Port of Taipei Environmental Report 2020

Taiwan International Ports Corporation, Ltd.

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Taipei Port Environmental Report

To become a "Green Port," Taipei Port has acquired certification of Ecoport since 2016 and is applying for second recertification (2020). This environmental report presents achievements and goals of Taipei Port in environment from 2018 to 2019.

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

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Policy Statement

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

臺灣港務股份有限公司
基隆港務分公司
TIPC Port of Keelung, Taiwan International Ports Corporation, Ltd.

Port of Keelung, Taiwan International Ports Corporation Environmental Policy (Including Keelung Port, Taipei Port, Suao Port)

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

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

We commit to:

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

The full understanding and mutual consent to this environmental policy have been reached by the relevant parties, including employees, suppliers and tenants of Port of Keelung. This policy is open to the public on our website.

Kao Chuan Kai
President of Port of Keelung, TIPC

Date : 2020. 10. 14

No. 1, Chung-Cheng Road, Keelung 20202, Taiwan, R.O.C.
Tel: +886-2-24206100 Website: http://kl.twport.com.tw

臺灣港務股份有限公司
基隆港務分公司
TIPC Port of Keelung, Taiwan International Ports Corporation, Ltd.

Environmental Objectives for Taipei Port

To achieve our commitments in environmental policy, the following environmental objectives are set according to ten major impacts from Taipei Port:

- **Improve Air Quality of Port**
  Maintain air quality through utilizing continuous environmental monitoring system, reducing vessel pollution, and implementing port environment inspection.
- **Decrease Fugitive Dust**
  Use airtight operation and cargo handling equipment management to control fugitive dust.
- **Reduce Ship Exhaust**
  Promote vessels deceleration, usage of low sulfur fuel oil, and the usage of onshore power supply by official vessels to reduce exhaust pollution.
- **Strengthen Hazardous Cargo Management**
  Ensure hazardous cargo management by increasing cargo inspection frequencies to strengthen port security.
- **Reduce Port Vehicle Exhaust Emissions**
  Increase sensory gates installations to control vehicle access and the situation of vehicle pollution.
- **Manage Vessel Sewage Discharge**
  Entrust qualified traders to deal with vessel sewage discharge and waste oil problem to prevent the discharge vessel sewage and waste oil from polluting the ocean.
- **Improve cargo handling management**
  Improve cargo handling management, prevent overloading or leakage, and strengthen the fundamental plans of emergency response.
- **Reduce Vessel-generated Waste**
  Propaganda waste reduction of vessel and practice resources recycling/ reusing properly with record of vessel waste.
- **Land Use Optimization**
  Adjust port land usage and enhance completeness use of land usage.
- **Enhance Port Water Quality**
  Install sewage treatment system and long-term monitoring of water quality to maintain water quality.

The president of Keelung Branch is responsible for the implementation, maintenance, and effectiveness of the environmental objectives are reviewed on a biennial basis, and action plans are adjusted according to the condition of the Port of Keelung to ensure that promises are upheld, improvements are made, and environmental objectives are achieved.

Kao Chuan Kai
President of Port of Keelung, TIPC

Date : 2020. 10. 14

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1 Message from Keelung Port

Message from the President of Port of Keelung Taiwan International Ports Corporation, Ltd

Major ports worldwide have gradually integrated environmental sustainability into port management owing to the rising environmental awareness. Accordingly, the Taiwan International Ports Corporation also endeavours to build the Port of Taipei into a Green Port by implementing various sustainable practices.

Located in the south-west bank of the Tamsui River, the Port of Taipei is an artificial harbor constructed through land reclamation and is still expanding to this date. In this regard, we strive to vigorously uphold our self-imposed, stringent requirements in environmental assessment while the port continues to develop.

The Port of Taipei obtained the EcoPorts Certification in 2016 and 2018 and has been striving to protect the marine ecosystem and to maintain the quality of life surrounding the harbor. This requires a variety of actions such as doing cyclical modifications to our environmental policies and action plans, implementing energy-efficient equipment, conducting environmental monitoring and executing environmental management plans. The Taiwan International Ports Corporation believes that port development is a mutually beneficial strategy for both economic development and environmental protection. Therefore, besides implementing the Green Port Strategies, we also aim at providing a hydrophilic space for residents to make the Port of Taipei an international harbor of excellent quality.

