121°44'22.5" E, 25°09'26.5" N

PORT OF KEELUNG

ENVIRONMENTAL REPORT

TAIWAN INTERNATIONAL PORTS CORPORATION, LTD.

TIPC

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Environmental Policy

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.

Hsien-Yi Lee

Hsien-Yi Lee
Chairman of TIPC
Date: 2020 / 03 / 26

Shao-Liang Chen

Shao-Liang Chen
President of TIPC
Date: 2020 / 03 / 26

Port of Keelung, TIPC
Environmental Policy

Environmental Policies
Port of Keelung
(Including Keelung Port, Taipei Port, Suao Port)

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

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

We commit to:

- **Regularly evaluate port environmental impacts and any pollution generated from port operation.**
- **Set environmental objectives to continuously lower environment impacts.**
- **Comply with all relevant environmental regulations and aim at pollution prevention.**
- **Promote environmental education to raise employee awareness and implement environmental policies.**
- **Actively communicate and collaborate with external parties to establish partnerships for achieving sustainable development of the port.**

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

President of Port of Keelung, TIPC Kao, Chwan-Lai

Date 2023 / 08 / 10

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

Port of Keelung
Environmental Objectives

Environmental Objectives
Port of Keelung

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

Improve air quality
Continuously monitor air quality, strengthen environmental inspections, and identify sources of pollution.

Strengthen management of hazardous cargo in the port area
Implement operational and cargo management measures in docks and warehouses, and enhance emergency response mechanisms.

Reduce ship exhaust emissions
Promote ship slowdown and use of low-sulfur fuel, and continuously promote shore power facilities.

Reduce fugitive dust in the port area
Continuously perform road washing and cleaning operations, strengthen air pollution prevention and control measures in the work area, and effectively control fugitive dust.

Reduce vehicle pollution in the port area
Improve loading and unloading efficiency, implement autonomous management of government vehicles, and promote electrification of government vehicles.

Promote port development
Strengthen water and land development in the port, and provide friendly waterfront recreational spaces.

Reduce port waste
Properly handle port waste and implement resource recycling.

Mitigate climate change
Conduct greenhouse gas inventory operations every year to reduce resource consumption and carbon emissions.

Maintain port water quality
Continuously monitor water quality in the port area, maintain water quality and ecological environment in the port area waters.

Reduce operational noise in the port area
Continuously monitor noise in the port area, and improve noise control measures in the port area.

The President, Port of Keelung, TIPC is responsible for the implementation, maintenance and communication of the environmental objectives. To fulfill commitments, the objectives and corresponding action plans are reviewed and adjusted to the condition of the Port.

President of Port of Keelung, TIPC Kao, Chwan-Lai

Date 2023 / 08 / 10

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

01

Message from Port of Keelung

In the face of global climate change challenges, ports worldwide are prioritizing "green" and "sustainable" objectives. The Taiwan International Ports Corporation's Keelung Branch, overseeing Keelung Port, Taipei Port, and Suao Port, is a shining example of this forward-thinking approach. Since 2013, they have proactively championed the Green Ports Initiative for the Taiwan Port Group, underscoring a commitment to environmental stewardship and corporate responsibility. This initiative not only reinforces the synergy between ports and urban development but also enhances the company's environmental management capabilities, incrementally elevating the overall quality of the port environment.

Port of Keelung, strategically positioned as a central hub for short-sea shipping routes, cross-strait passenger and cargo ships, international cruises, and an Asia-Pacific logistics nexus, epitomizes the harmonious blend of economic progression and environmental mindfulness. The port's management, while ensuring economic growth, is fervently dedicated to "Green Port" practices. They view environmental planning, pollution control, and fostering community relations as cornerstones of sustainable growth. This commitment extends to reducing the environmental footprint of port operations and cultivating mutual respect and collaboration between the port and its surrounding city. With eyes set on global benchmarks, the port is actively engaged in the Ecoports certification renewal process, embodying its aspirations for a globally connected, environmentally friendly, and community-centric port.

Kao Chwan Kai

President of Port of Keelung
Taiwan International Ports Corporation, Ltd

02

Port Profile

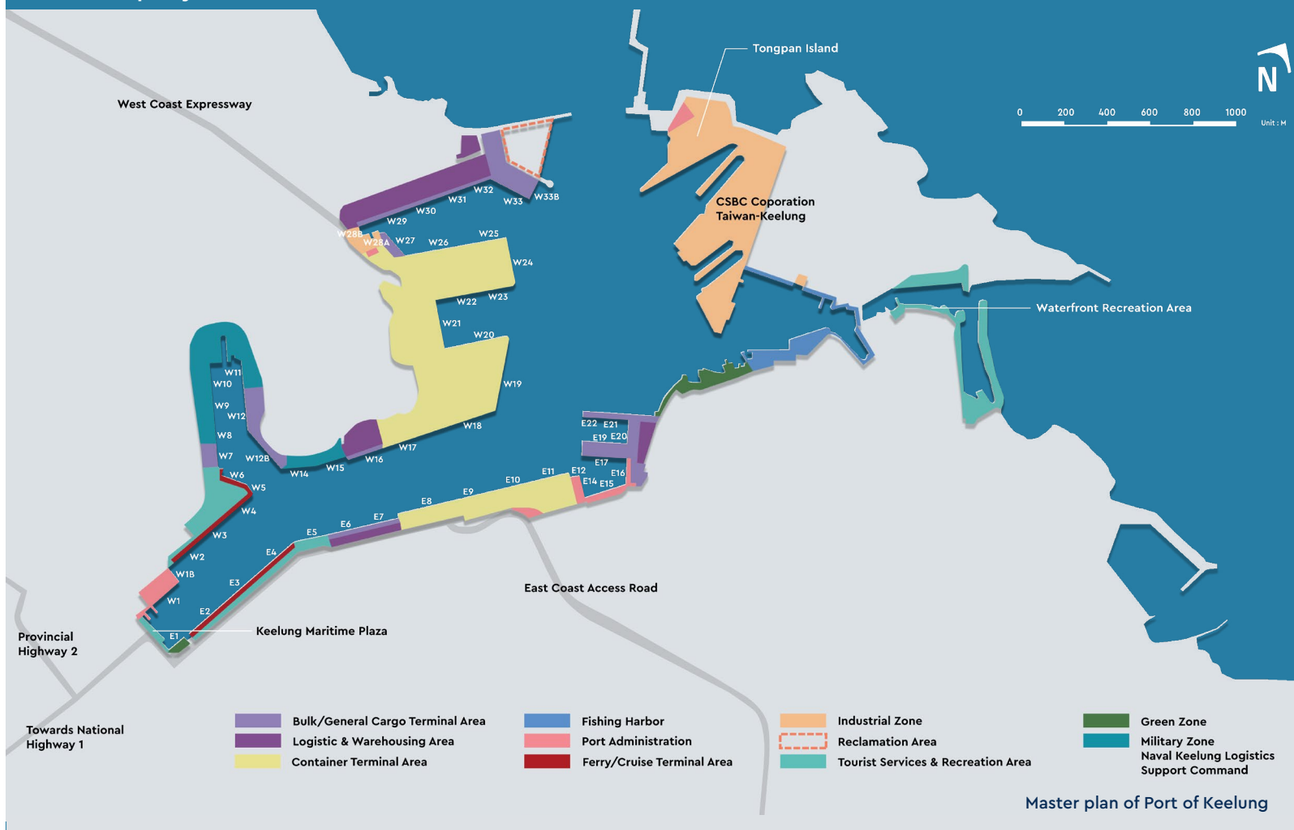
2.1 Port Location and Port Area

Port of Keelung is the top maritime gateway of Northern Taiwan. Located on the northeastern tip of Taiwan (Longitude: 121°44'22.5" E, Latitude: 25°09'26.5" N), The total area of the port area is 570 hectares, the single-opening port covers 190 hectares of land territory and 380 hectares of waterway. The water depth varies between -15 and -20 meters with the tide contributing to a maximum 0.73 m of difference. A natural, landform harbor with a shoreline characterized by pebble beaches, rocky shores and artificial seawalls, Port of Keelung benefits significantly from its sheltered water and strategic locale and the presence of crtical industries (e.g. CSBC Keelung Shipyard, TPC Hsieh-ho Power Station). The proximity to the city of Keelung and recreational facilities is also noted as an advantage, as a readily available labor force is essential to the operation of the port.

Geographical Map of Keelung Port

2.2 Legal Status and Port Operators

To advance the modernization and reform of our commercial port management system, Taiwan embarked on a new course in March 2012, adopting a "separation of government and enterprise" approach. This pivotal transition saw the original Harbor Bureau metamorphose from a governmental entity into the Taiwan International Ports Corporation. Ever since its establishment, the corporation has carved out three core strategic pillars: "Enhancing Core Operations," "Capturing Free Trade Opportunities," and "Developing Metropolitan Waterfronts." In a relentless pursuit to elevate operational efficiency, fulfill corporate social responsibility, and stride towards sustainable growth, the company introduced the "Green Ports Initiative for the Taiwan Port Group" in 2013. With the endorsement of the Ministry of Transportation, this initiative meticulously addresses four primary facets of port operations: passenger services, cargo logistics, port environment, and urban/community outreach. By laying down a structured roadmap spanning short to long-term objectives, the corporation ardently drives the push for international Ecoports certifications. This dedication not only manifests a robust commitment to environmental stewardship but also cements its stature as a beacon of green and sustainable port management.



Master plan of Port of Keelung

2.3 Commercial Activities

The Keelung Port currently boasts a total of 56 berths, with 20 located on the eastern side and 36 on the western side. Out of these, 41 berths are operational, while the remaining 15 serve other functions. In terms of the type of operations at these berths, there are 14 container berths, 21 general cargo berths, and 6 passenger berths. Over recent years, the port has been evolving with a dual focus on both cargo and passenger operations. The outer port is predominantly centered around short-sea container routes. The maritime functions encompass short-sea container routes, cross-strait passenger and cargo vessel operations, logistics distribution centers for the Asia-Pacific region, and container storage and transportation. Bulk cargo operations mainly revolve around the handling of gravel, petroleum, cement, steel hardware, and vehicle loading and unloading.

Main Commercial Activities and Cargoes in Keelung Port

Commercial activities	
Aggregates (sand and gravel)	Building and Repair
Cruise industry/ Ferry services	General Manufacturing
Cargo stevedoring	
Dry bulk cargo	Perishable Goods
Trade Cars/ Vehicles	General Cargo
Petroleum/ Oil Products	Ro-Ro

2.4 Main Cargoes

In 2021 and 2022, the primary imports at Keelung Port were mineral products, base metals and their products, as well as chemical or related industrial products. The main exports were plastics and rubber and their products, chemical or related industrial products, and machinery, electrical power, and electronic products and their related goods.

2021–2022 Main Import/Export Cargoes of Port of Keelung

Type	Main Import Cargoes			Main Export Cargoes		
	Mineral Products	Base Metals and Articles of Base Metal	Products of the Chemical or Allied Industries	Plastic and Rubber Products	Chemical and Industrial Products	Machinery, Electrical appliances and their products
2021	1,665,808	1,399,235	1,011,756	915,694	671,748	377,999
2022	1,183,886	1,395,341	968,695	763,147	631,474	347,041

2.5 Port Business

Service Category		2021	2022	Difference between 2021 and 2022	
				Amount	%
Incoming and Outgoing Ships	Vessels	9,818	9,698	-120	-1.22
	Gross ton	140,896,393	138,026,050	-2,870,343	-2.04
Volume of Cargo Handled	International Cargo((Revenue ton)	57,647,331	58,411,881	764,550	1.33
	Dry bulk and groceries (Revenue ton)	4,212,197	3,600,735	-611,462	-14.52
	Pipeline cargo (Revenue ton)	3,605,243	3,651,943	46,700	1.30
	Total (Revenue ton)	65,464,771	65,664,559	199,788	0.30
Volume of Cargo Handled (International)	Imports (ton)	854,590	854,751	161	0.02
	Exports (ton)	746,8015	767,955	21,154	2.83
	Total(ton)	1,601,392	1,622,707	21315	1.33
Volume of Imports & Exports	International line (number)	11,356,011	10,563,420	-792,591	-6.98
	Domestic line (number)	5,231,182	5,134,821	-96,361	-1.84
	Total(number)	16,587,193	15,698,241	-888,952	-5.36
Incoming and Outgoing Passenger	Number of passengers on domestic routes (Person times)	69,264	82,088	12,824	18.51
	Number of passengers on international routes (Person times)	68,346	487	-67,859	-99.29
	Total number of passengers (passenger times)	137,610	82,575	-55,035	-39.99

