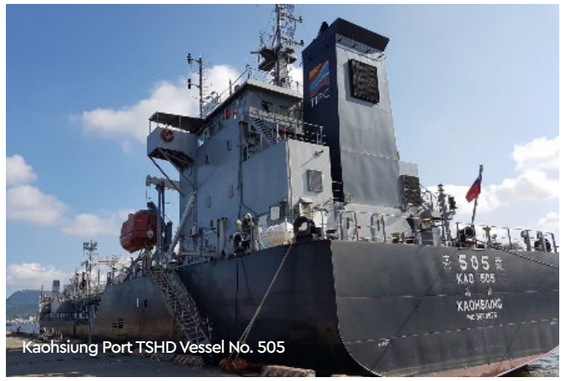

Marine Waste Cleaning Operations


Explanation of the Ship Living Waste Collection Process

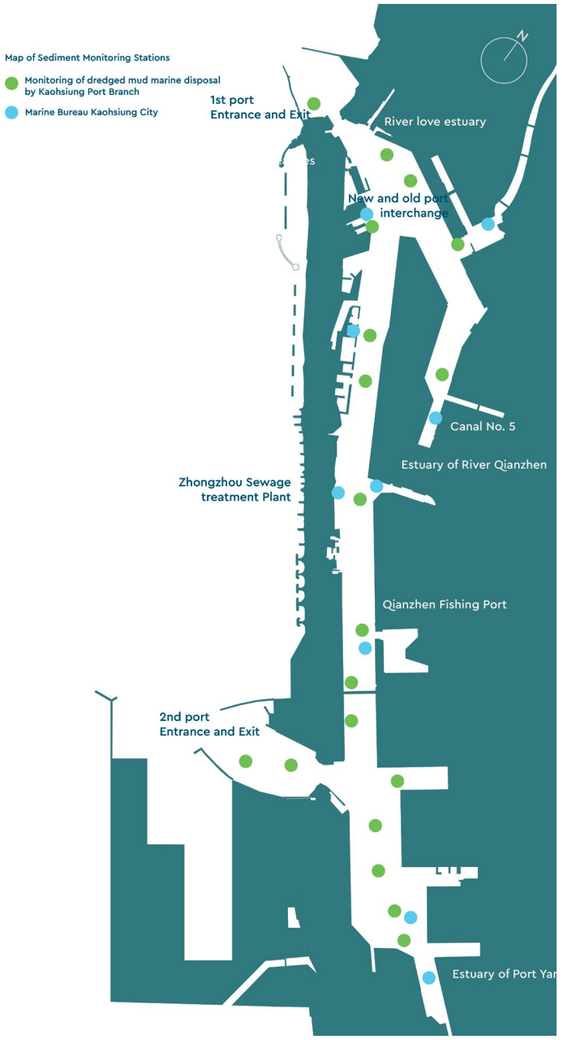
3.7 Monitoring to reduce marine sediment pollution

To effectively manage marine sediments, the Kaohsiung Port Branch conducts environmental monitoring every quarter. This includes sediment and bottom water monitoring within the port area, covering 32 substances such as total nitrogen, total phosphorus, total oil and grease, cyanides, and heavy metals. The results indicate heavy metal pollution at the points where rivers and channels flow into the port, suggesting that the pollution primarily originates from upstream discharges.

For the Kaohsiung Port dredged material ocean disposal site, the Kaohsiung Port Branch also conducts long-term impact monitoring on marine ecology and the environment based on the "Kaohsiung Port Dredged Material Ocean Disposal Permit Application." Reports are submitted quarterly to the Ocean Affairs Council.



Kaohsiung Port TSHD Vessel No. 505



Statistics on Dredging and Backfilling of "Kaohsiung Port Dredging and Marine Disposal Permit"

Year	Total Dredging Volume (10,000 cubic meters)	Disposal Volume (10,000 cubic meters)	Alternative Volume (10,000 cubic meters)	Reuse Rate (%)
2015	87.405	0.405	87	99.54%
2016	51.3	14.3	37	72.12%
2017	36.93	30.88	6.05	16.38%
2018	32.708	27.733	4.975	15.21%
2019	30.488	25.738	4.75	15.58%
2020	13.447	12.197	1.25	9.30%
2021-2022	47.195	41.195	6	12.71%

「Actual dredging volume of Kaohsiung Port reclamation project」

Project name	2016		2017		2018		2019		2020		2021		2022		2023	
	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside
The second phase project of Kaohsiung Port Intercontinental Container Center Project Seawall and Breakwater Project and Taipower Dalin Power Plant Renewal Project Diversion Diversion North Dike Project	107.7	0	2.89	0	0	0	0	0	0	0	0	0	0	0	0	0
The second phase of the Kaohsiung Port Intercontinental Container Center project plans shoreline, dredging, and port canal engineering	322.1	0	9.7	0	0	0	0	0	0	0	0	0	0	0	0	0
Kaohsiung Port Intercontinental Container Center Phase II Project Project New Land Reclamation Project	704.5	2,081.50	1,035.60	288.2	0	0	0	0	0	0	0	0	0	0	0	0
Kaohsiung Port Intercontinental Container Center Phase II Project S4-S5 Wharf Revetment and new Land Reclamation	609.9	0	66.3	0	0	0	44.9	0	0	0	0	0	0	0	0	0
Kaohsiung Port No. 4 Container Center Rear Line Site Expansion: Embankment Construction Project	0	0	152.6 note.1	143.6 note.2	0	0	0	0	0	0	0	0	0	0	0	0
Kaohsiung Port No. 7 Container Center Project S1-S3 Wharf Revetment and Xinsheng Land Reclamation Project	0	0	0	0	0	0	0	0	12207	0	34786	0	0	0	0	0
Kaohsiung Port A6 Wharf Revetment and Land Reclamation Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.6	0

Note 1: The second port of Kaohsiung Port, the waters in front of Pier 77 ~ Pier 111
Note 2: Anping Port Channel, Return Pool, Pier 10 berth

Unit: 10,000 cubic meters

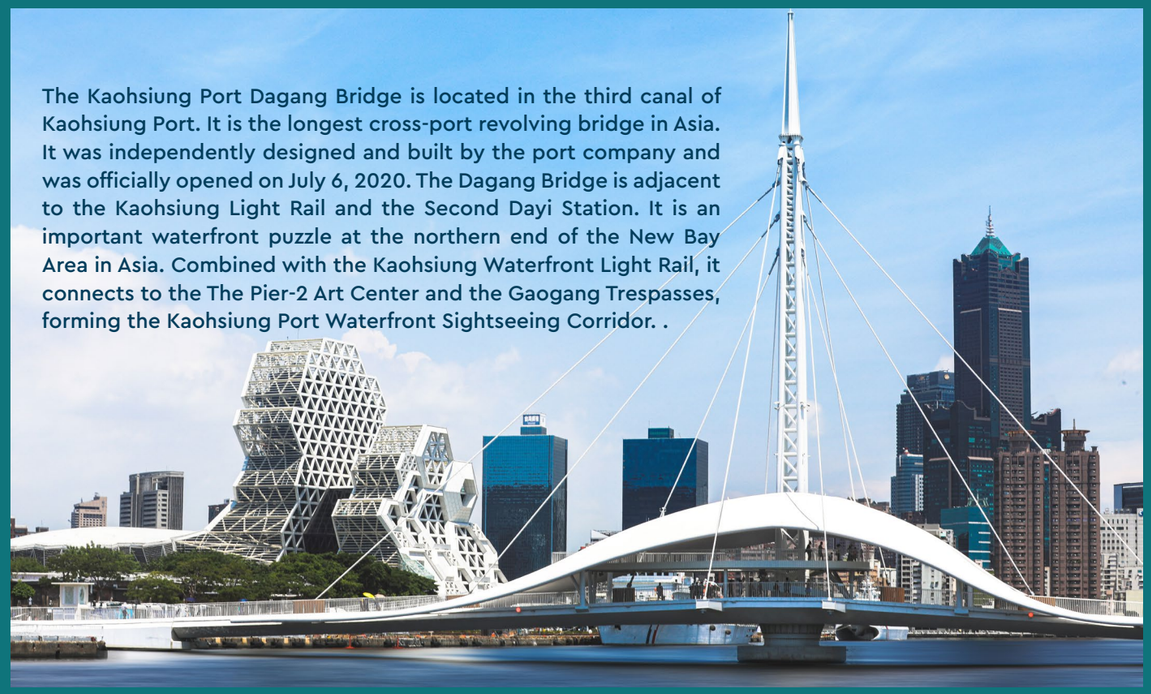
3.8 Strengthen relationships with local communities