Kao Chwankai
2020.10.16

President of Keelung Port

2 Port Profile

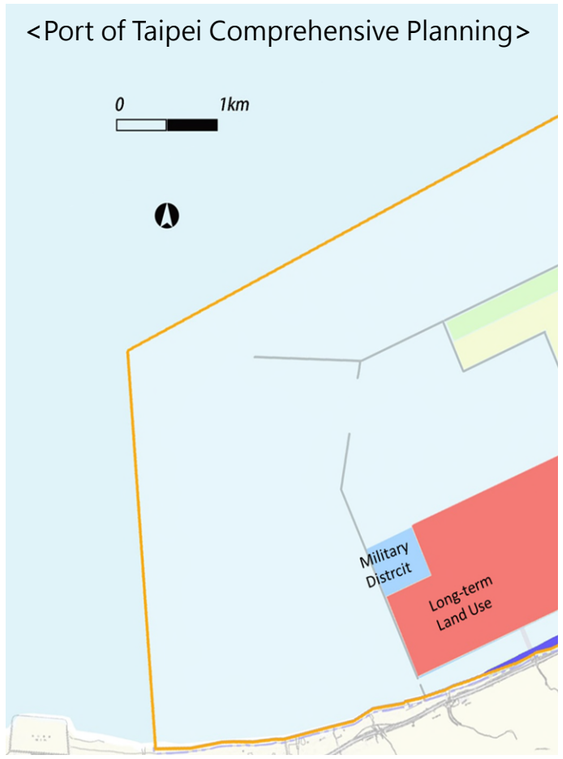
2
Port Profile

Port Location and Port Area

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

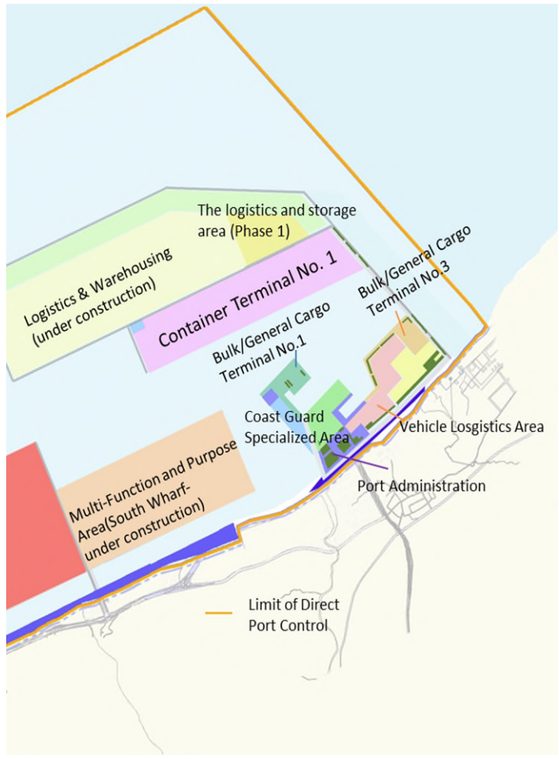
Currently, the port positions itself as an ocean-going container port, air-sea port, and distribution port for automotive and other industries. It features an average tidal about 1.93 m, a total of 26 wharves (21 operational wharves, 2 port service wharves, and 3 coast guard wharves), water channel depth of 16-17.5 m, and coastal landforms consisting of intertidal zones, sandy beaches, pebble beaches, and sand dunes. The port is in proximity to Wuku Industrial Zone, Linkou Industrial Zone, and Taoyuan International Airport, thus providing convenient air-sea transport services.