Source: Annual Statistical Report, TIPC, 2021–2022

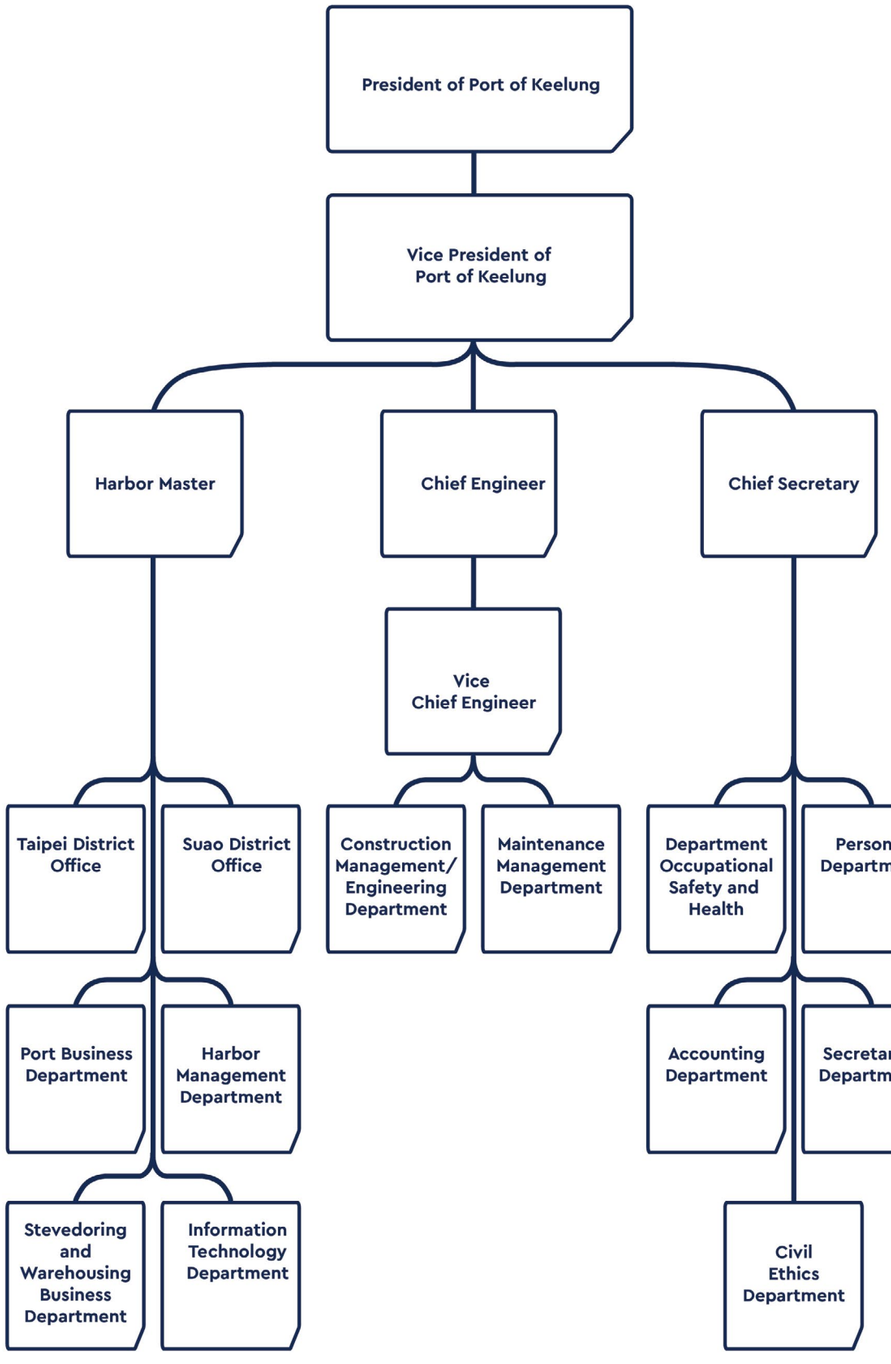
03

Environmental Management

3.1 Organizational Structure

According to Commercial Port Law regulations, the Port of Keelung, TIPC and the North Taiwan Maritime Affairs Center is responsible for environmental management in the Keelung commercial port area. Port of Keelung, TIPC is responsible for environmental issues in management and operations while the North Taiwan Maritime Affairs Center shall handle environmental issues that involve public authority. Ministry of Environment and the Marine Conservation Division of the Ocean Conservation Administration under the Ocean Affairs Council and the Environmental Protection Bureau of Keelung City shall manage stevedoring and neighboring municipal areas, and monitor and supervise the environment. The Port of Keelung, TIPC has 13 internal departments, functions of the divisions of the Port of Keelung as follow:

Department	Description
Secretariat Department	Property, cashier, public relationship affairs and document management of the branch
Construction Management / Engineering Department	Port planning, design, construction, supervision and contracting out
Harbor Management Department	Port safety management and port affairs management
Stevedoring and Warehousing Business Department	Tourist services and private store operation
Port Business Department	Attraction of local investments, implementation of port functions, and creation of benefit
Accounting Department	Budget review and management of income and expenditures
Information Technology Department	Development and maintenance of IT systems and equipment
Personnel Department	Company human resource management
Maintenance Management Department	Civil/electrical engineering, harbor construction and electrical maintenance/management
Occupational Safety and Health Department	Port area environmental protection, pollution prevention and control, occupational safety and health management.
Civil Service Ethics Department	Enforcement of ethics and investigation
Taipei Port Branch Office of Keelung Port, TIPC	Taipei port operation and management
Suao Port Branch Office of Keelung Port, TIPC	Suao port operation and management



Organization Chart of the Port of Keelung, TIPC

3.2 Environmental regulations

The Keelung Port 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, International Convention on the Control of Harmful Anti-fouling Systems on Ships etc. In addition to the international environmental specifications and conventions, the Keelung Port collaborates with local authorities in compliance with relevant environmental laws and regulations in Taiwan.

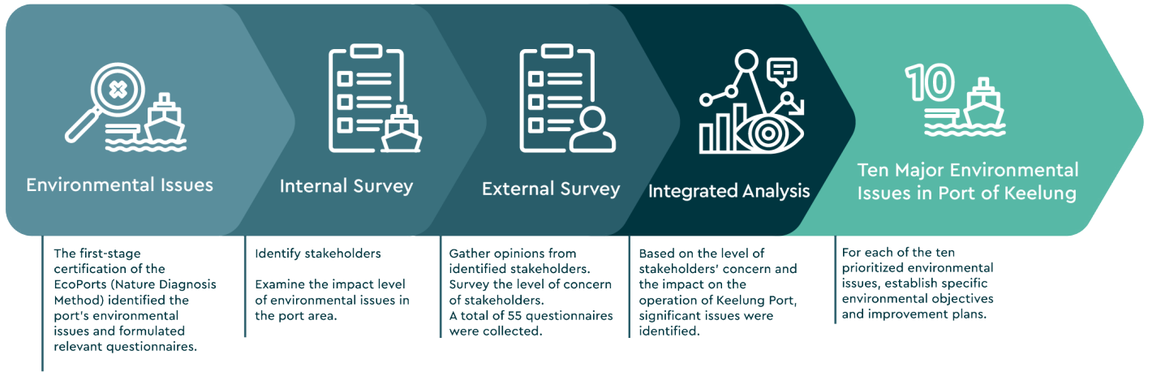
Conventions	Objective	Corresponding to the domestic legislation
International Convention for the Prevention of Pollution From Ships(MARPOL73/78)	Prevent pollution from ships	The Law Of Ships(article 101) The Commercial Port Law(article 75) No. 10150137211, 10150138211, 10150138451, 10250048611, and 10798000011 Administrative Law of the Ministry of Transportation and Communications
London Dumping Convention	Regulate marine dumping	Marine Pollution Control Act(article 20, 25) Regulations Governing Permission and Management of Marine Disposal
International Convention on the Control of Harmful Anti-fouling Systems on Ships	Terminate the use of toxic hull paint	Prohibition of the use of tributyltin oxide in manufacturing marine antifouling paint, specified in the "List of Prohibited Toxic Chemical Substances" of the Toxic Chemical Substances Control Act
International Convention for the Control and Management of Ships' Ballast Water and Sediments	Prevent the invasion of alien species along with ballast water, and protect marine ecology and biodiversity	Regulations on Equipment of Ships (article 174, 215, 216) International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004" issued by the Ministry of Transportation and Communications "Prohibition of Ballast Water Exchange in the Territorial Waters of R.O.C. and Related Pollution Control Measures" announced by the Environmental Protection Administration

Department	Laws Title		Central Competent Authority	Local Law Enforcement Agencies
Sectors in the Ministry of transportation and communications	The Commercial Port Law	2021/04/28	Ministry of Transportation and Communications	North Maritime Affairs Center, Maritime and Port Bureau, MOTC
	The Law of Ships	2018/11/28		
	Shipping Act	2014/01/22		
	Act for the Establishment and Management of Free trade zones	2019/01/16		
Sectors related to agricultural	Wildlife Conservation Act	2013/01/23	Council of Agriculture	Department of Economic Affairs (Keelung City)
Sectors in the Ministry of the Interior	Fire Services Act	2022/05/11	Ministry of the Interior	Keelung City Fire Department
				Keelung Harbor Fire Brigade
	Police Act	2002/06/12	Ministry of the Interior, National Police Agency	Keelung Port Police Brigade
Sectors related to environmental protection	Marine Pollution Control Act	2014/06/04	Ocean Affairs Council	Ocean Conservation Administration
	Basic Environment Act	2002/12/11	Ministry of Environment	Environmental Protection Bureau (Keelung City)
	Air Pollution Control Act	2018/08/01		
	Water Pollution Control Act	2018/06/13		
	Waste Disposal Act	2017/06/14		
	Environmental Impact Assessment Act	2003/01/08		
	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		
	Resource Recycling Act	2009/01/21		
	Climate Change Response Act	2023/02/15		
	Public Nuisance Dispute Mediation Act	2009/06/17		
Intersectoral Protection	Disaster Prevention and Protection Act	2022/06/15	Ministry of the Interior	Keelung City Government

3.3 Analysis of major environmental issues

To gain a comprehensive understanding of the thoughts of stakeholders and in response to the updated eco-port certification, Keelung Port has conducted surveys to establish the primary communication targets. This includes gathering opinions from employees, government bodies, customers, and the community. This serves as a foundation for subsequent investigations into the level of concern among stakeholders. The results of the importance of this investigation are presented in the table below.

Stakeholders	Number of Surveys	Percentage
Central or Local Government	7	17%
Employees (Colleagues)	23	56%
Suppliers or Contractors	5	12%
Customers or Traders	4	10%
Community or Local Groups	2	5%
Total	41	100%



Keelung Port

Environmental Issues

Top 10

1. Air quality

Indicator

-Qualification rate of air quality indices: suspended particulate matter (PM_{10} and $PM_{2.5}$), SO_2, NO_2 and O_3

-Replacing old devices with energy-saving devices

2. Cargo Spillage/ Dangerous Goods Management

Indicator

-Number of Port Patrols, Cargo Leakage Emergency Response Drills, and Joint Safety Supervisions in the Port Area

3. Reducing Ship Exhaust Ggas Emissions

Indicator

-Proportion of harbor service vessels using low-pollution fuel (including fuels with a sulfur content of 0.5% or below)
-Vessel speed restriction policy
-Ships deceleration target completion rate
-Ratio of service vessels using shore power

4. Dust

Indicator

-Frequency of street washer dispatches and water sprayers facilities inspection
-Gravel and Stone Loading and Unloading Vehicle Cleaning Ratio
-Water Consumption of the Sprinkling Equipment at the Gravel and Stone Unloading Pier

5. Vehicle Exhaust Emissions

Indicator

-Compliance rate for smoke emission tests of large diesel vehicles from Phases 1 to 3 transiting the Keelung Port area

6. Port development

Indicator

-Dredging and filling operations in the waters of Keelung Port

7. Waste/Port Waste Management

Indicator

-Port Area Terrestrial Waste Collection Volume and Recycling Rate

-Ship Waste Collection Efficiency Rate

8. Climate Change

Indicator

-Greenhouse Gas Inventory

-Solar Panel Installation and Generation

-Green Building

9. Water Quality

Indicator

-Water Quality Compliance Rate

-Number of Days the Cleaning Boat is Operational and the Amount of Floating Trash Removed

-Oily Water Reception and Treatment Rate

10. Noise

Indicator

-Daily qualification rate for harbor noise quality

Stakeholders

The Port of Keelung values its stakeholders and engages with them through various channels to gather their concerns. These concerns are then considered and integrated into the company's operational and environmental management strategies. The Port of Keelung firmly believes that only by establishing smooth and effective communication with stakeholders can it stay attuned to the pulse of changing times, maintain its competitiveness, and achieve a green and sustainable port ecosystem.

Stakeholders	Concerns and the Corresponding	Top Ten Issues of the Port of Keelung
Government	Air quality, hazardous goods management, cargo leakage, port development, vehicle emissions, ship smoke, etc.	• Air Quality • Cargo Leakage/Hazardous Goods Management • Ship Exhaust Emissions • Vehicle Exhaust Emissions • Port Development
Employees	Ship smoke, ship waste, ship oily water discharge, port development, cargo leakage, etc.	• Air Quality • Cargo Leakage/Hazardous Goods Management • Ship Exhaust Emissions • Vehicle Exhaust Emissions
Customers	Ship smoke, ship waste, ship oily water discharge, port development, cargo leakage, etc.	• Ship Exhaust Emissions • Waste/Port Waste • Water Quality • Port Development • Cargo Leakage/Hazardous Goods Management
Local Community	Air quality, climate change, dust, hazardous goods management, river-borne pollutants, ship smoke, ballast water discharge, noise, etc.	• Air Quality • Cargo Leakage/Hazardous Goods Management • Ship Exhaust Emissions • Dust • Climate Change • Water Quality • Noise

Responses to Stakeholders

Regarding the issues and suggestions of stakeholders, the Port of Keelung has incorporated them into the key areas for improving the port environment. The port continues to enhance its environment and includes these considerations in future port planning.