The surrounding communities of Kaohsiung Port are facing the impact of the front line of the port and bear high environmental risks. Therefore, the Kaohsiung Port Branch has carried out environmental restoration by maintaining the port's hydrophilic space and green belt buffer area to create a harmonious water and land interface. Reducing the gap between the port and city interface through green belts can not only improve the living quality of nearby residents and reduce the impact of port operations on residents, but also increase ecological habitat and enhance the biodiversity of the surrounding environment of the port area. Kaohsiung Port Branch has also gradually opened up the old port area to the public, providing recreational space for the public with facilities such as parks, green spaces, event exhibition halls, and bicycle paths. Educational seminars, inviting the public to participate together, maintaining the public's identification with the port and good interaction with the surrounding community.

In order to achieve the community prospect of resource sharing, mutual benefit and common prosperity, and benefit the public, the port company opened the early port area control area as a water sightseeing and leisure space, and built a 4,300-square-meter high port at Kaohsiung Port No. 3 to 5. The water garden achieves the effect of energy saving, carbon reduction and environmental sustainability.

To achieve resource sharing and mutual prosperity for the community, benefiting society at large, the Port Authority has opened the early port-controlled areas for waterfront tourism and recreational spaces. At Kaohsiung Port's Piers 3 to 5, a 4,300-ping Kaohsiung Port Water Garden has been developed, promoting energy conservation, carbon reduction, and environmental sustainability.

Kaohsiung Port Waterfront Recreation Area Location Map


The Kaohsiung Port Dagang Bridge is located in the third canal of Kaohsiung Port. It is the longest cross-port revolving bridge in Asia. It was independently designed and built by the port company and was officially opened on July 6, 2020. The Dagang Bridge is adjacent to the Kaohsiung Light Rail and the Second Dayi Station. It is an important waterfront puzzle at the northern end of the New Bay Area in Asia. Combined with the Kaohsiung Waterfront Light Rail, it connects to the The Pier-2 Art Center and the Gaogang Trespasses, forming the Kaohsiung Port Waterfront Sightseeing Corridor. .

2023/09/21 "Hand in Hand x Plant-Based Cuisine" Event

2023/10/03 Kaohsiung Beiye Elementary School AI Activity

2023/04/29 "Bird Watching at Banpingshan" Parent-Child Activity


2022/10/15-16 Parent-Child Secondhand Goods Market

Strengthening Relations with the Local Community (Charity Activities)

In 2022, a total of 2 community engagement events and 12 community service activities were held. In 2023, a total of 3 community engagement events and 10 community service activities were conducted.

2022/12/21 "Empowering Women for Sustainability and Resilience" Course

2023/05/12 "Port Moms: Musical Mother's Day Event"

2023/03/01 "Port Authority Spreads Love" Donation Drive

2022/10/26 "Scenic Steps and Local Flavors" Volunteer Visit and "Joyful Reading" Retirement Care Course

2022/01/12 "Fortune and Prosperity: Kaohsiung Port's New Year Invoice Exchange for Spring Couplets" Charity Event

2023/12/08 Kaohsiung Municipal Cijin Hospital Fu Shou Alley Course

2022/07/20 "Port Authority's One-Day Hunger Experience Event"

Strengthening Relations with the Local Community (Charity Activities)

In line with the Executive Yuan's "Salute to the Sea" policy, the Kaohsiung Port Branch has been committed to engaging the public in government activities. Through various educational and entertaining activities, the branch aims to raise public awareness and concern for the port environment.

In 2022, the Kaohsiung Port Branch held a total of five "Marine Education" public charity events, jointly promoting marine environment protection and raising environmental awareness regarding marine conservation. One notable event was on May 4, when the branch collaborated with the National Sun Yat-sen University Kindergarten for a beach cleanup event titled "Hand in Hand to Clean Xiziwan and Art in Kindergarten." This event saw participation from kindergarten teachers, children, and port employees, all demonstrating their commitment to a friendly marine environment.

In 2023, the Kaohsiung Port Branch organized eleven "Marine Education" public charity events, using educational activities to promote marine education and share the journey of Kaohsiung Port as a green port. These activities encouraged mutual exchange and cooperation, maximizing the effectiveness of the "Salute to the Sea" policy. Among these, on September 19, the branch held the "2023 Sustainable Future SDGs Happy Life" beach cleanup event, and on September 21, the "Healthy Mobile Clean-up" event. Both events invited the participation of the Southern Maritime Center of the Maritime and Port Bureau, Ministry of Transportation and Communications, showcasing collective action to protect the marine environment and ensure its sustainable development.

2022 Port Authority and National Sun Yat-sen University Kindergarten Collaborative Beach Cleanup Activity

2023 Port Authority Beach Cleanup Activities

Greening and Beautification Work

In response to the global net-zero emissions movement and the trend of the EU and US carbon border adjustment mechanisms, the net-zero transition is no longer just an environmental issue. To promote net-zero emission policies, the government set a goal in 2022 for a net-zero transition by 2050, striving to minimize anthropogenic greenhouse gas emissions. Forests, as the natural storage for carbon dioxide, play a crucial role in this effort. Increasing the green coverage rate helps enhance the absorption and conversion of carbon dioxide. Our company is committed to greening the port area and conducting educational training, actively responding to the United Nations Sustainable Development Goals (SDGs), particularly SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land). In 2022 and 2023, our company planted vegetation at the rear lines of Pier 63, the green belt around Intercontinental Phase II, and the central median. Starting in July 2022, we engaged with the Tzu Chi Foundation for coastal afforestation. Both parties agreed to cooperate in afforestation on approximately 0.9 hectares of green space beside the Taipower Ash Pond in the Nanxing Project Area, planting 5,000 trees including yellow hibiscus, casuarina, and pandanus. This afforestation site is also an important stopover for migratory birds. Through this tree-planting cooperation project, we aim not only to provide a good stopover habitat for migratory birds, increasing biodiversity but also to beautify the coastal landscape.

Coastal Afforestation in Nanxing Project Area

Tree Planting Behind Pier 63

Greenbelt Around Intercontinental Phase II at Kaohsiung Port

Tree Planting Activities

Strengthening Relations with the Local Community (Port History Museum Cultural Activities)

Celebrating the 115th Anniversary of Kaohsiung Port: The "Dagang Fenghua" Floral Art Exhibition

To mark the 115th anniversary of the founding of Kaohsiung Port, our company, in collaboration with the Kaohsiung Chinese Floral Art Association and the Taiwan Ports Association, is hosting the "Dagang Fenghua" Floral Art Exhibition at the Kaohsiung Port History Museum. This exhibition, showcasing the beauty of Chinese floral art, aims to enhance the artistic and cultural ambiance of the port area. We warmly invite the public to visit the Kaohsiung Port History Museum and join us in celebrating this significant milestone for Kaohsiung Port. Our company is committed to building partnerships with diverse stakeholders to collaboratively promote sustainable development, aligning with the United Nations SDG 17: Partnerships for the Goals, thereby fulfilling our corporate social responsibility. This exhibition blends the historical artifacts of the port with the elegant spirit of floral art through the skilled hands of floral artists, creating floral arrangements infused with maritime cultural elements. This endeavor not only conveys the cultural and lifestyle essence of Kaohsiung Port but also transforms the historic Kaohsiung Port History Museum into a vibrant floral paradise, making visitors feel as if they are in a fairyland. Additionally, we are organizing a floral art workshop to apply floral art in everyday life, enhancing the joy and interest of daily activities.