<Port of Taipei Comprehensive Planning>



Legal Status and Port Operators

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



Commercial Activities

Taipei Port currently (August, 2020) has 21 docks providing cargo containers, bulk and general cargo, and liquid bulk cargo services. Bulk and general cargo is the main service target, consisting of oil refining products, cement, coal, chemicals, and iron scrap. Taipei Port mainly features ocean-going and cross-strait (direct) shipping lines, and the port' s commercial activities revolve around vehicles and automotive component distribution, finished product and chemical product tanks, and load, discharge, and storage of bulk cargo, such as coal, sand, gravel, slag, and cement. ◦

<Commercial Activities>

- Aggregates (Sand, gravel))
- Refrigerated cargo
- Storage and packaging

<Cargo Handling>

Dry bulk	Liquid bulk (non-oil)
Ro-Ro	Trade cars / Vehicles
General cargo	

Main Cargoes

The main inbound cargos to Taipei Port in 2018 were mineral products (67.53%) and chemical or related industrial products (12.65%). Outbound cargos were mainly Plastics, Rubber and the Products thereof (28.08%) and chemical or related industrial products (23.81%). In 2019 were mineral products (64.83%) and chemical or related industrial products (14.79%). Outbound cargos were mainly Plastics, Rubber and the Products thereof (27.3%) and chemical or related industrial products (27.23%)

<Main Cargoes>

Refined products	Coal	Liquid chemicals
Scrap (iron)	Wood products	Cars / Vehicles
Cement	Sulphur	

<2018-2019 Business of Port of Taipei>

Service Category		2018	2019	Comparison between 2016 and 2017	
				Actual number	%
Incoming and Outgoing Ships	Vessels	8,577	9,004	427	4.98
	Gross ton	185,909,307	194,203,007	8,293,700	4.46
Volume of Cargo Handled	Cargo (Revenue ton)	59,141,844	57,729,195	-1,412,649	-2.39
	Dry bulk and groceries (Revenue ton)	12,790,522	11,655,669	-1,134,853	-8.87
	Pipeline cargo (Revenue ton)	3,492,111	2,770,104	-722,007	-20.68
	Total (Revenue ton)	75,424,477	72,154,968	-3,269,509	-4.33
Number of Cargo Handled	Incoming cargo (TEU)	799,672	783,842	-15,830	-1.98
	Outgoing cargo (TEU)	860,328	836,550	-23,777	-2.76
	Total (TEU)	1,659,999	1,620,392	-39,607	-2.39
Volume of Imports & Exports	Imports (ton)	13,394,832	10,812,232	-2,582,600	-19.28
	Exports (ton)	3,754,582	3,489,549	-265,033	-7.06
	Domestic(ton)	1,874,474	1,362,281	-512,193	-27.32
	Total(ton)	19,023,888	15,664,062	-3,359,826	-17.66
Incoming and Outgoing Passenger	Total(number)	92,434	116,926	24,492	26.50