Stakeholders	Issues	Responses from Keelung Port
Tenants	Improvement of dust from bulk cargo	1.The use of modern street sweepers for harbor and street cleaning operations can reduce the re-suspension of dust caused by vehicle traffic, thus avoiding secondary air pollution. 2.Strengthen the inspection of the bulk cargo operation area, and supervise the industry to take dust prevention measures.
Government the Local	Waste in water area of the port	Port of Keelung currently has 3 cleaning vessels. Every day, these cleaning vessels patrol the waters of the Port of Keelung and clean up floating debris on the water's surface. Between 2021–2022, an average of 1.85 tons of floating waste was collected weekly.
Staff in harbor, the local	Vessels exhaust emissions	Port of Keelung has installed a shore power system and uses low-sulfur fuel. The port has implemented initiatives to advocate for vessel speed reduction. In 2021 and 2022, the achievement rates for vessel speed reduction were 40.6% and 41.7%, respectively.
Government staff in harbor, the local	Cruise exhaust emissions	1.Port of Keelung has set up noise monitoring equipment at noise hotspots. When anomalies occur, we immediately identify and address the cause. 2.We have coordinated with businesses to move refrigerated containers, which produce low-frequency noises, further away from residential areas to reduce noise pollution. 3.We avoid loading and unloading operations involving noisy goods like metal items during the night.

Cooperation to Improve Port Environment

To promote the development of the area surrounding the port and provide nearby residents with a friendly waterside environment, the Port of Keelung continues to collaborate with the Keelung City Government to advance the "BigU" Smile Harbor Project. This initiative establishes pedestrian-friendly recreational spaces by connecting the Nation's Gate Square, Ocean Square, and Cruise Square, which span from the east to the west coastlines of the inner Keelung harbor. Additionally, the Port of Keelung assisted the Keelung City Government in successfully hosting the "2022 Keelung City Expo" in June 2022. With "Starting Point City" as its theme, the event integrated the developmental history of Keelung port and city, showcasing the harmonious and prosperous vision of the port-city collaboration.

2022 City Expo

River pollution improvement	
Keelung City Government Environmental Protection Bureau	The Keelung City Environmental Protection Bureau initiated the "Keelung City Water Environment Improvement Plan" in 2018. With the holistic strategy of comprehensive river and harbor remediation, the plan proactively rehabilitated rivers such as the Xudong River, Nanyong River, Xiding River, and Tianliao River, all of which flow into the Keelung Harbor basin. The goal is to achieve clean water quality within the Keelung Harbor area and realize the vision of Keelung as a harbor city. – Tianliao River: The main construction for the first phase of the "On-site Underground Treatment Facility (Water Purification Plant)" was completed in 2023. The subsequent second-phase landscape construction is expected to be finished by the end of 2023. – Xudong River: Both the first phase of the "On-site Underground Treatment Facility (Water Purification Plant)" and the second phase of the "Xudong River Sedimentation Pond Phase II Water Environment Improvement Project" were completed in 2022. Additionally, the "Xudong River Water Environment Improvement Plan" is projected to conclude by the end of 2023. – Nanyong River: The "Nanyong River Water Quality Enhancement On-site Treatment and Riverside Water Environment Creation Project" is anticipated to be completed by the end of 2023. In the future, it will be coordinated with the third phase of Keelung City's sewage and drainage project to further enhance river water quality.
International cruise home port	
Keelung City Government	– In 2022, the City Expo was held, spotlighting the rich history, culture, and potential of the city, with the harbor playing a significant role in its development. – Furthermore, in the wake of the pandemic, joint harbor investment promotions were organized to collectively stimulate the revival of the cruise industry. This initiative not only aimed at rejuvenating the cruise sector but also sought to boost the development of related tourism and travel industries, capitalizing on the synergy of these sectors to uplift the local economy and provide renewed opportunities for businesses and communities.
Improvement of water quality in the port area	
Keelung Port	– In 2021, a total of 84.85 tons of garbage was cleaned up from the coastline of the Port of Keelung. On average, 1.63 tons of floating garbage were collected from the water surface every week. – In 2022, the Port of Keelung increased its efforts, resulting in the removal of a total of 107.76 tons of garbage from the coastline. The average weekly collection from the water surface amounted to 2.07 tons of floating garbage.
Development of Keelung port	
Keelung Port	– Launching the "Smiling Harbor Plan" (BigU), establishing the National Gateway Square, Ocean Square, and Cruise Square, connecting pedestrian-friendly recreational spaces along the east and west coasts of Keelung Port's inner harbor. – Construction of the West 27 Warehouse Project. – Development of the eastern coast in line with international cruise homeport development and tourism. – Road construction project between Lane 153 to Lane 167 on Zhongshan Road in Keelung City. – Reconstruction of the Niuchou Port Bridge in Keelung. – Dredging project for Keelung Port berths in 2022. – Restoration of historical buildings of West 2 and 3 warehouses into a Visitor Center (2016–2021). – Construction of new travel facilities at East 3 and 4 (2018–2021). – Relocation of the military docks and Wei Hai Camp in Keelung Port (Phase II and III) (2017–2022).

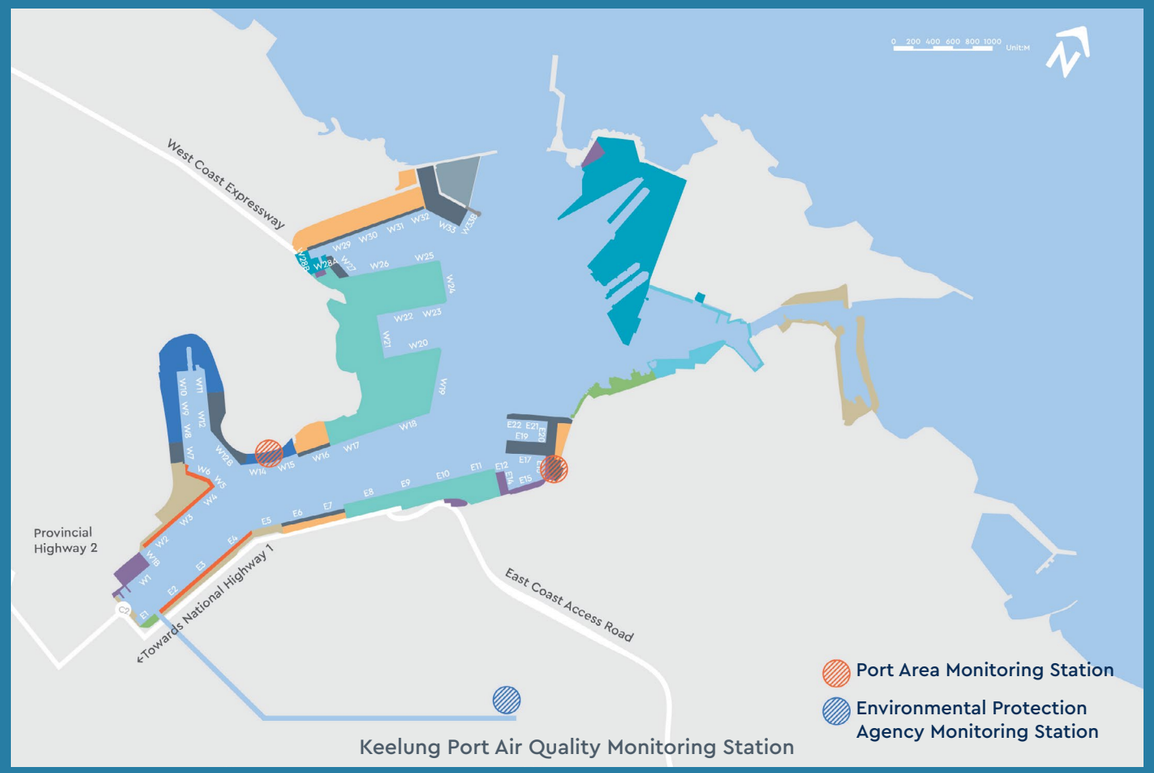
04

State of the Environment

Air Quality

Air pollution in the Keelung Port area primarily originates from emissions from ships and vehicles, loading and unloading operations, and road dust. To enhance the air quality in the harbor area, Keelung Port Authority has been steadfast in implementing the "International Commercial Port Air Pollution Prevention Plan." Concurrently, it assists the Keelung City Environmental Protection Bureau in regulating emissions from old diesel vehicles. Additionally, a 24-hour continuous monitoring station has been established within the port area to capture real-time air quality data.

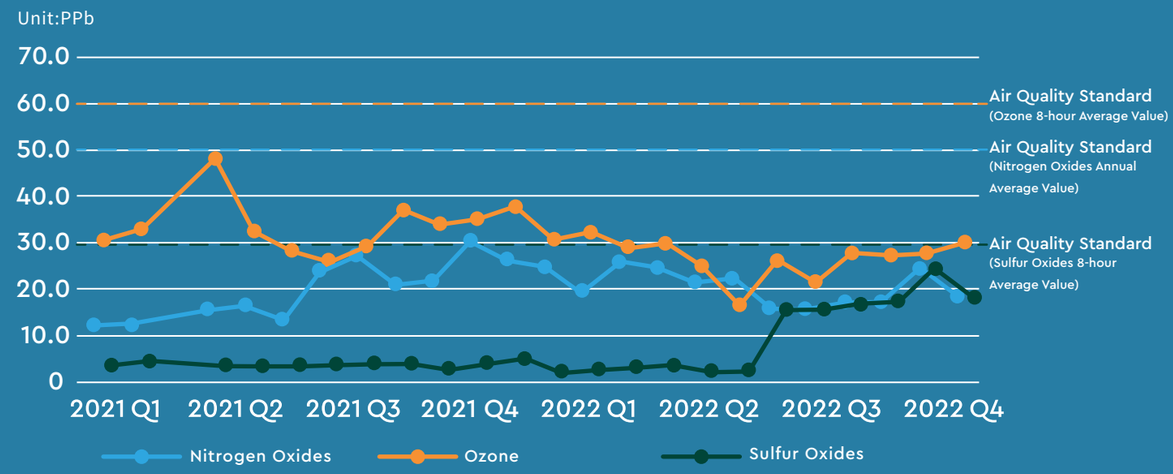
The monitoring parameters include particulate matter ($PM_{2.5}$, PM_{10}), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), and wind speed, among others.

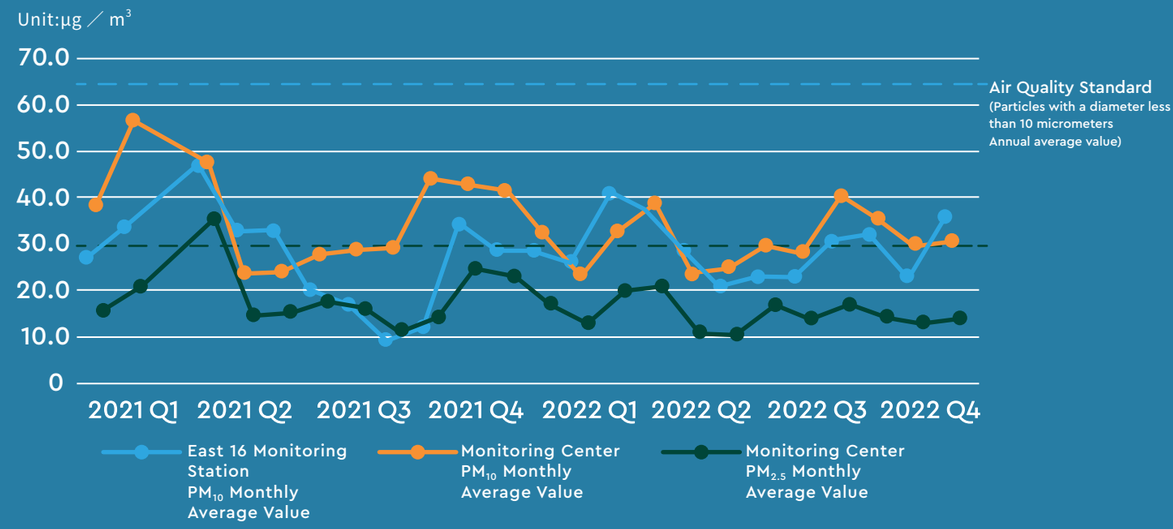


Keelung Port Air Quality Monitoring Station


24-hour continuous monitoring equipment

Air Quality Monitoring Results





Note: In March 2021, the monitoring station was relocated, and no monitoring data is available.