Environmental Performance Indicators of Kaohsiung Port

10 Major environmental issues of Kaohsiung Port		Index item	Calculation method	Target value	Indicator presentation (calculation details)	
					2022	2023
1	Climate Change	Greenhouse Gas Management	Greenhouse Gas Emissions Inventory	• Greenhouse Gas Emissions	• Category 1 (Scope 1): 2,184.7932 tons CO2e/year • Category 2 (Scope 2): 9,405.1647 tons CO2e/year Total Emissions: 11,589.9579 tons CO2e/year	• Category 1 (Scope 1): 1,952.8663 tons CO2e/year • Category 2 (Scope 2): 10,758.9593 tons CO2e/year Total Emissions: 12,711.8256 tons CO2e/year (Data from independent inspection)
		Tree Planting Plan	Annual Tree Planting Quantity	In response to climate change and in line with national policies, we aim to gradually achieve net zero emissions by 2050.	Number of port area inspections:431	Number of port area inspections:406
		Water Resource Reuse	Reuse Rate = Recycled Water Volume (tons) / Inflow Water Volume (tons) × 100%	Reuse Rates 85%	Reuse Rates 90.1%	Reuse Rates 92.9%
2	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_{10} of the daily mean measurem- ents satisfy the standard (<100μg / m^3): 100% • $PM_{2.5}$ of the daily mean measurem- ents satisfy the standard (<35μg / m^3): 60% • SO_2 of the daily mean measurem- ents satisfy the standard (<0.02 ppm): 100% • NO_2 of the daily mean measurem- ents satisfy the standard (<0.1	• PM_{10} of the daily mean measurements satisfy the standard: 99% • $PM_{2.5}$ of the daily mean measurements satisfy the standard: 77% • SO_2 of the daily mean measurements satisfy the standard: 100% • NO_2 of the daily mean measurements satisfy the standard: 100%	• PM_{10} of the daily mean measurements satisfy the standard: 97% • $PM_{2.5}$ of the daily mean measurements satisfy the standard: 84% • SO_2 of the daily mean measurements satisfy the standard: 100% • NO_2 of the daily mean measurements satisfy the standard: 100%
		Number of air pollution patrols	Frequency of land patrol	300 inspections per year	Number of port area inspections:374	Number of port area inspections:331
3	Energy Efficiency	Energy and Fuel Efficiency	Electricity and Fuel Savings Rate in Office and Operation Areas Indicator Calculation Formula: (Current Year Resource Usage−Previous Year Resource Usage)÷Previous Year Resource Usage×100%	The implementation of entrusting qualified operators to clean up waste oil and sewage from ships The pass rate reaches 100%	• Electricity: +0.76% • Fuel: -16%	• Electricity: -2.94% • Fuel: +0.2%
		Replace with Energy-Efficient Facilities	umber of Official Fuel Vehicles Replaced	Handled in accordance with Article 2, Paragraph 4 of the "Operational Guidelines for the Procurement and Leasing of Official Vehicles by Central Government Agencies and Schools" issued by the Directorate General of Budget, Accounting, and Statistics.	0 vehicles	3 vehicles
		Solar Power Generation	2022 Power Emission Factor Published by the Bureau of Energy: 0.495 kg CO_2 per kWh	• Solar Power Generation • Carbon Emission Reduction	• 2022 Annual Generation: 8,918,351 kWh • Carbon Emission Reduction: approximately 4,415 metric tons	• 2023 Annual Generation: 9,180,979 kWh • Carbon Emission Reduction: approximately 4,545 metric tons
4	Port Development	Intercontinental Relocation Operations	Relocation Progres	Container Operators Completed Relocatio	• Operators: 0 • Area Leased: 0 hectares	• Operators: 1 • Area Leased: 84.3 hectares
				Breakbulk and Non-breakbulk Cargo Operators Completed Relocation	• Operators: 1 • Area Leased: 6.3 hectares	• Operators: 2 • Area Leased: 17 hectares
			Number of Trial Operation Operators	Petrochemical Operators Trial Operations	Number of Trial Operation Operators: 1	Number of Trial Operation Operators: 4

Environmental Performance Indicators of Kaohsiung Port

10 Major environmental issues of Kaohsiung Port		Index item	Calculation method	Target value	Indicator presentation (calculation details)	
					2022	2023
4	Port Development	Public waterside recreational space	• Area of Recreation • Area of reserved wide bird habitat • Area of greenbelt • Area of grassland	• Increasing and maintenance the area of waterside recreational space	• Recreation area :46.5ha • Reserved wide bird habitat: 8 ha • Area of greenbelt:4.5 • Area of grassland :18.3ha • The area of green space in Kao Port Park: 1.4 ha	• Recreation area :46.5ha • Reserved wide bird habitat: 8 ha • Area of greenbelt:4.5 • Area of grassland :18.3ha • The area of green space in Kao Port Park: 1.4 ha
5	Vessel Emission	Vessel waste oil management	• Processed by qualified collectors ÷ Total number of vessels collected× 100% • Amount of waste oil collected	• The implementation of entrusting qualified operators to clean up waste oil and sewage from ships • The pass rate reaches 100%	• 100%; total of 157 vessels • Vessel waste oil collected: 3,118.51 tons	• 100%; total of 163 vessels • Vessel waste oil collected: 3,387.47 tons
		Vessel exhaust •Proportion of Port Service Vessels Using Low-Pollution Fuel and Low-Pollution Fuel Consumption of Port Service Vessels	• Number of Port handling ships use clean fuel (sea heavy diesel oil or marine light diesel oil) ÷Total number of harbor vessel×100% • Total amount of clean fuel used	• 100%	15÷15×100%=100% • Port Service Vessels Low-Pollution Fuel: 15 KL (kiloliters) • Marine Light Diesel Fuel Consumption: 16.05 KL (kiloliters) • Marine Heavy Diesel Fuel Consumption: 540 KL (kiloliters)	15÷15×100%=100% • Port Service Vessels Low-Pollution Fuel: 15 KL (kiloliters) • Marine Light Diesel Fuel Consumption: 54.01 KL (kiloliters) • Marine Heavy Diesel Fuel Consumption: 423 KL (kiloliters)
		• The ratio of using shore power among harbor crafts • Shore power usage	• Number of harbor crafts using shore power ÷ Total number of harbor crafts × 100% • Shore power usage	The ratio of using shore power reaches 100% among harbor crafts	15 ÷ 15 × 100% = 100% • using shore power reaches 100% • Shore power usage: 925,778kWh	15 ÷ 15 × 100% = 100% • using shore power reaches 100% • Shore power usage: 828,129kWh
		Ships deceleration target completion rate	The automatic identification system for ship deceleration is applied to determine the deceleration of ships within 20 sea miles from the port	• Statistics on deceleration of ships entering and leaving the port • 100% ship deceleration achievement rate within the international commercial port area (3~5 miles)	• The achieved speed reduction rate was approximately 46.78%. • Nearly 100% achievement rate of inbound/outbound deceleration within the port area (3~5 miles)	• The achieved speed reduction rate was approximately 49.78%. • Nearly 100% achievement rate of inbound/outbound deceleration within the port area (3~5 miles)
6	Dust/Vehicle Exhaust Emissions (including large vehicles for loading and discharging cargo)	The percentage of concealed/covered transportation for bulk cargo (e.g., cement and coal) during loading and discharging operations in the port area	• 100% of cement loading and discharging uses closed transportation • 80% of coal loading and discharging use closed transportation	• The percentage of cement loaded and unloaded using concealed transportation: 100% • The percentage of coal loaded and unloaded using covered transportation: 80%	The amount of break bulk general cargo handled using the enclosed storage method ÷ (cement /coal) * 100% • Cement: 1,959,873÷1,959,873×100%=100% • Coal: 593,361÷593,361×100%=100%	The amount of break bulk general cargo handled using the enclosed storage method ÷ (cement /coal) * 100% • Cement: 1,650,858÷1,650,858×100%=100% • Coal: 514,235÷514,235×100%=100%
		Car wash	Vehicle washed	Total number washed	Total of 55,761vehicles	Total of 39,083 vehicles
		Promotion of a comprehensive use of the Automatic Gate Sentry Post Control System among shipping lines	• The ratio of incoming and outgoing roadways installed with an automatic gate sentry post control system • Number of passes • Carbon reduction	• All new lanes are to be organized as automated lanes.	• The ratio of incoming roadways installed with an automatic gate sentry post control system: 18 ÷ 35 × 100% = 51.4% • The ratio of outgoing roadways installed with an automatic gate sentry post control system: 18 ÷ 34 × 100% = 52.9% • Number of passes: 13,795,966 • Carbon reduction: 2,096.99 tons	• The ratio of incoming roadways installed with an automatic gate sentry post control system: 18 ÷ 35 × 100% = 51.4% • The ratio of outgoing roadways installed with an automatic gate sentry post control system: 18 ÷ 34 × 100% = 52.9% • Number of passes: 13,154,783 • Carbon reduction: 1,999.52 tons
7	Hazardous Cargo	Hazardous cargo inspection	• Number of Inspection Visits • Number of Inspected Hazardous Material Operators in the Port Area	• Inspections twice a year • Target Achievement Rate: 100%	• Inspections twice a year • 28 hazardous materials operators in the port area	• Inspections twice a year • 27 hazardous materials operators in the port area
		Conducts visits to hazardous materials operators in the port area	• Number of visits • Number of hazardous materials operators visited in the port area	• Visits twice a year • Target Achievement Rate: 100%	• Visits twice a year • 28 hazardous materials operators in the port area	• Visits twice a year • 27 hazardous materials operators in the port area