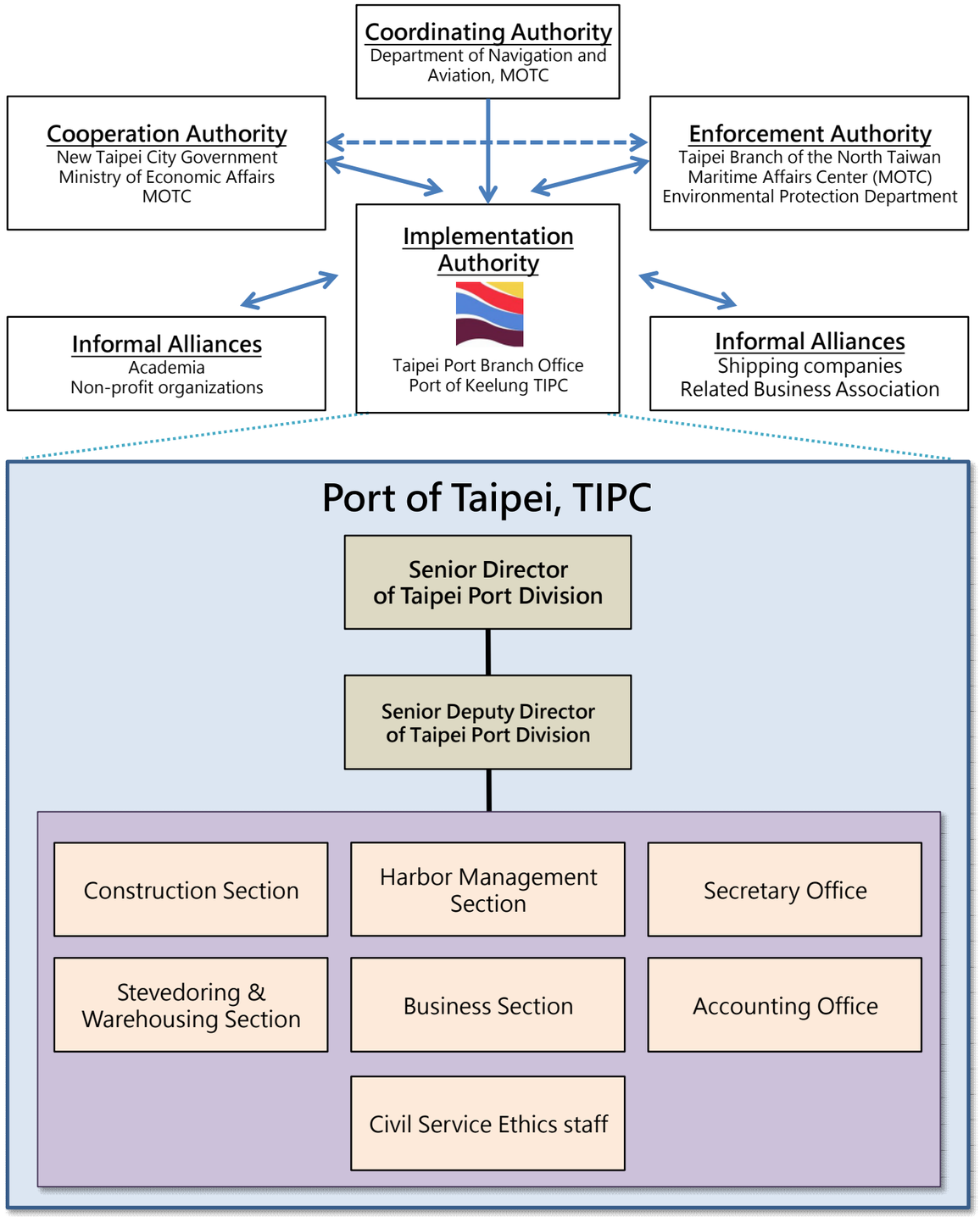
3 Environmental Management

Organization Structure

The Taipei Port Branch Office is in charge of managing the environment of the Port of Taipei. However, environmental aspects involve the division of responsibilities among different agencies. In addition to the Taipei Port Branch Office, agencies responsible for environmental aspects include the Taipei Port Division of the Northern Maritime Affairs Center of Maritime and Port Bureau of MOTC, Environmental Protection Department of New Taipei City Government, Environmental Protection Administration of Executive Yuan (EPA), Offshore Flotilla8, the Northern Branch of Coast Guard Administration, Ocean Affairs Council, Executive Yuan, Keelung Harbor Police Department Taipei Unit of National Police Agency, Ministry of The Interior, Taipei Harbor Subsection of Keelung Harbor Fire Brigade of National Fire Agency, Ministry of The Interior. The Taipei Port Branch Office is consists of the Business Section, Harbor Management Section, Stevedoring and Warehousing Section, Construction Section, Personnel and Administration Affairs Office, Civil Service Ethics Office, Accounting Office, etc. Descriptions of the sections/offices of Taipei Port are listed in the following table.

<Function of the section/ office of the Taipei Port Branch Office>

Section/Office	Description
Business Section	Customer service operation and management, investment attraction, and port service and profit development
Harbor Management Section	Berth allocation, in-port ship traffic management, environmental protection, contamination prevention , port operation and manage - meant, and disaster prevention and rescue
Stevedoring & Warehousing Section	Stevedoring and weighing, passenger liner service, labor safety, and health, and port service maintenance and management
Construction Section	Port construction planning, design, commission, procurement, and supervision, and commercial port service maintenance
Secretary Office	Branch office human resources and property management, public relations, cashiers, personnel affairs, and employee benefits
Civil Service Ethics staff	Service ethics formulation and promotion, corruption prevention and investigation, service ethics examination and reward, confidential information protection, and security system maintenance
Accounting Office	Budget, income, and expenditure administration, income and expenditure auditing, and annual and monthly report examinations