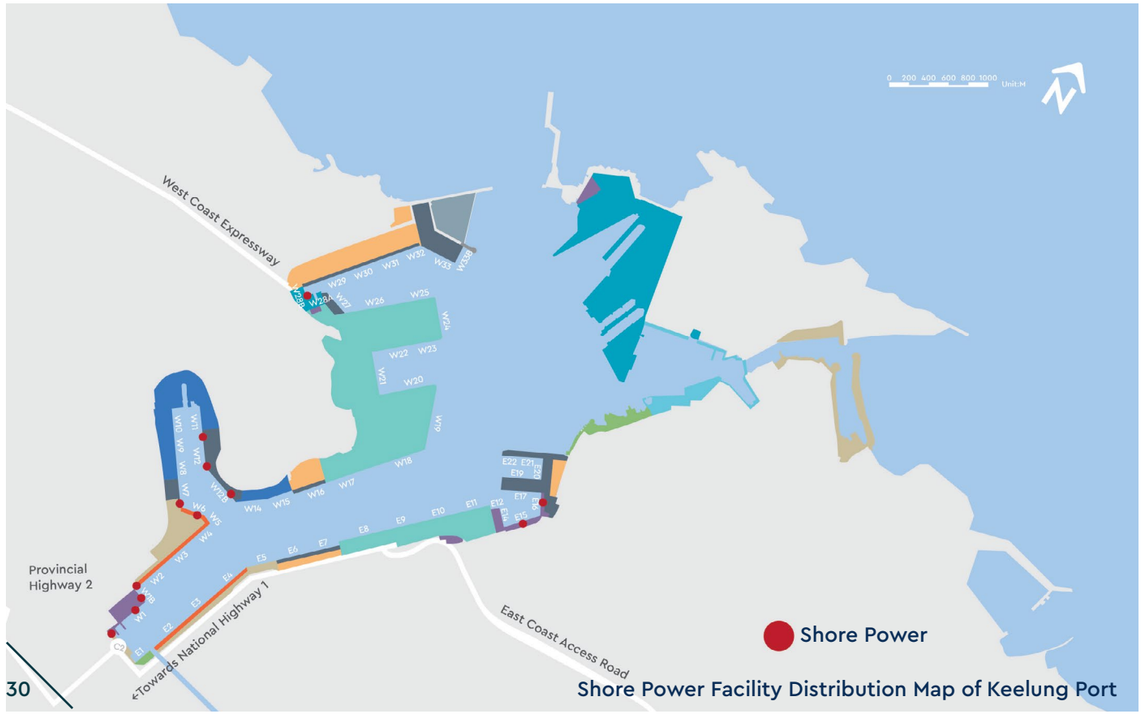
Greenhouse Gas Emissions

To mitigate the impact of ship emissions on the air quality around the port area, Keelung Port Authority has been proactively implementing pollution reduction measures for ships since 2018, in line with the "Commercial Port Air Pollution Prevention Plan." These measures encompass the use of low-sulfur fuel by ships, expanding the utilization of shore power, and advocating for speed reduction among vessels.

Low-Pollution Fuel:
All transit ships and tugboats within Keelung Port now use low-pollution fuel. Furthermore, since 2019, vessels entering the commercial areas of Keelung Port have been mandated to use low-sulfur fuel with a sulfur content of 0.5% by weight or equivalent emissions-reducing devices or alternative fuels.

Shore Power Facilities:
Keelung Port currently has 12 berths equipped with low-voltage shore power facilities. Nine of these facilities are designated for official ships operating within the port (including cleaning vessels, port authorities, customs, maritime patrol, navy, etc.), with a 100% usage rate. The remaining three facilities serve cement ships and domestic offshore route passenger-cargo ships, effectively reducing emissions during their berthing periods. Moreover, in an initiative to promote shore power development in Taiwan, Keelung Port Authority collaborated with the Environmental Protection Administration to propose the "Shore Power Subsidy Plan for Passenger Terminals in Keelung Port." This proposal aims to subsidize the establishment of low-voltage shore power equipment at the West 2 berth of Keelung Port, enhancing pollution control on ships, elevating the ship-boarding experience for travelers, and improving the surrounding air quality. This project also serves as a model for future port-based shore power facility subsidy applications in the country.

Ship Speed Reduction:
In addition to the aforementioned efforts, Keelung Port actively advocates for incoming and outgoing ships to reduce their speeds. Specifically, ships are urged to slow down to an average speed of 12 knots or less within a 20 nautical miles (nm) radius. This initiative has been effective in curbing air pollution. In 2021, the speed reduction compliance rate stood at 40.6%, reducing carbon emissions by 11,946 tons of CO2e and decreasing air pollutants by 350.9 tons. In 2022, the compliance rate increased to 41.7%, reducing carbon emissions by 12,179 tons and lowering air pollutants by 367 tons.



Shore Power Facility Distribution Map of Keelung Port

Keelung Port Shore Power Terminal Configuration

Usage by Unit	Cleaning Vessels/Touring Harbor Vessels/Small Boats	TIPC Marine Corporation, Ltd	Customs	Coastal Patrol	Navy	Cement Vessels/ Passenger & Cargo Ships
Pier	#West1 Small Boat Wharf	#West1B #West5 #West12 #West28 #East15	#West1	#East16	#West11	#West2 #West7 #West12B

Keelung Port's Ship Speed Reduction Achievements and Benefits in 2021 and 2022

Year	Number of Vessels Meeting Deceleration Conditions	Number of Vessels with Average Speed	Deceleration Achievement Rate (%)	Carbon Reduction (CO2e)	SO_2 (ton)	NOx (ton)	VOCs (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)
2021	2895	7136	40.6%	11946	111.0	193.1	8.6	21.2	17.0
2022	3237	7769	41.7%	12493	116.1	202.0	9.0	22.2	17.7

碼頭岸電設施

Reduce Dust Pollution

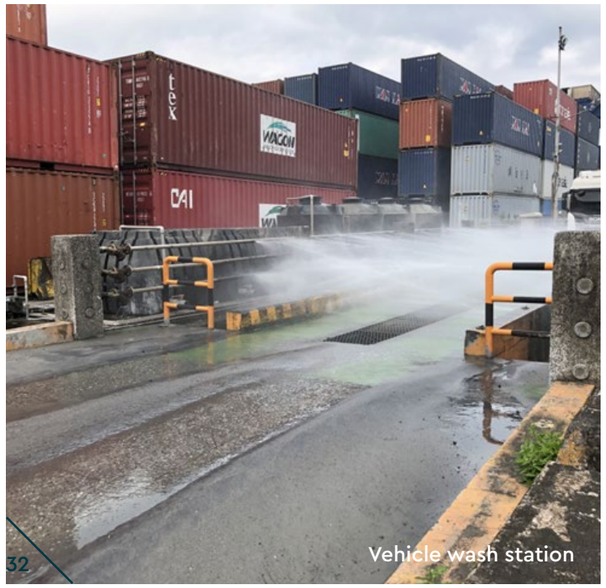
To prevent dust emissions and reduce air pollution, Keelung Port endeavors to maintain a favorable working environment and living quality for both the port and urban areas.

The Occupational Safety and Health Department and the Wharf Business Department conducted inspections of the operations at the port's docks: 652 times in 2021 and 662 times in 2022. During these inspections, port shipping companies, cargo owners, transport vehicles, loading and unloading companies, and other related businesses were urged to comply with current environmental laws and commercial port regulations. Additionally, Keelung Port has implemented dust control measures by utilizing loading and unloading preventive equipment, installing vehicle wash platforms, and establishing the 'Dust Control Work Management Procedures.' These measures mandate that loading and unloading contractors adhere to related operational regulations. Street sweeping vehicles and water trucks are deployed daily to clean and dampen the bulk loading and unloading areas and the essential routes used by transport vehicles, effectively mitigating dust hazards.

Dust suppression vehicle control strategy in Keelung Port

Aspect	Control Measures
Vehicle Control	• Keelung Port collaborates with Keelung City Government to implement the Diesel Vehicle Self-management Plan. Within the port area, license plate recognition systems and CCTV monitoring are set up at the checkpoint gatehouses. This setup helps monitor and ensure compliance with standards, such as ensuring that vehicles have their dust nets lowered by 15 centimeters and checking the cleanliness of the vehicles. • Sprinklers have been installed for use during the loading and unloading operations of sand and gravel ships, and sedimentation ponds are set up to clean the tires of these gravel trucks.
Equipment	• Number of sprinklers: 28 on the east coast; 26 on the west coast. • Number of vehicle washing stations: 2 unit • Street washing vehicle: 1 unit • Street sweeping vehicles: 2 units


Water sprinkler system


Vehicle wash station

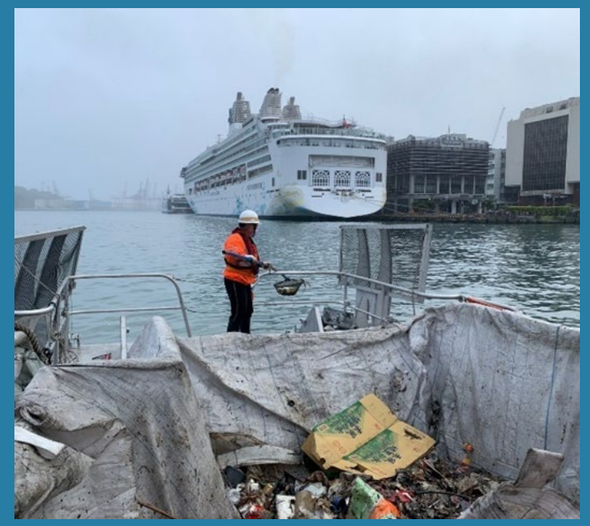

Water sprinkler truck

Water quality improvement strategy

Several channels flow into Keelung Port from Keelung City. Currently, there are four major drainage channels recorded, including the Xiangfeng Street river inlet, Niuchougang Stream, Xuchuan River, and Tianliao River. These channels bring wastewater from upstream, leading to a decline in the port's water quality. To address the pollution from the upstream rivers flowing into the port, a river interception station has been set up in the Xuchuan River. In 2018, the Keelung City Environmental Protection Bureau initiated the "Keelung City Water Environment Improvement Plan." The city is now actively promoting the use of gravel interspace technology to purify the water quality and renovate the landscapes of Tianliao River and Xuchuan River. Coupled with the city government's active promotion of household sewer connections, the coverage rate of public sewage systems reached 41.47% by December 31, 2022, and is continuously increasing. This will help improve the overall water quality flowing into Keelung Port. As for enhancing the water quality in the port area, Keelung Port deploys cleaning ships to regularly remove floating trash. In 2021 and 2022, an average of 1.63 tons and 2.07 tons of marine debris were removed weekly, respectively, with a 100% execution rate. Since 2019, Keelung Port has acquired two new multifunctional cleaning ships, both of which have been put into service for trash removal. There are a total of three cleaning ships at present.

Furthermore, concerning the siltation at the river mouths within the port area, silt removal projects are conducted at 4–5 docks every year based on dredging depth measurements, taking into account the dock usage and past dredging records. River pollution management upstream and wastewater inclusion are overseen by the Keelung City government, while Keelung Port Authority is responsible for cleaning the port waters and dredging. Both entities collaboratively work to create a waterfront-friendly environment.


Water quality sampling and testing procedure

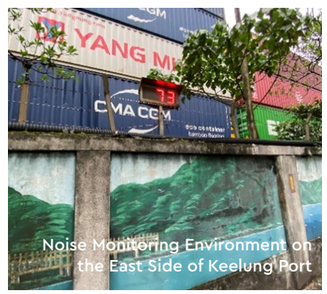

Garbage removal operation by cleaning boat

Port Noise

Keelung Port, adjacent to Keelung City, faces noise issues due to port activities and surrounding traffic. This can impact nearby residents' quality of life. To address this, the port enforces noise control standards and has developed traffic systems to reduce vehicle noise interference with residential areas. As per Keelung City's regulations, the port is in a Category 4 noise control zone. Noise levels in 2021 and 2022 occasionally exceeded acceptable limits, likely due to local traffic and docked ships. The company has implemented noise monitoring and coordinates with businesses to adjust operations, aiming to reduce noise disturbances.

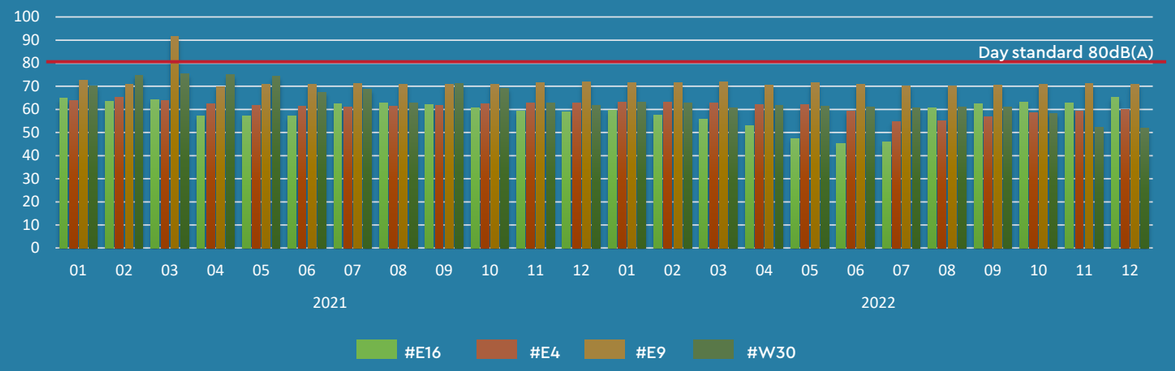
Distribution Map of Noise Quality Monitoring Stations in Keelung Port