Environmental Performance Indicators of Kaohsiung Port

10 Major environmental issues of Kaohsiung Port		Index item	Calculation method	Target value	Indicator presentation (calculation details)	
					2022	2023
8	Garbage/ Port waste	Port recycling rate(land)	• Classification of terrestrial resource recycling in the port area • Amount of recycled waste	Carry out classification, recovery and statistics of resource recyclables in the port area	Recycled paper: 7.27 tons, iron: 3.42 tons, aluminum: 203 kg	Recycled paper: 17.82 tons, iron: 4.26 tons, aluminum: 1.19 tons
		Port Area Water Waste	• Cleaning frequency • Amount of waste collected	Clean daily	• Cleaned daily • 565.67tons	• Cleaned daily • 592.80 tons
9	Marine Sediment Pollution	Sediment monitoring	Quarterly means and maximums of port sediment monitoring measurements	Upper limits of heavy metal content in domestic sediments (mg/kg per unit): Arsenic 33 Mercury 0.87 Copper 157 Lead 161 Chromium 233 Zinc 384 Cadmium 2.49	• Arsenic Mean: 2.4 • Mercury Mean: 0.54 • Copper Mean: 94 • Lead Mean: 313 • Chromium Mean: 99 • Zinc Mean: 294 • Cadmium Mean: 0.20	• Arsenic Mean: 2.5 • Mercury Mean: 0.73 • Copper Mean: 74 • Lead Mean: 23 • Chromium Mean: 75 • Zinc Mean: 239 • Cadmium Mean: 0.20
10	Relationship with Local Communities	Neighborhood and community welfare activities	Number of activites and events	12 activities held	• 2 Community Engagement Activities • 12 Community Service Activities	• 3 Community Engagement Activities • 10 Community Service Activities

04

Emergency Response

4. Port emergency notification and drill

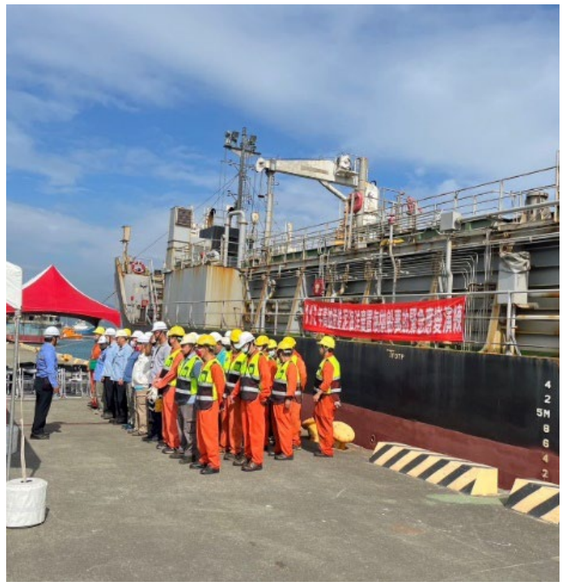
Ensuring the operational safety of the Kaohsiung Port Area is one of the primary responsibilities of the Kaohsiung Port Branch's Occupational Safety . The Health Prevention Section assigns personnel to conduct regular inspections of the port's land and water environments daily. Any suspected pollution behavior is immediately addressed with guidance, emergency response handling, or reporting to law enforcement authorities for penalties.

In 2022 and 2023, the main incidents in the Kaohsiung Port Area included minor oil spills, garbage, and fires. Other issues included vessel malfunctions, slight tilting (without safety impact), and miscellaneous incidents such as fishing activities obstructing navigation safety. Additionally, there were incidents of vessel collisions, fires, explosions, oil spills, chemical leaks, and other incidents.

To address pollution and disaster incidents in the port area, the Kaohsiung Port Branch, Kaohsiung City Environmental Protection Bureau, and Kaohsiung City Ocean Bureau have established complaint channels. These channels allow the public, shipping companies, and other relevant entities to report and contact authorities. The Kaohsiung Port Branch has also established 27 emergency response procedures (including plans) to manage crises related to various port area disaster events. These include incidents involving vessels, fires, explosions, significant oil pollution, major accidents, toxic chemical leaks, diseases, and natural disasters.

Kaohsiung Port Environmental Inspection and Transfer Statistics

Project\Year	2020	2021	2022	2023
Number of patrols	587	555	498	407
Notification	71	57	37	8
Admonishing ticket	1596	1235	631	453
Exhaust emission	939	1047	1397	1650
Environment and hygiene inspection in ship making plants	33	26	18	14
Admonishment for improvement	616	371	269	247
Penalty (MPB)	4	3	10	2
Oil fence (vessels)	29	20	44	34
Joint inspection	21	23	1	10



2023 Kaohsiung Port Dredging Ocean Dumping Self-propelled Dredger Emergency Response Drill

In addition to hotlines and emergency responses, the Kaohsiung Branch of TIPC also works to improve labor safety, Environmental education and training, in order to reduce the number of accidents in the Port area Joint exercises are conducted every year with other units related to port management The exercises focus on marine oil pollution, civilian protests, connected pathway flooding, typhoons, International Ship and Port Facility Security (The main collaborators of these exercises includes Kaohsiung Branch of TIPC,Kaohsiung Harbor Police Department, Kaohsiung Harbor Fire Brigade, National Fire Agency, MOI, Offshore Flotilla 5 Coast Guard Administration, Ocean Affairs Council, Southern Taiwan Service Center of MPB, MOTC, and Marine Bureau of Kaohsiung City Government The joint exercises aim to maintain port safety and security through inter agency collaboration.