Relevant International Regulations

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

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

Regulations			Central Competent Authority	Local Law Enforcement Agencies
Transportation regulations	The Commercial Port Law	2011/12/28	Ministry of Transportation and Communications	Taipei Port Division of North Maritime Affairs Center, Maritime and Port Bureau, MOTC
	The Law Of Ships	2018/11/28		
	Shipping Act	2014/01/22		
	Act for the Establishment and Management of Free Trade Zones	2019/01/16		
Interior regulations	Fire Services Act	2019/11/13	National Fire Agency, Ministry of the Interior	Fire Bureau, New Taipei City Government
				Taipei Harbor Subsection, Keelung Harbor Fire Brigade
Agriculture regulations	Wildlife Conservation Act	2013/01/23	Council of Agriculture	Agriculture Bureau, New Taipei City Government
Environmental protection regulations	Marine Pollution Control Act	2014/06/04	Ocean Affairs Council	Environmental Protection Bureau, New Taipei City Government
	Basic Environment Act	2002/12/11	Environmental Protection Administration	
	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	2008/12/03		
	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		
	Greenhouse Gas Reduction and Management Act	2015/07/01		
	Environmental Agents Control Act	2016/12/07		
	Public Nuisance Dispute Mediation Act	2009/06/17		Public Nuisance Disputes Mediation Committee, New Taipei City Government
Intersectoral	Disaster Prevention and Protection Act	2019/05/22	Ministry of the Interior	New Taipei City Government

4 State of the Environment

Analysis of major environmental issues

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

Stakeholder	Importance
Government	22.42%
Public association	14.95%
Employee	17.44%
Customer	18.27%
Media	13.08%
Community	13.84%

Environmental issues
- ◆ Using the relevant environmental issues in the Self Diagnosis Method to assemble a questionnaire.

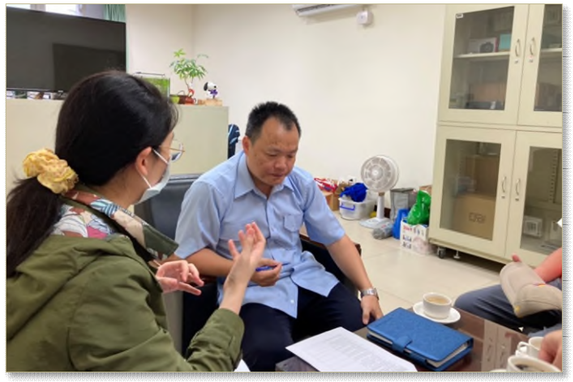
Internal questionnaires
- ◆ Identifying stakeholders.
- ◆ Inspecting the impact level of environmental concerns within the port.