Real-time Measurement Values of Noise Environment Monitoring

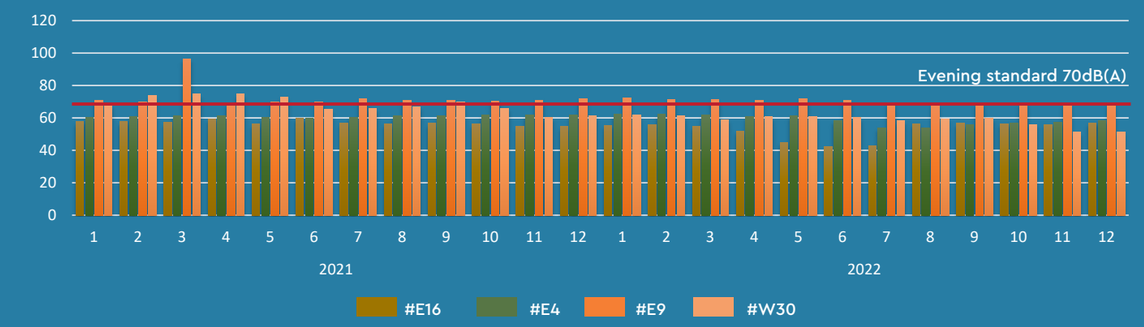


Noise Monitoring Environment on the East Side of Keelung Port

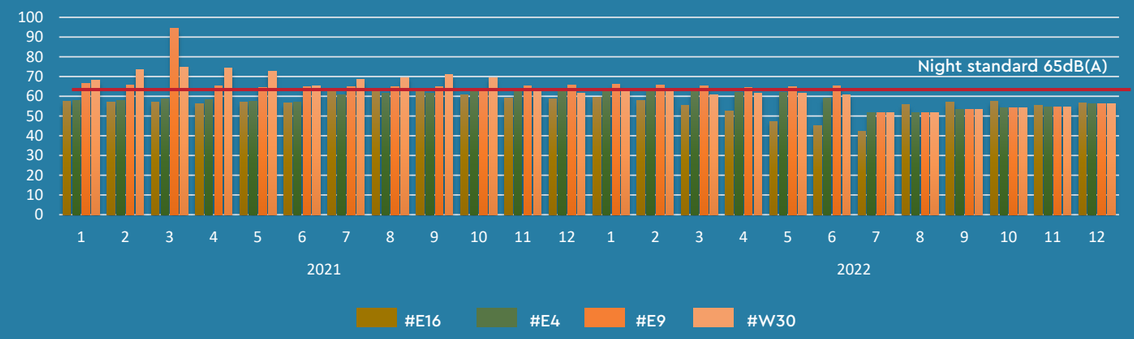
2021–2022 Daytime Noise Monitoring (Unit: dB(A))



2021–2022 Evening Noise Monitoring (Unit: dB(A))



2021–2022 Night time Noise Monitoring (Unit: dB(A))



Reduce the Discharge of Ship Sewage

Keelung Port, in order to prevent ships from discharging waste oil sewage into the port area, mandates that all ships entering the port should properly handle waste oil sewage. According to relevant regulations, the waste (polluted) water, oil, waste, or other pollutants of ships, except those that are allowed to be discharged into the sea as stipulated, should be retained on the ship or discharged to onshore receiving facilities. The ship waste oil sewage reception operations in 2021 and 2022 have both reached 100%. According to the 'Keelung Port Ship Oil Waste Clearance Operation Guidelines', the recovery of ship waste (oil) water was implemented. In 2021, a total of 35 ship times recovered 387 metric tons of waste (oil) water, and in 2022, a total of 50 ship times recovered 585.2 metric tons of waste (oil) water. In the future, we will continue to cooperate with relevant units for regular joint inspections of the environment where ships dock in the port area, maintaining a 100% reception rate of ship waste oil sewage, to prevent ships from indiscriminately discharging waste oil sewage, causing port water quality pollution.

Reducing Port Waste

To reduce waste in Keelung Port, there has been a push for waste reduction within the port area and the implementation of resource recycling and reuse, in line with the "Four-in-One Recycling Program" launched by the Environmental Protection Administration of the Executive Yuan since 1997. This involves resource recycling, waste reduction, and the "Mandatory Garbage Classification" initiated in 2005, which classifies waste into three main categories: resources, kitchen waste, and trash.

Reducing Land Waste in the Port Area

Keelung Port has set up specific points for temporary garbage containers, which are periodically collected by outsourced waste management companies. Industrial waste (including waste oil and water) is handled by shipping companies, dock lessees, and loading and unloading companies, who contract qualified waste treatment companies to handle the disposal. In 2021, the general land waste removal amounted to 1529.79 metric tons, with a resource recycling volume of 120.92 metric tons, resulting in a recycling rate of 7.9%. In 2022, the general land waste removal reached 1644.05 metric tons, with a resource recycling volume of 75.78 metric tons, and a recycling rate of 4.61%.

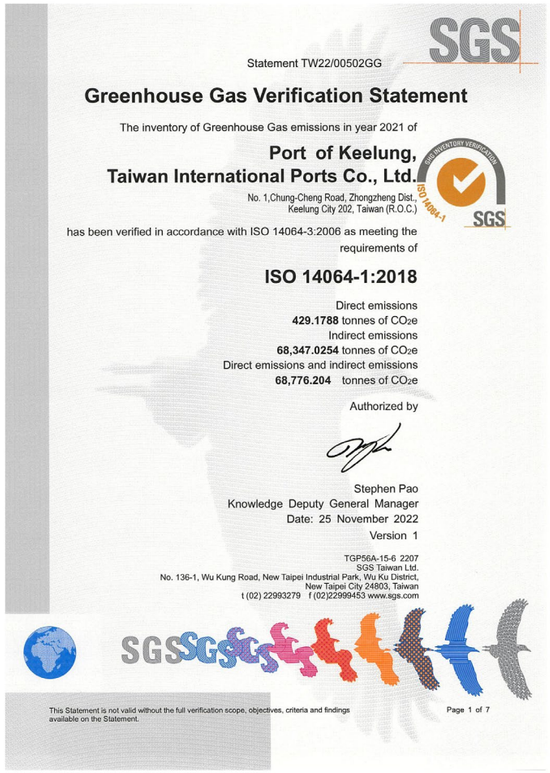
Reducing Ship Waste

For ship waste in Keelung Port, some is periodically collected by waste management companies contracted by the Keelung Harbor Branch Company, while some is managed directly by cruise ships and other shipping businesses, either by contracting waste removal companies or by the shipping businesses themselves handling the waste. In 2021, the general ship waste removal amounted to 315.29 metric tons, with a resource recycling volume of 43.22 metric tons, achieving a removal execution rate of 100%. In 2022, the general ship waste removal reached 401.98 metric tons, with a resource recycling volume of 47.35 metric tons, maintaining a removal execution rate of 100%.

Greenhouse Gas Emissions

Since 2013, Keelung Port has been conducting a greenhouse gas inventory every two years in accordance with ISO standards. The primary source of greenhouse gas emissions for the Keelung Port Authority is purchased electricity, followed by fuel consumption from machinery and vehicles. Together, these two sources account for more than 95% of the total emissions.

Keelung Port has completed the greenhouse gas inventory for the years 2013 to 2021. The inventory for 2022 is expected to be completed by the end of 2023.



Statement TW22/00502GG

Greenhouse Gas Verification Statement

The inventory of Greenhouse Gas emissions in year 2021 of

Port of Keelung,
Taiwan International Ports Co., Ltd.

No. 1,Chung-Cheng Road, Zhongzheng Dist., Keelung City 202, Taiwan (R.O.C.)

has been verified in accordance with ISO 14064-3:2006 as meeting the requirements of

ISO 14064-1:2018

Direct emissions
429.1788 tonnes of CO_2e
Indirect emissions
68,347.0254 tonnes of CO_2e
Direct emissions and indirect emissions
68,776.204 tonnes of CO_2e

Authorized by

Stephen Pao
Knowledge Deputy General Manager
Date: 25 November 2022
Version 1

TGP56A-15-6 2207
SGS Taiwan Ltd.
No. 136-1, Wu Kung Road, New Taipei Industrial Park, Wu Ku District, New Taipei City 24803, Taiwan
t (02) 22993279 f (02)22999453 www.sgs.com

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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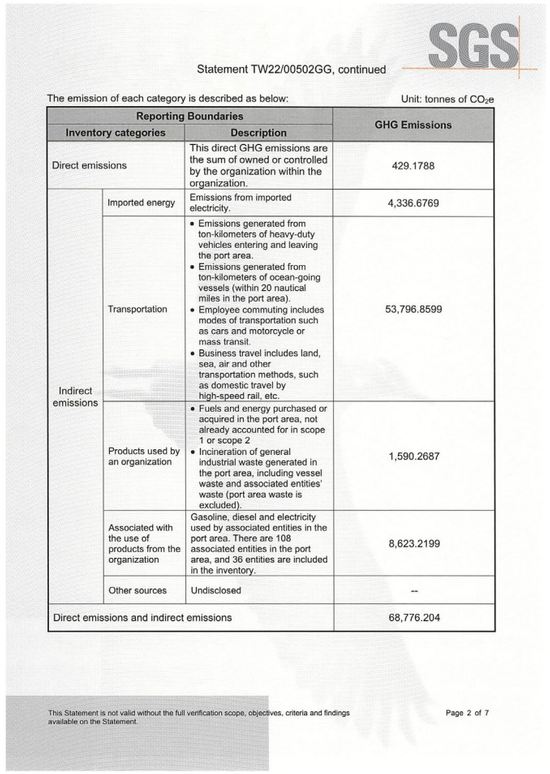

Statement TW22/00502GG, continued

The emission of each category is described as below: Unit: tonnes of CO_2e

Reporting Boundaries			GHG Emissions
Inventory categories		Description	
Direct emissions		This direct GHG emissions are the sum of owned or controlled by the organization within the organization.	429.1788
Indirect emissions	Imported energy	Emissions from imported electricity.	4,336.6769
	Transportation	• Emissions generated from ton-kilometers of heavy-duty vehicles entering and leaving the port area. • Emissions generated from ton-kilometers of ocean-going vessels (within 20 nautical miles in the port area). • Employee commuting includes modes of transportation such as cars and motorcycle or mass transit. • Business travel includes land, sea, air and other transportation methods, such as domestic travel by high-speed rail, etc.	53,796.8599
	Products used by an organization	• Fuels and energy purchased or acquired in the port area, not already accounted for in scope 1 or scope 2 • Incineration of general industrial waste generated in the port area, including vessel waste and associated entities' waste (port area waste is excluded).	1,590.2687
	Associated with the use of products from the organization	Gasoline, diesel and electricity used by associated entities in the port area. There are 108 associated entities in the port area, and 36 entities are included in the inventory.	8,623.2199
	Other sources	Undisclosed	--
Direct emissions and indirect emissions			68,776.204

This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement.

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Increase in Total Carbon Emissions from 2021 to 2022 Due to Higher Electricity Consumption

Item	Emission Coefficient $kgCO_2e$		2021		2022	
			Actual Consumption	Carbon Emissions (metric tons)	Actual Consumption	Carbon Emissions (metric tons)
Water Usage (cubic meters)	0.161	2021 Taiwan Water Corporation	130,149	21.0	141,494	22.78
Electricity Usage (kWh)	0.509	2021 National Electricity Emission Coefficient	8,519,994	4,336.7	8,856,634	4,508.0
Fuel Usage (liters)	-	IPCC 2006 Recommended Values	136,805	356.4	125,517	326.5
Paper Usage (reams)	3.4	A4 Photocopier Paper (per ream) Product Carbon Footprint	3,010	10.2	3,008	10.2
		Total		4724.3		4,867.5

Greenhouse Gas Reduction Strategy

The Keelung Port Authority is deeply concerned about the consumption of water and electricity within the port area. It consistently advocates to all staff the importance of treasuring resources. By establishing a consensus on conservation, everyone collaborates in monitoring the use of water and electricity in the port area. In case of any anomalies, they are promptly reported to the company's maintenance unit for rectification, ensuring resource wastage is minimized.

Category	Strategies
Wate	• Conduct regular leak inspections and control monthly water usage. • Use water fixtures like faucets and toilets with water-saving labels.
Electricity	• Switch off or stagger the use of lights in areas like corridors where they are not needed. • Turn off lights in offices during lunch breaks. • Use elevators and escalators on a rotational basis or only partially, depending on the situation. • Gradually replace traditional lighting with energy-saving lights. • Upgrade old air-conditioning equipment.
Fuel	• Promote carpooling for official vehicles. • Idling time for parked vehicles should not exceed 3 minutes. • Regularly record and control the fuel consumption of official vehicles to manage port fuel consumption. • Replace old fuel-consuming equipment. • Electrify official vehicles.
Paper	• Promote digitalization in administration and services, and increase the proportion of e-services like online document approval. • Preferably print on both sides or reuse the reverse side of papers.
Smart Port Access	• Set up automated gate guards and digital gate guard systems to reduce vehicle waiting times in the port area. • In 2021, 631,172 large vehicles entered and exited Keelung Port, reducing carbon emissions by 236.59 metric tons. In 2022, this number was 597,480, with a carbon reduction of 223.96 metric tons.
Ship Speed Reduction	• Advocate for ships to reduce speed when they are within 20 nautical miles (nm) of the shore, aiming for an average speed of 12 knots or less to minimize air pollution. • In 2021, the speed reduction achievement rate for ships in Keelung Port was 40.6%, leading to a carbon reduction of 11,946 metric tons CO2e. In 2022, the achievement rate was 41.7%, with a carbon reduction of 12,179 metric tons.
Renewable Energy Development	• Develop renewable energy in available spaces within the port. • Keelung Port has already installed solar panels on the roofs of the West 7 and West 16 warehouses, covering an area of 9,187 m2 (with an installation capacity of 1,171 kW). The estimated annual carbon reduction is 396 metric tons.
Green Building	• New constructions in the Keelung Port area are designed and built with energy-saving and carbon-reducing techniques and equipment, aiming to earn green building certifications. • West 7 and West 16 warehouses and the Port Incubation Center in Keelung Port have all obtained qualified green building certifications. The construction of the West 27 warehouse has achieved both qualified and candidate green building certificates.
Carbon Sequestration through Port Planting	• Use available space within the port for planting, which not only beautifies the port but also serves the purpose of carbon sequestration. • In 2021 and 2022, the green area within the port was approximately 1 hectare.