Number of Accidents in Kaohsiung Port

Accidents/Year	2020	2021	2022	2023
Ship collision, fire, explosion, fuel spill,chemical spill	26	23	27	32
Ship breakdown, tilt (no affecting safety)	19	24	47	48
Safety and health accident cause injuries or deaths	5	4	5	5
Fire and/or explosion of warehouse or fuel tank	0	0	0	0
(Small) fuel spill, garbage and fire in the port area	130	118	101	113
Others	40	32	55	33

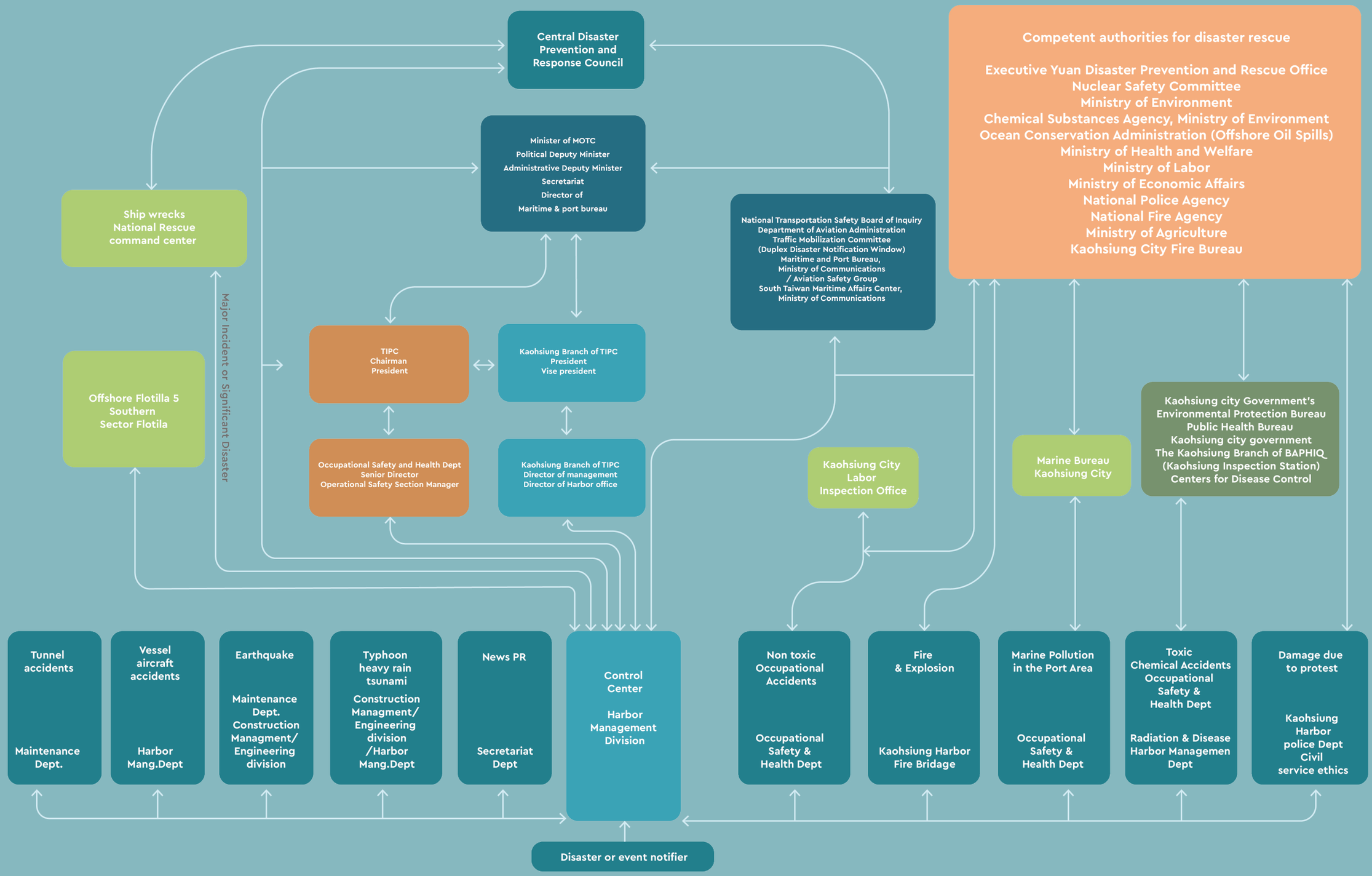
2023 Kaohsiung Port Cruise Terminal Drill in Cooperation with External Units

2023 Typhoon Operations and Disaster Response Exercise

2022 Participation of the Port Company in the "Kaohsiung City Toxic and Hazardous Chemical Substances Disaster Response Drill"

2022 Participation of the Port Company in the "Kaohsiung City Toxic and Hazardous Chemical Substances Disaster Response Drill"

Port of Kaohsiung Emergency Response



05

Innovation and Collaboration

5.1 Seventh Container Terminal Commencement

Strategies: Exemplifying, Enabling

Environmental Issues: Climate Change, Air Quality, Energy Efficiency, Port Development, Dust Emission, etc.

Attention/Motives

A fully automated and digitized business model is essential for the future transformation of advanced port operations. Therefore, the Kaohsiung Port Branch and Evergreen Marine Corporation have invested NT$40.95 billion to take the lead in this transformation. Keeping pace with the times and breaking away from traditional thinking, they have collaborated to establish the nation's first "fully automated container terminal" within less than five years. This initiative aims to create a superior and modernized operating environment, making the Seventh Container Terminal a demonstration base for industrial upgrades within the Taiwan Port Group. Concurrently, leveraging the opportunity provided by the Seventh Container Terminal, efforts to reallocate and adjust the container terminals within the Kaohsiung port area continue, maximizing the benefits of port resources, strengthening capabilities, consolidating Kaohsiung Port's position as a container hub, and enhancing the competitiveness of the Taiwan Port Group. This endeavor significantly adds value to Taiwan's economic development.

Solution

Kaohsiung Port's Seventh Container Terminal features five of the largest container berths in Taiwan, with a water depth of 18 meters and a total length of 2,415 meters. This terminal can accommodate four 24,000 TEU ultra-large container ships simultaneously. It integrates green environment, green design, green energy, smart building, and automation concepts. The terminal utilizes the nation's first 25-row remotely controlled unmanned gantry cranes, fully automated unmanned gate cranes, and intelligent access gates. It is equipped with an independent 5G system, fiber optics, and IoT networks, complemented by Evergreen Shipping Company's intelligent terminal operating system (TOS) and a real-time electricity monitoring system to coordinate port operations with artificial intelligence, making it a highly automated and intelligent container terminal.

The Seventh Container Terminal is a collaborative project between Taiwan International Ports Corporation and Evergreen Shipping, representing one of the most significant initiatives in Taiwan's shipping industry in recent years. Taiwan International Ports Corporation is responsible for the construction of quay walls and reclamation works, while Evergreen Shipping invests in the operational equipment, including gantry cranes, gate cranes, and container stackers. To meet the demands of the evolving international shipping industry and the trend towards larger vessels, the terminal is equipped with five berths, each 18 meters deep and 2,415 meters long, and features 16 remotely controlled gantry cranes that can handle ultra-large container ships up to 25 rows wide, significantly improving the efficiency of large vessel operations.

Pursuing corporate sustainability and implementing a green supply chain are core values of Evergreen Shipping. The Seventh Container Terminal incorporates various intelligent technologies and automated operations, aligning with global green energy trends. These include fully electrified vehicles, high-standard environmentally friendly engines for container stackers, automated check-in systems, and the development of the "Evergreen Container" platform, which integrates online check-in, operations, and payment systems. This platform enhances operational efficiency, reduces paper usage, minimizes vehicle travel, lowers fuel consumption and emissions, achieving energy savings and carbon reduction. Kaohsiung Port's Seventh Container Terminal is set to become Taiwan's first green terminal, embodying Evergreen Shipping's commitment to protecting the green earth from sea to land, from hardware to software.