Solar panels on the roof of the West 7 warehouse

E-gate system

Port area landscaping or Planting operations in the port area

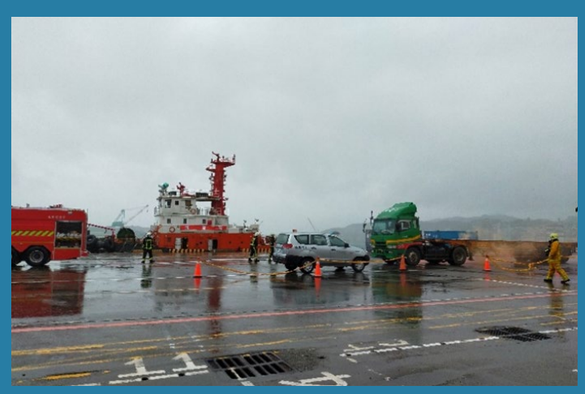
Keelung Port's West 16 Warehouse (Green Building)

Electric official vehicle or Electric service vehicle

Strengthening the management of dangerous goods

In case of sudden incidents involving dangerous goods within the Keelung Port, leaked materials can pose hazards to the environment and nearby residents. Therefore, implementing robust goods management and enhancing the safety of the port area are among the key environmental issues for Keelung Port. In terms of management, according to the "Keelung Port Corporation Chemical Spill Response Plan," Keelung Port and all relevant units maintain regular communication to enhance their ability to respond to leaks, mitigate disaster damages, safeguard the environment and human lives, maintain normal port operations, and reduce the severe risks of chemical disasters to the environment and human lives.

For loading and unloading operations in the port area, Keelung Port has designated a hazardous goods zone in the container yard. Irregular inspections ensure the management of dangerous goods in the port area. In 2021, there were 12 supervisions for loading, unloading, and transfer operations of hazardous containers in the port area, and the same number in 2022. In addition, for emergency responses to cargo leaks, one emergency response drill for cargo leakage was conducted in 2021, and one simulated cargo leakage emergency response tabletop exercise was held in 2022. Future goals include conducting an emergency response drill in the port area once a year and at least two joint safety supervisions every year.



Keelung Port's Comprehensive Exercise on Disaster Prevention and Relief, Port Security, Port Protection, and Marine Pollution for the Year 2021

Keelung Port Environmental Performance Index

Ten Significant environmental issues of the Keelung Port		Index item	Calculation method	Index target		Description of calculation	
						2021	2022
1	Air quality	Qualification rate of air quality indices: suspended particulate matter (PM_{10} and $PM_{2.5}$), SO_2, NO_2 and O_3,	Rate of air quality measurements meeting the Air Quality Standards (measured at harbor test stations)	• Minimum standard for daily average PM_{10}: 100.00% • Minimum standard for daily average $PM_{2.5}$: 85.00% • Minimum standard for hourly average SO_2: 99.95% • Minimum standard for hourly average NO_2: 100.00% • Minimum standard for hourly average O_3: 97.00%		• PM_{10} daily average pass rate: 98.80% • $PM_{2.5}$ daily average pass rate: 88.32% • SO_2 hourly average pass rate: 97.90% • NO_2 hourly average pass rate: 100.00% • O_3 hourly average pass rate: 88.32%	• PM_{10} daily average pass rate: 99.86% • $PM_{2.5}$ daily average pass rate: 75.62% • SO_2 hourly average pass rate: 99.73% • NO_2 hourly average pass rate: 100.00% • O_3 hourly average pass rate: 97.81%
		Replacing old devices with energy-saving devices	Proportion of use of electric gantries or overhead cranes	Number of inspections reached 600 times per year.		• Total number of inspections is 652 times.	• Total number of inspections is 662 times
2	Cargo Spillage/ Dangerous Goods Management	Number of Port Patrols, Cargo Leakage Emergency Response Drills, and Joint Safety Supervisions in the Port Area.	Number of Port Patrols, Cargo Leakage Emergency Response Drills, and Joint Safety Supervisions in the Port Area.	Inspecting the implementation of self-management by container yard operators at least 10 times a year.		• A total of 12 inspections were conducted to check the self-management situation of container yard operators in the port area.	• A total of 12 inspections were conducted to check the self-management situation of container yard operators in the port area.
3	Reducing Ship Exhaust Ggas Emissions	Proportion of harbor service vessels using low-pollution fuel (including fuels with a sulfur content of 0.5% or below).	Number of port service vessels using low-pollution fuel (marine diesel oil or super diesel) ÷ Total number of port service vessels × 100%	Proportion of port service vessels using low-pollution fuel reaches 100%		• The ratio of port service vessels using low-pollution fuel is 100%.	• The ratio of port service vessels using low-pollution fuel is 100%.
		Vessel speed restriction policy	Number of Promotions for Vessel Reducing Speed Upon Entry	Maintain at least 100 sessions annually.		1.Set the system to automatically send speed reduction notices to incoming vessels every hour, totaling 8,760 times. 2.Advocacy during ship berth meetings, a total of 249 times	1.Set the system to automatically send speed reduction notices to incoming vessels every hour, totaling 8,760 times. 2.Advocacy during ship berth meetings, a total of 250 times.
		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	The achieved speed reduction rate was 40%		• The achieved speed reduction rate was 40.6	• The achieved speed reduction rate was 41.7
		Ratio of service vessels using shore power	Number of service vessels using shore power ÷ total number of service vessels × 100%	All service vessels using shore power		• Ratio of service vessels using shore power: 100%	• Ratio of service vessels using shore power: 100%

Keelung Port Environmental Performance Index

Ten Significant environmental issues of the Keelung Port		Index item	Calculation method	Index target		Description of calculation	
						2021	2022
4	Dust	Frequency of street washer dispatches and water sprayers facilities inspection	Frequency of street washer dispatches and water sprayers facilities inspection	Street sweeper vehicles should be on duty for at least 240 days a year. The total distance covered by street sweeping should be at least 15,000 kilometers annually.		• The street sweeper vehicles were on duty for a total of 249 days. • The total distance covered by street sweeping was 20,087 kilometers.	• The street sweeper vehicles were on duty for a total of 250 days. • The total distance covered by street sweeping was 18,908 kilometers.
		Gravel and Stone Loading and Unloading Vehicle Cleaning Ratio	Annual target: Every year, the ratio of gravel and stone loading and unloading vehicles that pass through the car wash station before leaving the port area.	• Expected ratio of vehicles passing through the car wash station before leaving the port area: 100%		• The number of gravel trucks entering and exiting was 130,851 vehicles, with a 100% passing rate through the car wash station.	• The number of gravel trucks entering and exiting was 116,496 vehicles, with a 100% passing rate through the car wash station.
		Water Consumption of the Sprinkling Equipment at the Gravel and Stone Unloading Pier	Water Consumption of the Sprinkling Equipment at the Gravel and Stone Unloading Pier	Annual Targeted Water Consumption for the Sprinkling Equipment: 35,000 units.		• Actual Water Consumption for one year: 38,791 units.	• Actual Water Consumption for another year: 39,636 units.
5	Vehicle Exhaust Emissions	Compliance rate for smoke emission tests of large diesel vehicles from Phases 1 to 3 transiting the Keelung Port area.	Compliance rate for smoke emission tests of large diesel vehicles from Phases 1 to 3 transiting the Keelung Port area.	For large diesel vehicles from Phases 1 to 3 transiting the Keelung Port area, the smoke emission test compliance rate in 2022 increased by 15% compared to 2021		• Compliance rate for the test is 30.2%	• Compliance rate for the test is 76.6%
6	Port Development	Maintain the green area Recreation area	Volume of dredging and filling operations in the waters of Keelung Port.	Execution of dredging and filling operations in the waters of Keelung Port.		1. Deepening dredging work in the navigation channel and turning basin of Keelung Port, along with the dike construction project for the earthwork reception filling area (2020-01-18 ~ 2021-12-29). The dredging and filling volume was 179,000 m^3. 2. Dredging work in the waters of Keelung Port amounted to a dredging and filling volume of 8,284.9 m^3.	• Dredging project in the waters of Keelung Port resulted in a dredging and filling volume of 8,200 m^3
7	Waste/ Port Waste Management	Port Area Terrestrial Waste Collection Volume and Recycling Rate	Port Area Waste Collection Volume Port Area Waste Collection Efficiency Rate	Port Area Waste Collection Efficiency Rate: 100%		• In 2021, the total waste collected from terrestrial areas was 1529.79 metric tons, with a recycling volume of 120.92 metric tons, and a waste collection efficiency rate of 100%.	• In 2022, the total waste collected from terrestrial areas amounted to 1644.05 metric tons, with a recycling volume of 75.78 metric tons, and a waste collection efficiency rate of 100%.
		Ship Waste Collection Efficiency Rate	Ship Waste Collection Volume Ship Waste Collection Efficiency Rate	Ship Waste Collection Efficiency Rate: 100%		• In 2021, the amount of general ship waste collected was 315.29 metric tons, with a resource recycling quantity of 43.22 metric tons. The collection efficiency rate was 100%.	• In 2022, the amount of general ship waste collected reached 401.98 metric tons, with a resource recycling quantity of 47.35 metric tons. The collection efficiency rate was 100%.

Keelung Port Environmental Performance Index

Ten Significant environmental issues of the Keelung Port		Index item	Calculation method	Index target		Description of calculation	
						2021	2022
8	Climate Change	Greenhouse Gas Inventory	Annual Greenhouse Gas Inventory Operation	Annually complete the greenhouse gas inventory for the previous year following the ISO14064-1 standard		The 2021 greenhouse gas inventory has been completed	The greenhouse gas inventory for 2022 is expected to be completed by the end of 2023
		Solar Panel Installation and Generation	Solar Panel Area Installed on Port Warehouse Roofs	Increase the installation area of photovoltaic solar facilities on port rooftops		• The installation of solar panels on the rooftop of the West 7 warehouse was completed on October 27, 2020, covering an area of 5,512 m². • In 2021, the solar panels on the rooftop of the West 7 warehouse generated a total of 719,409 kWh.	• The greenhouse gas inventory for 2022 is expected to be completed by the end of 2023 • The installation of solar panels on the rooftop of the West 16 warehouse was completed in September 2022, covering an area of 3,675 m². The total area of solar installations in the Keelung port area now stands at 9,187 m². In 2022, the combined energy generated by the solar panels on the rooftops of the West 7 and West 16 warehouses amounted to 620,822 kWh.
		Green Building	Green Building Certificate	Newly constructed buildings have obtained green building certification		• West 7 Warehouse – Qualified Level • West 16 Warehouse – Qualified Level • The construction project of Keelung Port West 27 Warehouse is a candidate for the green building certificate	• The construction project of the Keelung Shin-2 Road Harbor Incubation Center has achieved the Qualified Level certification.
9	Water Quality	Water Quality Compliance Rate	Proportion of Port Water Quality Meeting Class C Marine Environmental Quality Standards	Qualification Rate above 98%		Port Water Quality Qualification Rate: 100%	Port Water Quality Qualification Rate: 100%
		Number of Days the Cleaning Boat is Operational and the Amount of Floating Trash Removed	Annual Number of Days the Cleaning Boat is Operational	The number of environmental appeals is less than 6		Days the Cleaning Boat Operated: 249 days Total Weight of Trash Cleared from the Coast: 84.85 tons	Days the Cleaning Boat Operated: 250 days Total Weight of Trash Cleared from the Coast: 107.76 tons
		Oily Water Reception and Treatment Rate	Reception and Treatment Rate for Vessels Applying for Waste Oil and Water Collection	Ship Waste Oil and Water Reception Rate at 100%		Number of Ships Serviced for Waste Collection: 35, with a total recovery of 387 tons of waste (oil) water, Reception Rate at 100%	Number of Ships Serviced for Waste Collection: 50, with a total recovery of 585.2 tons of waste (oil) water, Reception Rate at 100%
10	Noise	Daily qualification rate for harbor noise quality	Daily rate of qualified noise quality measurements at harbor test stations *the harbor plant site is a Type 4 noise control zone, meaning that noise is limited to 80 db during daytime (7 AM to 7 PM), 70 db during evenings (7 PM to 11 PM), and 65 db during nighttime (11 PM to 7 AM	Port noise quality: 100.00% seasonal daytime qualification rate, 95.00% evening, and 93.00% nighttime		• Daytime equivalent sound energy level (Leq): 97.00% • Evening Leq: 73.00% • Nighttime Leq: 67.00%	• Daytime equivalent sound energy level (Leq): 100.00% • Evening Leq: 88% • Nighttime Leq: 92%

05

Emergency Response

5.1 Emergency Response

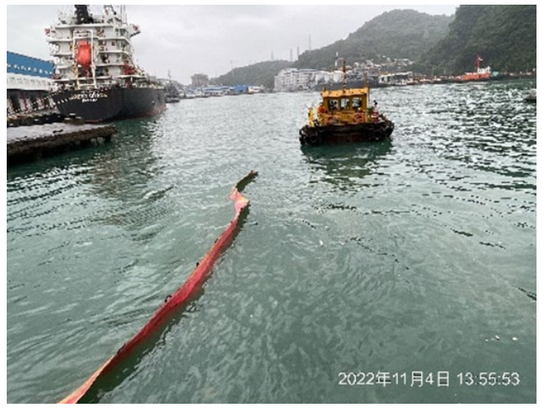
In order to maintain the safety of the port's operational environment, Keelung Port assigns personnel on a daily basis to regularly inspect the terrestrial environment of the port. Upon discovering suspected pollution activities, they immediately offer guidance and respond with emergency measures, or report to public law enforcement agencies for penalties. In 2021 and 2022, the main accidents within the port area were mostly minor pollution caused by vessels in the port. In response to pollution and disaster incidents in the port area, Keelung Port Authority, Keelung City Environmental Protection Bureau, and the Northern Maritime Affairs Center of the Ministry of Transportation and Communications Maritime and Port Bureau all have established complaint channels to provide contact and reporting for relevant agencies. Keelung Port also has emergency response procedures in place for significant port disasters, such as vessel incidents or fires and explosions, to address crisis management when a disaster occurs.