Effect/Benefit

Aiming to establish an automated smart container terminal, Kaohsiung Port's Seventh Container Terminal is equipped with 24 gantry cranes, including 19 of the nation's first remotely controlled unmanned gantry cranes. The terminal also features 60 fully automated unmanned gantry cranes and 24 of Taiwan's largest automated container truck gates. It incorporates an independent 5G system, fiber optics, and an Internet of Things (IoT) network covering the entire area.

The terminal is integrated with Evergreen Shipping Company's self-developed intelligent terminal operating system (EMCTOS), optical character recognition (OCR) system, and a real-time electricity monitoring system, all leveraging artificial intelligence. Enhanced security is ensured through electronic access control, over 600 CCTV cameras for real-time monitoring, and an electronic pulse perimeter system. These advancements collectively improve operational efficiency and safeguard personnel and cargo, establishing Kaohsiung Port's Seventh Container Terminal as one of the world's most advanced container terminals.

Participating units

Kaohsiung Port Branch, Port Lessee
Shipping Operators

Port of Kaohsiung
Unit: Construction Section
Contact Person: Lin, Yu-Jen, Manager
Contact Phone: 07-562-2476
Fax: 07-532-2182
E-mail: T03161@twport.com.tw

5.2 Kaohsiung Port Cruise Terminal

Environmental Issues: Climate Change, Energy Efficiency, Energy Saving and Carbon Reduction, Port Development, Local Community Relations, etc.

Attention/Motives

To enhance the service quality for cruise passengers and shipping companies, the "Kaohsiung Port Passenger Area Construction Project" was initiated. Kaohsiung Port Company has chosen Piers 19 and 20 to construct a new travel and office building, which features the largest single metal curtain 3D curved surface structure in the country. This architectural design, inspired by the fluid dynamics of ocean waves, creates a new landmark at the maritime gateway of Kaohsiung.

The project aims to establish Kaohsiung Port as the cruise home port of Southern Taiwan, accommodating the world's largest 250,000-ton cruise ships. It will improve the quality of cruise travel services by upgrading current passenger facilities, providing a convenient and comfortable space for travelers. The influx of tourists will stimulate the development of surrounding land areas in Kaohsiung Port and city, promoting both national and local tourism industries.

Solutions

The "Kaohsiung Port Passenger Area Construction Project" involves an investment of approximately NT$45 billion, prioritizing the development of the travel and transport center at Piers 19 and 20. The overall design concept showcases the fluid dynamics of ocean waves, shaping a new landmark at the maritime gateway of Kaohsiung. This project adheres to green building standards for energy efficiency and sustainability.

In addition to providing waiting areas and passenger clearance facilities, the new center will include offices, dining, commercial spaces, and waterfront recreational areas. The project aims to actively promote the development of the cruise industry by integrating new 5G AIoT technology. It combines smart management, smart security, energy efficiency, sustainable practices, and agile office solutions.

Facilities will include intelligent reception and guidance systems, public broadcast systems, smart access control and visitor management, smart environmental control systems, smart parking, a management platform (BIMS), intelligent inspection systems, smart energy management systems, integrated energy applications and sustainability systems, and smart meeting rooms. The goal is to create a modern, intelligent travel hub that enhances passenger service quality, attracts innovative technology industries, and stimulates local economic development.

Effect/Benefits

The port aims to establish itself as a cruise homeport, accommodating ships up to 250,000 gross tons. It will provide 22 manual and 4 automated immigration counters, foreign currency exchange machines, tax refund kiosks, and two multilingual translation devices supporting Chinese, English, Japanese, and Korean for tourist assistance.

Duty-free services will be operated by Pengfang Corporation, meeting passenger shopping needs. Immigration clearance efficiency will reach 2,100 passengers per hour for homeport operations and 3,500 for port-of-call.

A 1,500-ping (4,950 m²) outdoor coastal platform on the third floor will offer scenic views, dining, and relaxation, creating a new waterfront attraction.

Participating Units

Kaohsiung Branch of TIPC

Stakeholders

Public

Port of Kaohsiung
Unit: Construction Section
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Contact Phone: 07-562-2259
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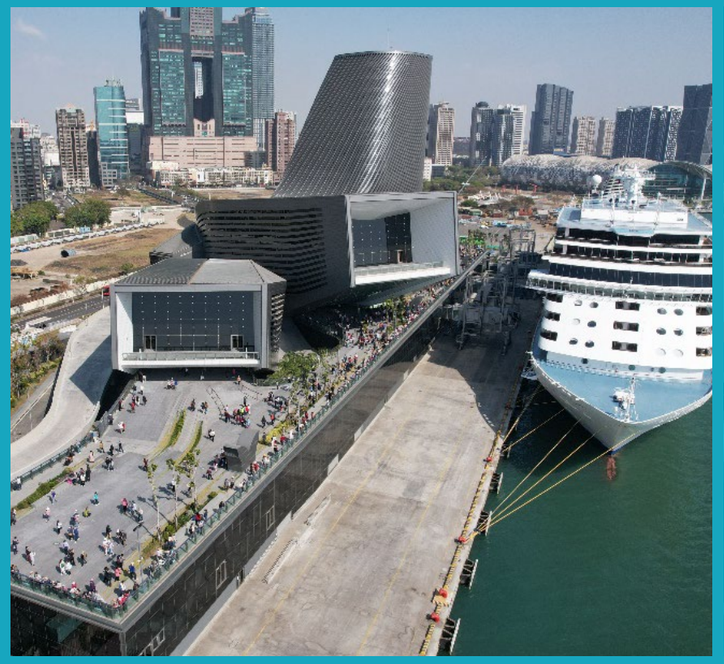
E-mail: T02629@twport.com.tw



5.3 Cooperation

The Kaohsiung Branch of TIPC has been very active in collaborating with the private sector, public sector and academia in Taiwan and abroad on issues related to the environment. In addition to understanding environmental development trends in the international arena, the Port of Kaohsiung also works to achieve the goal of becoming a sustainable green port through technological cooperation,joint venture, joint investigation and seminars.

Association

Association of Pacific Ports(APP)

The APP is aimed to gather the authorities of ports along the Pacific coast to discuss the development of Pacific marine transportation, seek solutions for problems. The Kaohsiung Branch regularly attends APP conferences and served as the organizer in 2015, adopting the theme of "Ecology, LOHAS, and Greening in the Port of Kaohsiung" to exchange innovative technology, knowledge, and professional management experiences with other members.

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Terminal operators

Kao Ming Container Terminal Corp. (KMCT)

Kaohsiung Branch of TIPC and KMCT collaborated through BOT to invest in the first world class green terminal in Terminal No. 6 of Kaohsiung Port, to offering highquality and highly efficient service with the principle of safety, efficiency, and energy saving .

Yes Logistics Corp.

The Kaohsiung Branch of TIPC cooperated with Yes Logistics in 2013 to install a solar photovoltaic system on the rooftop of the warehouse(KLC2). The system can generate 411.72kWp of electricity.

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Cooperation

South Star Free Trade Port Zone (SSFT)

will be the hinterland for the Kaohsiung Free Trade Port Zone in the future. The existing windbreak forest within the Zone will be kept. An insulation green belt will be added around the Zone with multi-layered **endemic vegetation. The administrative center and other public buildings (such as transforming substation and checkpoint) will all be green buildings**

Kaohsiung Port Land Development Company

The branch facilitates the cooperation between the Port of Kaohsiung and Kaohsiung City Government, adaptively reuses old land and buildings, and **integrates the resources and strengths of the port and the city to improve local economic development.**

National Sun Yat-sen University

NSYSU signs a memorandum of cooperation with the TIPC to cooperate in terms of personnel training, student inter**nships, and the management of seminars and lectures.**

Port

APEC-Antwerp/ Flanders Port Training Center

The Port of Kaohsiung signed a letter of intent with the Antwerp/ Flanders Port Training Center to provide various portoperation-related courses on engineering, wharf management,logistics, and docker training.