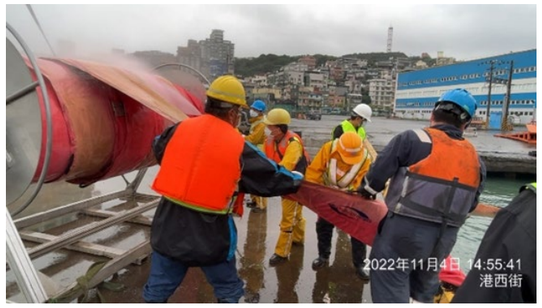
Keelung Port Environmental Inspection and Referral for Penalties Statistics

Inspection Count (times)	2021	2022
Port Environmental Inspection	652	662
Referral for Disposal	0	0

Keelung Port exercises control over the loading and unloading of bulk cargo and the storage of hazardous materials. The port has strengthened its cargo handling management to avoid overloading or leaks. There's an emphasis on intensifying port inspections, overseeing the operations of businesses, and bolstering communication and coordination mechanisms for emergency response among relevant units.

Accidents/Annual	2021	2022
Ship collision, sinking, capsizing, fire, oil pollution, and other chemical spills	4	5
Ship mechanical failures, operational malfunctions, tilting, and grounding	2	0
Significant warehouse and storage tank fires, explosions, and chemical spills	3	3
Person overboard, occupational safety accidents, marine debris, and others	14	11





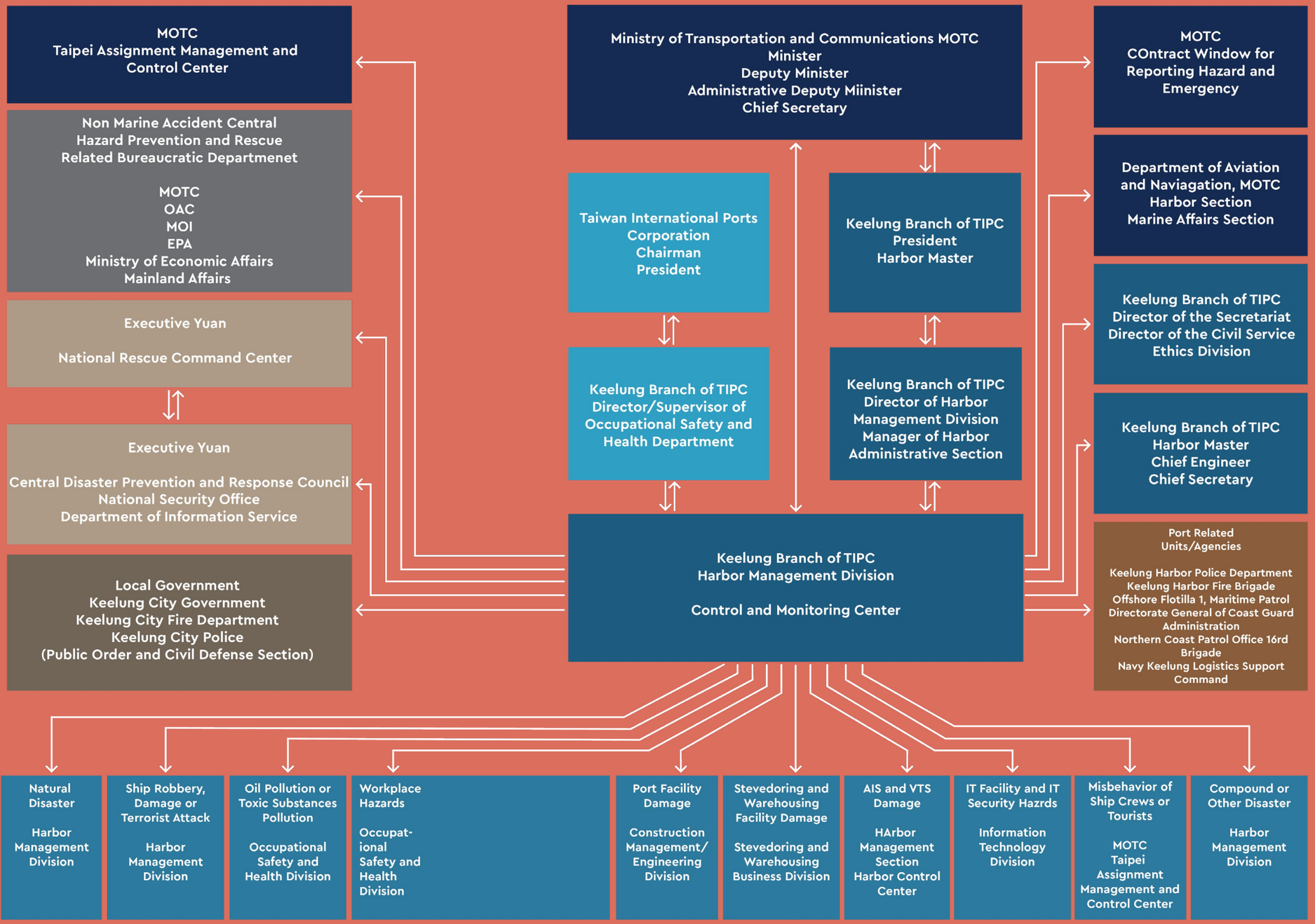
Emergency Response Education and Training for Marine Oil Pollution in 2022

Date	Drill Record	Content
2021.5.10 2021.5.27	2021 joint supervision and inspection by the Northern Maritime Administration	In accordance with Article 29 of the Commercial Port Management Regulations and the "Implementation Points for Safety Supervision of Dangerous Goods Operations in Port Areas by the Maritime and Port Bureau of the Ministry of Transportation and Communications", a joint inspection operation is conducted in collaboration with the Northern Maritime Affairs Center to inspect all lessees in the port area.
2021.10.22	Keelung Port's comprehensive drill for disaster prevention and rescue, port security, port preservation, and marine pollution in 2021	The exercise mobilized 13 participating units including the port police, fire department, anti-explosion units, airborne service brigade, police communication station, marine patrol, coast patrol, Keelung City Police Department, Northern Maritime Affairs Center of the Maritime and Port Bureau, China Container Transportation Company, Lianxing International Logistics Company, Taiwan Port Service Company, and Keelung Port Authority. The exercise subjects included counter-terrorism attack and hijacking and explosion prevention response methods to prevent further casualties during disasters. Additionally, to enhance the port's response to fire alarms and oil pollution incidents, simulation exercises were carried out for firefighting, disaster relief, and responses to oil leaks into the port pool. Drone footage was used to aid in disaster drill evaluations.
2022.4.25 2022.5.16	2022 joint supervision and inspection by the Northern Maritime Administration	In accordance with Article 29 of the Commercial Port Management Regulations and the "Implementation Points for Safety Supervision of Dangerous Goods Operations in Port Areas by the Maritime and Port Bureau of the Ministry of Transportation and Communications", a joint inspection operation is conducted in collaboration with the Northern Maritime Affairs Center to inspect all lessees in the port area.
2022.11.02	Keelung Port's wargaming exercise for disaster prevention and rescue, chemical spill, and port facility preservation in 2022	Through military simulation of various hypothetical scenarios, potential disaster events in the port area are estimated, familiarizing relevant units with both horizontal and vertical communication and notification processes. This strengthens Keelung Port's capabilities and actions in terms of safety protection and emergency response when facing unforeseen incidents.

Keelung Port 2022 Year International Ship and Port Facility Security and Marine Chemical Leak War Game Simulation

Keelung Port 110th Year Disaster Prevention, Port Security, Port Facility Protection, and Marine Pollution Comprehensive Drill

Flow Chart for Disaster and Accident Notification in Port of Keelung



06

Involvement and Cooperation

6.1 Keelung Port Environmental Education Facility

A. Attention/Motives

Port of Keelung committed to the best practice case for the "Ecological Port Certification" in 2019, and applied to the Environmental Protection Administration of the Executive Yuan for environmental education site certification. We hope to enhance the environmental-friendly awareness of the port city residents through educational courses, improve the public's environmental knowledge and responsibility, and let citizens recognize the green port and create a sense of identity for the port city.

B. Solution

Preparation period for certification (2017–2022):

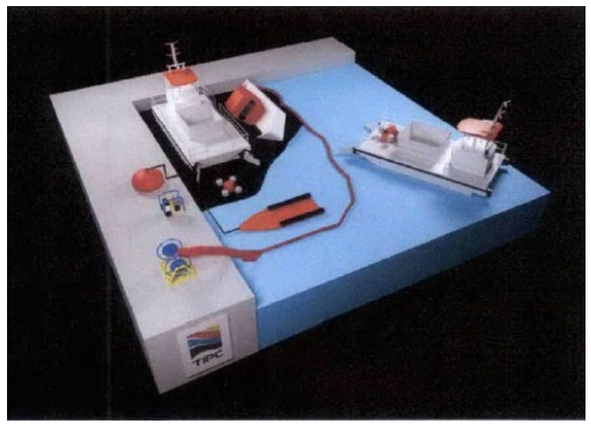
1. Conducted Keelung Port ecological survey work (2017–2018): Achieved multifunctional goals of education, research, conservation, and culture.
2. Selection and design of facility course: Designed with an emphasis on oil pollution emergency response, combined with the port's existing equipment and the simulation of emergency response using a port bay model, making the course lively and interactive, which was well-received during trial teaching.
3. Experience inheritance and government agency guidance: Engaged with the certified environmental education facility, National Taiwan Ocean University's Rainwater Park, for experience sharing, and was assisted by Keelung City's Environmental Protection Bureau for certification preparation and application.

Certification application period (2022–2023): Applied for Environmental Education Facility Certification from the Environmental Protection Administration of the Executive Yuan, underwent on-site inspection and committee review, and passed the certification on March 6, 2023.

C.Execution schedule

Short-term (2017–2022): Preliminary work preparation (e.g., ecological surveys, environmental monitoring, collection and compilation of related data, etc.)
Mid-term (2022–2023): Conducted certification application, data corrections, and coordinated with the review process, finally achieving the certification.
Long-term (2024- onwards): Provide environmental education services and continuously collaborate with local government agencies and organizations, moving towards sustainable operations.

Environmental Education Course Presentation – Explanation of Port Oil Pollution Cases



Based on the concept of the new multifunctional cleaning vessel 'Ji 737', a marine oil pollution emergency response model teaching aid was designed for environmental education courses.

D.Investment amount

Including ecological surveys, environmental monitoring, and pre-certification preparations (such as staff training, teaching aid design and production, application document preparation, editing, and proofreading), the budget amounted to approximately 5 million New Taiwan Dollars.

E.Effect/benefit

Achievements:

Recruited and trained current colleagues to serve as environmental education instructors (a total of 11). During the trial teaching period in 2021, 10 sessions were conducted with approximately 160 participants. Passed the certification on March 6, 2023, becoming the fifth environmental education facility in Keelung City and the first facility primarily focusing on oil spill emergency response.

Expected Benefits:

Increase the visibility of the green port and enhance its international reputation.
Each year, provide at least 300 opportunities (30 participants per session, approximately 10 sessions) for individuals to partake in the Keelung Port environmental education course.
Offer local government agencies and schools the opportunity to earn environmental education hours.
Strengthen cooperative opportunities with local communities and environmental groups, allowing for cultural and environmental experience exchange.

F. Involving the 17 Sustainable Development Goals (SDGs) of the United Nations: (SDGs) :

- SDGs Goal 4, Quality Education: Ensure inclusive, equitable, and high-quality education and promote lifelong learning for all.
- SDGs Goal 11, Sustainable Cities and Communities: Build inclusive, safe, resilient, and sustainable cities and communities.
- SDGs Goal 14, Life Below Water: Conserve and sustainably use the oceans, seas, and marine resources; ensuring biodiversity and preventing marine environment degradation.

G.Stakeholder

Keelung City Government, National Taiwan Ocean University, Yang Ming Marine Transport Corporation Cultural Foundation, local communities, and the general public.

6.2 Salute to the Sea-Coastal Cleaning and Maintenance Plan

A. Attention/Motives

In response to the growing demand for international cruise tourism, Keelung Port has initiated plans to promote tourism and offer enhanced recreational spaces and tourist facilities. This project will be located at the East 3 and East 4 piers, as well as the land behind them. New passenger terminals and boarding corridors will be built, aimed at improving the quality of the travel route in the eastern region, while also offering pedestrian-friendly spaces.