Port of Gdansk Authority

The Port of Kaohsiung signed a sister port agreement with the Port of Gdansk to facilitate mutual operational deve**lopment and exchanges in port management and technologies.**

Shanghai International Port (Group) Co. Ltd.

With an aim to improve the level of port engineering technology,the Port of Gdansk and the Port of Kaohsiung actively engage in exchanges **regarding equipment maintenance, energy conservation and environmental protection, and the application of new technologies.**

Public sector

Institute of Transportation(IOT), 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 The Kaohsiung Branch of TIPC has collaborated with the Harbor and Marine Technology Center of the institute in multiple projects regarding topics such as the establishment of green ports, innovative container management, and port operation strategies.

Marine Bureau, Kaohsiung City Government

Kaohsiung Branch of TIPC works with the Marine Bureau of Kaohsiung City Government, and forms an ocean protection alliance with 30 entities from private sector, public sector, academia and the military to cooperate in controlling port pollution and sharing marine environmental monitoring data and information to achieve the goal ofmarine pollution control.

Bureau of Cultural Affairs, Kaohsiung City Government

The Kaohsiung Branch of TIPC has signed a contract with the Bureau of Cultural Affairs Kaohsiung City Government, to provide some of its warehouses for art exhibition, and to promote the cultural and creative industry with the BCA Functions of the warehouses near The Pier 2 Art Center have changed accordingly.

Ministry of Economic Affairs, Executive Yuan

The Kaohsiung Branch of TIPC works with the Export Processing Zone Administration of the Ministry of Economic Affairs in Kaohsiung, South Taiwan Maritime Affairs Center, and Kaohsiung EPB monthly to conduct joint inspections of the public bulk cargo dock of Zhongdao Commercial Port to prevent pollution in the Port area.

East Maritime Affairs Center of MPB, MOTC

The South Taiwan Maritime Affairs Center of the MPB under the MOTC is in charge of the affairs related to port security, disaster relief, and pollution control in the Port of Kaohsiung, as well as the implementation of laws and regulations, gathering of evidence, and penalty consideration The Kaohsiung Branch of TIPC cooperates with the South Taiwan Maritime Affairs Center to conduct land water inspection in the port.

Ocean Affairs Council

Co implementation of operations related to ocean environment protection, biodiversity conservation, and pollution prevention For example, radar monitoring and the handling of stray events in the young killer whales, Marine pollution aspects are all cooperating.

Ministry of Environment, Executive Yuan

Ministry of Environment of the Executive Yuan and the USEPA cooperate according to an "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 The agreement also covers a series of cooperation strategies for the port environment, so American experts are regularly invited to Taiwan for seminars, offering technical assistance and sharing information (such as regional partnership for "Port Air Quality Improvement Strategies and US Taiwan Sustainability Forum").

Environmental groups

Environmental Protection Bureau, Kaohsiung City Government

Kaohsiung Port Branch collaborates diligently with the Kaohsiung City Environmental Protection Bureau to improve air quality in the port area. Initiatives include establishing air quality maintenance zones within the port, promoting the application of self-management labels for construction machinery by port operators, regularly conducting diesel vehicle emission testing, and organizing joint inspections of fugitive bulk cargo and the port environment.

Kaohsiung Wild Bird Society

The Kaohsiung Branch of TIPC consulted ecological protection in SSFT Port Zone with the Kaohsiung Wild Bird Society Existing habitats will be kept and a multi layered microhabitat environment will be created for migratory birds and birds of passage Members from Kaohsiung Wild Bird Society are invited to lecture our staff about ecology in the SSFT Port Zone.

06

Training and Communication

6.1 Training

Kaohsiung Port Branch provides appropriate environmental education and training in accordance with the content of the environmental policy statement. In addition to cultivating employees' environmental awareness and enhancing their environmental protection knowledge, it can also enhance the competitiveness of Kaohsiung Port. In 2011, the "Environmental Education Law" was promulgated and implemented, public institutions and other related units should formulate an environmental education plan every year, and each employee should participate in environmental education for more than four hours. Kaohsiung Port Branch will hold a total of about 30 environmental education and training activities for internal and external personnel in 2022 and 2023, with about 1,269 participants. The courses include green ports, marine education, ecological education, natural disasters, fire protection propaganda, sustainable development and other aspects.

2022–2023 Environmental Education Statistics

Item	Date	Course Activity	Number of Participants
1	2022/6/2,12/15	2022 Self-Defense Firefighting Training	104
2	2022/7/20–21	Clean Air & Human and Earth Health Sustainable Forum	61
3	2022/8/15–17,09/7,12	Exploring ESG Sustainability and Voluntary Emission Reduction Workshop	83
4	2022/9/26	2022 Environmental Education Promotion Course	17
5	2022/9/29	"Climbing the Peaks" Mountaineering Training Course	44
6	2022/10/25	"Reading and Dancing with the Mountains" Mountaineering Walk	50
7	2022/11/8	"Good Books for Peak Climbing" Health Promotion Walk	52
8	2022/11/30	2022 Natural Disaster Education Lecture	6
9	2022/12/9	Nanxing Free Trade Port Zone Ecological Conservation Education Training	5
10	2022/12/16,30	2023 Training Course for Personnel Related to Kaohsiung Port Dredged Material Ocean Disposal Operations - (1) Current Status of Marine Waste and Microplastic Pollution (2) Research on the Recycling of Dredged Material in the Port Area	20
11	2023/3/23,31,04/28,7/10,9/22	Together Climbing Course	224
12	2023/3/20	Introduction to Child Development and Environmental Education Lesson Plan Design Course	20
13	2023/3/27	Environmental Education Lesson Plan Teaching Demonstration	18
14	2023/4/10	Environmental Education Lesson Plan Design and Optimization	15
15	2023/4/29	"Wandering Half-Screen Mountain to Enjoy Birdwatching" Parent-Child Activity	12
16	2023/5/4	"Reducing Carbon Footprint and Breathing Fresh Air" One-Day Volunteering Activity	5
17	2023/5/18	2023 "Flowering North Shoushan" Parent-Child Activity	37
18	2023/6/8,9	2023 World Oceans Day Forum	27
19	2023/6/17,12/15	2023 Self-Defense Firefighting Training	110
20	2023/7/10	2023 Natural Disaster Education Training	9
21	2023/8/4	Benchmark Learning at Keelung Port Environmental Education Park – "Oil Black Turnaround"	5
22	2023/8/7	Benchmark Learning at Taichung Port Environmental Education Center – "Talking About Taichung Port"	4
23	2023/8/15	Benchmark Learning at Shoushan National Natural Environment Education Field – "Introduction to Geological Environment"	4
24	2023/8/29,10/24	Outdoor Rock Climbing – Mountaineering Training Course	47
25	2023/9/19	"Good Partners, Clean Beaches Together" Activity	68
26	2023/9/20	Secret Ocean – Water Training Course	46
27	2023/9/21,23	Sustainable Future SDGs Joyful Living – (1) "Healthy Mobility and Clean Beach" Activity (2) Health + 1 Wind-Chasing Journey	46
28	2023/10/19	2023 "Budai Port Environmental Impact Assessment Education Training"	8
29	2023/11/17,29,12/5,7	Big Hand Pulls Small Hand, Health 1+1 – (1) Green Port Cycling – Bicycle (2) Water Young World (SUP/Kayak)	102
30	2023/12/22,29	2023 Training Course for Personnel Related to Kaohsiung Port Dredged Material Ocean Disposal Operations	20
		Total	1269

ESG Sustainability and Voluntary Emission Reduction Workshop (August 16, 2022)

Kaohsiung Port Authority and Taiwan Port Association Jointly Organized the "Voluntary Carbon Reduction World Café" – Planning the "Green and Sustainable Port Companion" Theme (March 10, 2023)


Natural Disaster Education Lecture (November 30, 2022)


"Eliminating Unconscious Gender Bias to Implement the Spirit of CEDAW" Gender Mainstreaming Course (May 17, 2023)


"Carbon Reduction Breathing" Port Area Green Beautification Tree Planting Volunteer Activity (May 4, 2023)


Art and Technology Innovation Course (September 17, 2022)

6.2 Communication and promotion activities

By organizing and participating in forums, summits, symposia and other activities, Kaohsiung Port Branch communicates and initiates dialogue with the outside world. We look forward to working together to create a new environment for sustainable development.