B. Solution

The planning theme revolves around five key principles: "Lightweight, Transparency, Friendly Space, Quality, and Renewal." Through the lightweight design of this project combined with the coexistence of the port and the existing buildings, the aim is to increase the port's transparency and reduce any visual barriers and impacts on the surrounding cityscape. The inner spaces have been revamped to elevate the overall quality, efficiency, and friendliness of the space.

C.Execution schedule

Construction Start Date: October 11, 2018.
Completion Date: July 16, 2021.

D.Investment amount

Budget: 1.03 billion New Taiwan Dollars.

E.Effect/benefit

Friendly Customs and Waiting Area:

The design includes expanded customs and luggage areas to streamline the overall passenger movement. The interior maintains a high ceiling of 6 meters to reduce any feelings of oppression and enhance passenger comfort. Each floor will have restrooms, including accessible restrooms. Additionally, there will be designated nursing rooms and prayer rooms, ensuring a passenger-friendly customs and waiting environment.

Friendly Vehicle Pick-up and Drop-off Services:

To cater to the large groups of passengers from major cruise ships, there will be 37 large car spaces, 63 small car spaces, 4 accessible parking spaces, and 2 loading and unloading spaces, totaling 106 parking spots. These can be flexibly adjusted based on demand, minimizing the operational impact on surrounding roads.

Pedestrian-friendly Walking Spaces:

There will be a 3–5 meter wide pedestrian path outside the passenger terminal building. The existing open pedestrian corridor and driveway will be widened to alleviate current congestion.

Butterfly Guest Garden:

Inspired by seascapes blended with greenery, a rooftop garden is planned. Comprising flower beds, wooden walkways, timber-patterned tiles, and creative visual arts installations, the garden offers a view reminiscent of cruise ship decks merged with urban greenery, providing recreational spaces for both travelers and locals.

High-Quality Space and Environmental Renewal Design:

The exterior of the building will feature lightweight aluminum grilles to reduce sunlight exposure. The second and top floors will have green facilities covering an area of 2899.8 m². These green areas not only help in reducing indoor temperatures but also offer passengers more recreational and waiting spaces. Depending on the external appearance, interior, and landscape, different lighting including spotlights, projectors, and linear lights will be used, presenting the building with diverse looks at night while ensuring safety for its users.

F.Environmental Issues Involved

Creating quality urban open spaces and recreational areas.
Improving the quality of efficient travel clearance.

Butterfly Garden

Aerial view of the East Coast Travel Center

Lightweight aluminum grille facade of the Travel Center building

East Coast Travel Cente

G.Relevant Stakeholders

Port operating units, maritime businesses, residents, tourists

H.Involving the 17 Sustainable Development Goals (SDGs) of the United Nations: (SDGs)

SDG 9: Industry, Innovation, and Infrastructure – Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

SDG 11: Sustainable Cities and Communities – Make cities and human settlements inclusive, safe, resilient, and sustainable.

6.3 Involvement and Collaboration

The Keelung Port actively collaborates with both domestic and international organizations, including governmental agencies, academics, and industries. Besides sustainable development related exchanges, there are also joint collaboration on technological research, investment, inspection, and academic seminar etc.

International Associations

Association of Pacific Ports (APP)

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

The International Association of Ports and Harbors(IAPH)

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

Ports

Port of Dover

In 2011, the Port of Keelung, TIPC signed a memorandum of cooperation with the Port of Dover, which established a long-term relationship between the two parties in the areas of port risk management system deployment, risk management equipment development, safety management system development and audits, technical training, support, and environmental management systems.

Port of Hakata

The port of Hakata has been actively improving port affairs, IT systems, and relevant environ- mental protection measures in partnership with TIPC since 2014. For example, the ports have exchanged information on electrical RTG cranes, sunshades for mobile refrigerated containers, and hybrid straddle carriers.

Port of Yatsushiro

On August 10, 2015, Port of Keelung began sister port relations with Yatsushiro Port, becoming port partners. Together, they developed new shipping lines for container ships and cruise ships and mutually exchanged and cooperated in various areas, such as economies related to the development of the two ports

Academic Institutions

National Taiwan Ocean University

National Sun Yet-Sen University

National Cheng Kung University

In order to enhance international competitiveness and transportation quality, create a sound educational and academic research environment, and allow the port and educational institutions to prosper together, Taiwan International Ports Corporation signed a memorandum of cooperation with three public universities in 2012. In the future, the parties to the memorandum will be involved in academic exchanges, research and development, cooperative undertakings between companies and educational institutions, education and training, student internships, and port operation seminars. In addition to enhancing training quality, the educational institutions involved can also provide intelligence to port affairs companies, and thus play an active role in assisting practical port management and operations, which will achieve a win-win outcome.

Government

North Maritime Affairs Center

The Port of Keelung, TIPC and the Bureau of Environmental Protection of Keelung City collaborate in regular joint audits and drills in the port areas, and together assist the EPA in organizing relevant meetings and drafting proposals.

Ministry of Environment

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

Institute of Transportation, MOTC

The Institute of Transportation has conducted research projects on such subjects as "Congestion Relief," "Capacity Increase," "Expansion and Use of Current Transportation Facilities," and "Establishing a Long Term Transportation Development Plan." In the past, the Port of Keelung, TIPC worked with the Institute of Transportation on many projects such as "How factors of port areas services in Keelung harbor affect cruise passengers' satisfaction " and " The real-time acoustic wave and current profile monitoring system," etc.

Ocean Affairs Council

To promote multilateral negotiation between Central and Local Governments, Ocean Affairs Council was inaugurated in 2018 and , serving as the official governing body in charge of the planning("Smart Monitoring System in Harbor Establishment Project"), coordination and implementation of marine-related policies.

Wild Bird Society of Keelung

The Port of Keelung, TIPC has allowed the Wild Bird Society of Keelung to conduct an observation plan in the port's aquatic areas as part of a project to reconstruct black kite ecology at Keelung port.

Bureau of Environmental Protection, Keelung City

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

07

Training and Communication

Training

To enhance employees' awareness of environmental protection and promote work safety, leading to lifelong learning, Keelung Port regularly organizes environmental education training sessions. The Environmental Education Act was enacted in 2010 and implemented a year later. According to the act, public enterprises and related entities should establish an annual environmental education plan, and each employee is required to participate in at least four hours of environmental education.

In 2021 and 2022, Keelung Port organized environmental education courses for both internal and external personnel. The cumulative learning hours for all participants exceeded 5,000 hours. The courses included film viewing, school and community environmental education, disaster prevention and rescue, nature conservation, pollution prevention, environmental and resource management, and carbon inventory among other aspects.

Environmental Education Activity

Marine Environmental Education – Exploration of Tube Worm Anatomy

Marine Environmental Education – Unpowered Water Recreation Activity

Health Promotion – Mountain Climbing Activity

Communication & Publication

To ensure ongoing communication between Keelung Port and businesses as well as the public, various channels such as events, seminars, workshops, publications, websites, and exhibition spaces are utilized. Through these platforms, information related to Keelung Port is made accessible to the general public, port area operators, academic institutions, and relevant port business units for their reference and understanding.

Donation of Offerings for the Ghost Festival

Long-term Service in 2022 & the 19th Annual Elderly Reunion Event

Keelung Family Assistance Center's End-of-Year Warm Wishes Gathering 2021

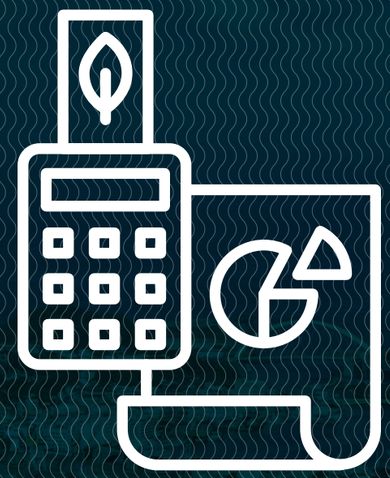
Sponsoring the Harbor Lantern Night & Remembering Childhood Lights' event

Organizing the 'Youth Bloom, Stay YOUNG with Us' Charitable Even

Donation to Ren'an & Huashan Foundations

Community Engagement at Charity Flea Market

Session Highlights at National Environmental Symposium



08

Green Accounting

Environmental investment and cost

Keelung Port's investments in environmental issues can be categorized into staff, environmental maintenance and management, environmental monitoring, emergency response, and community relations. The objective of these expenditures is to enhance employee environmental awareness, improve port area environmental maintenance and quality, bolster emergency response capabilities, and heighten public awareness of the port's functions. In 2021 and 2022, Keelung Port's expenditure on environmental concerns amounted to NTD 54,022,000 and NTD 65,125,000 respectively, which is approximately €1,572,693 and €1,895,924 based on an (exchange rate of 1 EUR = 34.35 TWD).

Costs related to environmental issues at Keelung Port (Unit: €)

Items of Expenses	2021	2022
Employees	614,556	602,300
Environmental Maintenance & Management	789,461	1,209,549
Environmental Monitoring	98,865	57,642
Emergency Response	47,802	1,019
Communication & Publication	22,009	25,415
Total	1,572,693	1,895,924

- Personnel: Expenses related to staff involved in environmental matters, including their salaries and costs associated with environmental education and training.
- Environmental Maintenance and Management: Costs for harbor area environmental cleaning and waste disposal, harbor area planting and landscaping maintenance, cleaning boats, street sweeping vehicles, and patrol vehicles, as well as their repair and maintenance expenses.
- Environmental Monitoring: Monitoring and survey costs for air, noise, water quality, and sediment, among other environmental indicators.
- Harbor Pollution Removal Supplies: Expenses for accident management and materials used for emergency pollution handling in the harbor area.
- Community Engagement: Expenditures for public welfare, promotional activities, and public relations outreach materials.

Environmental assets

In order to transform Keelung Port into a docking port for cross-strait passenger and cargo ships and international cruise ships, as well as an Asia-Pacific logistics distribution center and an environmentally-friendly green port, Keelung Harbor Branch Company has initiated a series of port development plans. Some of these plans address environmental issues, such as the Keelung Port East Coast Passenger Terminal Scenic Improvement Lump Sum Project, the Keelung Port Waterway and Turning Pool Deepening and Dredging Project, the Earthwork Enclosure Dike Project, and the New Road Construction Project between lanes 153 and 167 on Zhongshan 3rd Road in Keelung City. In 2021 and 2022, the under-construction projects invested by the Keelung Harbor Branch Company totaled NTD 4,220,619,000, which is approximately €122,871,004(based on an exchange rate of 1 EUR = 34.35 TWD).

Costs related to environmental issues at Keelung Port (Unit: €)

Project name	Timeline	Cost
Comprehensive Landscape Improvement Project for the East Coast Passenger Terminal Facilities of Keelung Port	2020-01-30 ~ 2021-07-02	4,434
Relocation Project of the Military Wharf and Wei-Hai Camp (Phase I) of Keelung Port	2019-01-27 ~	10,748
Relocation Project of the Military Wharf and Wei-Hai Camp (Phases II & III) of Keelung Port	2020-01-14 ~ 2023-08-09	1,432
New Construction Project for Passenger Terminal Facilities at Piers East 3 and East 4 (Phase II) of Keelung Port	2018-10-11 ~ 2021-05-22	19,795
New Construction Project for Passenger Terminal Facilities at Piers East 3 and East 4 (Phase III) of Keelung Port	2020-12-01 ~ 2021-07-16	32,856
Restoration and Reuse Project for Historic Warehouses West 2 and West 3 of Keelung Port	2019-03-28 ~ 2022-05-15	14,320
Construction Project for Warehouse No. 27 West of Keelung Port	2020-12-01~ 2023-04-26	5,746
Construction Project for the Port and Harbor Training Center of Keelung Harbor Office	2020-06-20 ~ 2021-08-18	2,027
Dredging Project for Navigation Channel and Turning Pool and Earthwork Containment Embankment Project of Keelung Port	2020-01-18 ~ 2021-12-29	25,010
2021 Keelung Port Water Area Dredging Project (Including Subsequent Expansion)	2021-7-16 ~ 2023-01-22	494
Construction Project for Multifunctional Warehouse and Relocation of Substation at Pier No. 16 West of Keelung Port	2021-01-22~ 2021-11-11	2,662
New Road Construction Project between Lanes 153 to 167 of Zhongshan 3rd Road in Keelung City	2021-07-12~ 2023-09-16	1,692
Restoration and Reuse Project for the Historical Residence of the Port Director in Gaoyuan New Village.	2021-04-14 ~	1,647
	Total	122,871,004

09

Improvement Recommendations

For Keelung Port, the topic of sustainable green operations holds profound significance. With its intimate connection to the city of Keelung, the port benefits from a natural symbiotic relationship. Keelung Port is committed to fostering a harmonious relationship with the local residents by leveraging this unique connection. The overarching goal is to collaboratively build a globally competitive green port while also harnessing the potential of the international cruise industry to bolster Keelung's tourism sector.

With its core services rooted firmly in port operations, Keelung Port is attuned to global port management trends, seeking diversified business opportunities. Simultaneously, the port emphasizes the dual pillars of economic and environmental sustainable growth, embodying the very essence of corporate social responsibility. In collaboration with the Keelung City Government, efforts are made to enhance the aquatic environment of the port area, creating a waterfront that is inviting and accessible to all. Such initiatives not only elevate the overall image of Keelung Port but also pave the way for a premium and pleasant living environment. By attracting an increased number of cruise ships and visitors to Keelung, the port collaborates with local governments, businesses, residents, and other diverse stakeholders, embodying the principle that "the whole is greater than the sum of its parts.

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

Port of Keelung

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