2022/7/20~21 Clean Air & Human and Earth Health Sustainability Forum


2023/6/8~9 World Ocean Day Forum

In order to implement environmental policies, Kaohsiung Port Authority has established a comprehensive environmental management system. Through organizing various activities such as Family Day, second-hand markets, plant adoption, beach cleanups, and parent-child reading tours, the Authority promotes the concept of environmental sustainability among port employees and the public. By taking practical actions together, they aim to protect the Earth, reduce carbon emissions, and create a sustainable environment.

2023/05/18 "Blooming at Shoushan" Parent-Child Activity


2022/09/20 Kaohsiung Port held the "SDGs New Milestone Kick-off" event to declare the implementation of the "2030 United Nations Sustainable Development Goals."

2023/09/23 "Sustainable Future SDGs Fun Ride – Health +1 Wind Chasing Tour" Cycling Activity


2022/07/01 "Carbon Reduction and Green Enhancement Fun Farm" Plant Adoption Activity

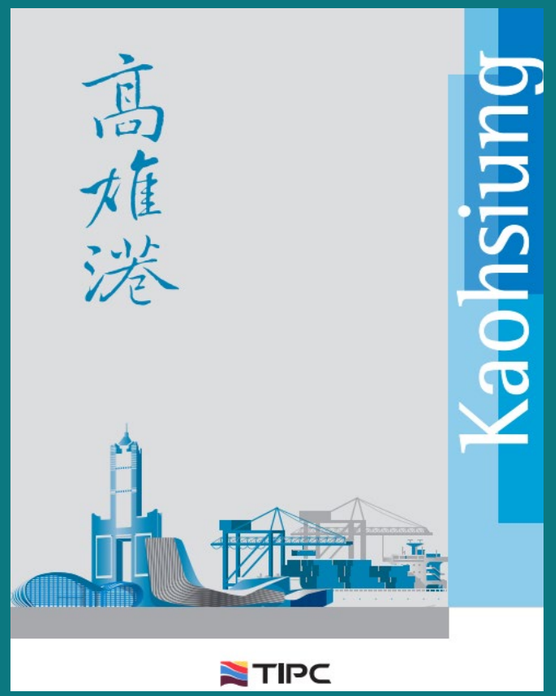
6.3 Communication with internal and external stakeholders

Through the official website, Kaohsiung Port Branch will disclose the relevant information of Kaohsiung Port, including: environmental reports, literature and publicity products, various business activities, dynamic information, investment information, application work,

Taiwan Port Group e-News

Facebook

Website



Publications

Environmental report

07

Green Accounting

7.1 Environmental Resource Allocation

The costs that have been invested by the Kaohsiung Branch of TIPC in the environmental aspects are mainly divided into the categories of staff, environmental maintenance and management, environmental monitoring, and emergency responses and communication. The purpose of these investments is to improve the environmental awareness among staff, environmental maintenance, environmental quality, emergency response abilities, and public understanding of the port. The total costs invested by Kaohsiung Port Branch in environmental issues were NT$121,126 thousand in 2022 and NT$381,032 thousand in 2023.

- Employees: Personnel costs of environmental control, and environmental educationand training
- Environmental maintenance and management: Port green landscaping, waste disposal and dredging
- Environmental Monitoring: Monitoring the air, noise, water, sediment, dredging as well as environmental patrol
- Emergency Response: The costs of accident management, laboratory test fees for materials and dangerous goods that pollute the Port, and so on
- Communication and Publications: Website maintenance, promotional activities and environmental publications

Costs invested by the Investments of the Kaohsiung Branch of TIPC in the Environmental Aspects in 2020 and 2023 (Thousand NTD)

Item/Year	2020	2021	2022	2023
Staff	48,231	47,390	46,788	45,304
Environmental maintenance and management	25,945	26,730	29,975	36,925
Environmental monitoring	28,435	34,453	40,204	40,555
Emergency response	1,044	1,444	1,569	256,265
Communication and publication	1,180	3,293	2,590	1,983
Total	104,835	113,310	121,126	381,032

7.2 Assets Invested in Environmental Protection

To develop the Port of Kaohsiung into a transshipment hub in the Asia-Pacific region, a transshipment port providing comprehensive logistics services, and an eco-friendly port, the Kaohsiung Branch of TIPC has launched a series of port development projects (Project planning and building and equipment planning) and projects for general buildings and equipment. A portion of these projects are concerned with environmental aspects. For example, new buildings tend to be built green to facilitate public access; terminals are reconstructed and equipped with shore power systems, and old vessels and vehicles are replaced to enhance project implementation effectiveness and reduce pollution emissions. The Kaohsiung Branch of TIPC invested in fixed assets for approximately NT$ 3,887,612,000 (approximately €112,740,748) and approximately NT$ 6,112,529,000 (approximately €177,263,341) in 2022 and 2023.

Assets invested by the Kaohsiung Branch of TIPC in the environmental aspects in 2022 (Thousand NTD)

Item / Fixed assets		Improvement on land	Buildings	Machinery and equipment	Transportation Facilities	Miscellaneous equipment	Total
Project	Continuation Project	2,019,232	1,491,164	46,091	-	-	3,556,487
General building and Equipment plan		96,329	150,932	24,663	53,071	6,130	331,125
Total		2,115,561	1,642,096	70,754	53,071	6,130	3,887,612

Assets invested by the Kaohsiung Branch of TIPC in the environmental aspects in 2023 (Thousand NTD)

Item / Fixed assets		Improvement on land	Buildings	Machinery and equipment	Transportation Facilities	Miscellaneous equipment	Total
Project	Continuation Project	**3,784,407**	**1,321,053**	**488,048**	**-**	**-**	**5,593,508**
General building and Equipment plan		**149,754**	**164,033**	**55,080**	**133,572**	**16,582**	**519,021**
Total		**3,934,161**	**1,485,086**	**543,128**	**133,572**	**16,582**	**6,112,529**

8

Improvement Recommendations

Kaohsiung Port has promoted the Taiwan Port Cluster's Green Port Action Plan and EcoPort certification, establishing an environmental management mechanism in line with international and domestic regulations. The port regularly reviews environmental policies and objectives, implementing measures to improve quality and achieve sustainable development goals.

Recent initiatives include expanding shore power use, reducing vessel speed, using low-sulfur fuel, controlling emissions from fixed sources, and reducing emissions from port machinery. The port has also established an "Air Quality Maintenance Zone," optimized the automated sentry system, and built an intelligent traffic network to create a low-pollution environment.

To strengthen development, the Port Authority is advancing the "Future Development and Construction Plan for International Commercial Ports," including infrastructure enhancements and environmental optimizations. The new Intercontinental Container Center Phase II features a container terminal, petrochemical terminal, and bulk cargo terminal, with the Seventh Container Center, Taiwan's first automated terminal, starting operations in May 2023.

Efforts to enhance cruise passenger services include the opening of the "Kaohsiung Port Cruise Terminal" in 2023 and revitalizing waterfront spaces for tourism and commercial development. The Port Authority is also promoting ESG initiatives and the "United Nations 2030 Sustainable Development Goals (SDGs)" to achieve sustainable port development and set a new standard for modern, intelligent ports in Taiwan.

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

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