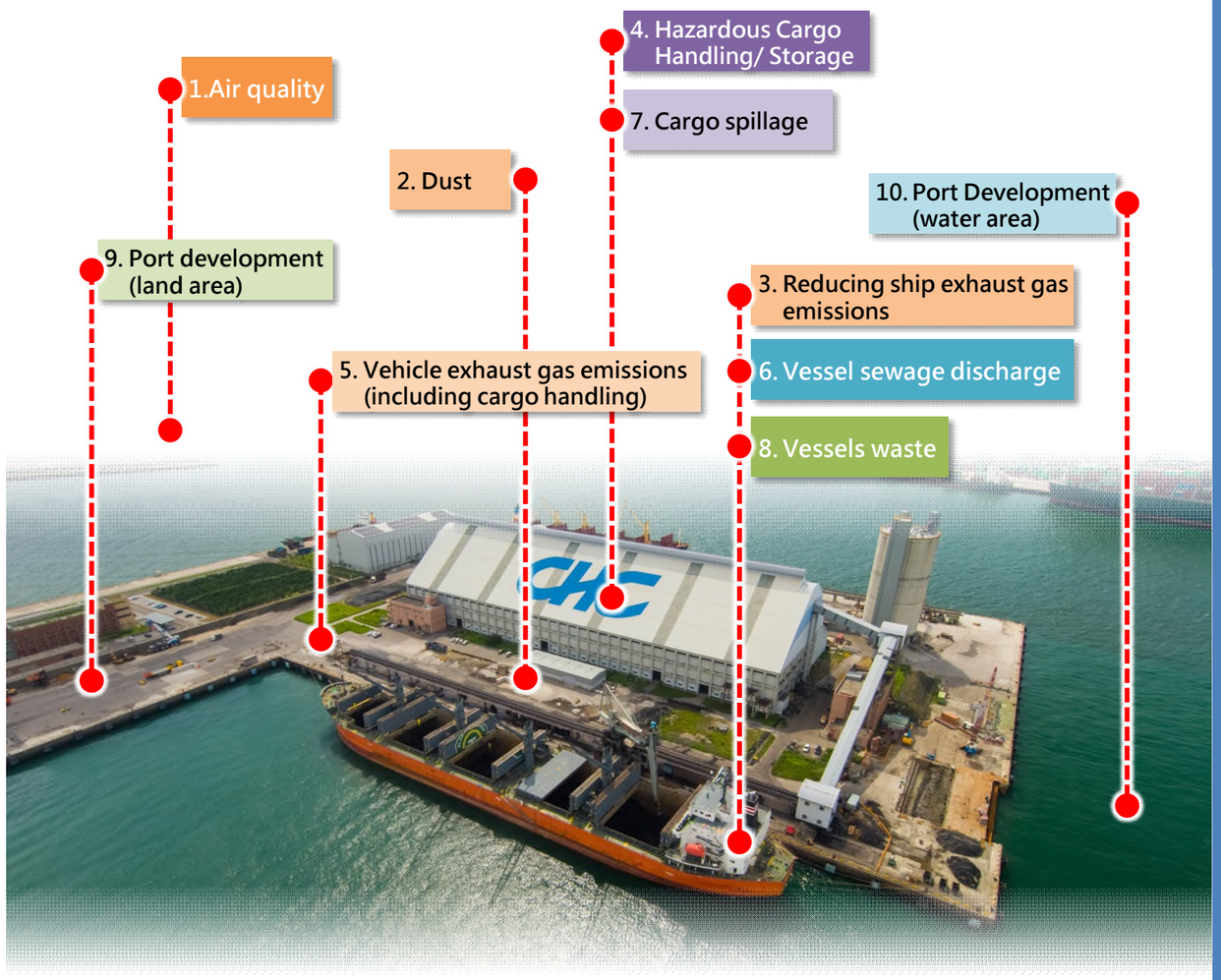
External questionnaires
- ◆ Identifying stakeholder concerns.
- ◆ Investigating the level of concern of each stakeholder.

Meta-analysis
- ◆ Filtering major issues by level of stakeholder concern and influence on operations of the Port of Taipei.

Identifying for top 10 Environmental issues
- ◆ Establishing environmental goals and improvement plans for top 10 environmental issues.

Top 10 environmental issues in Taipei Port





4

State of the Environment

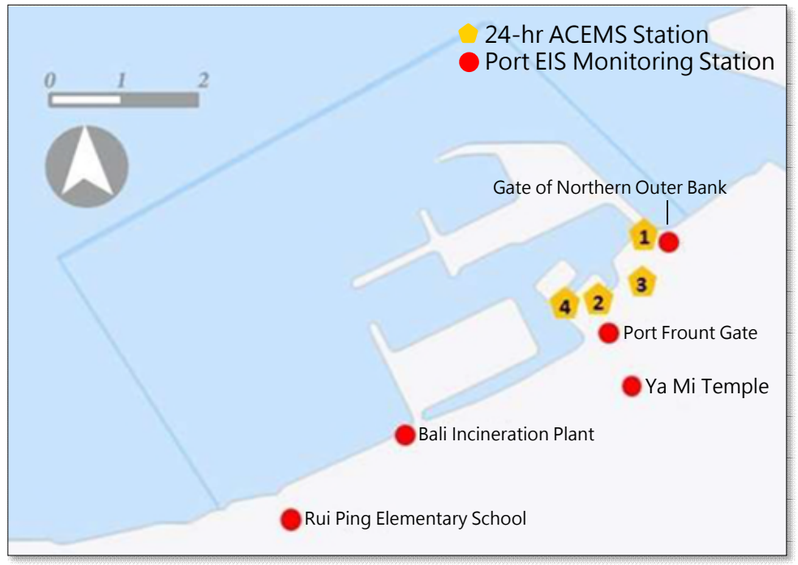
Air Quality

The main pollution sources of Taipei Port include particulates from stevedoring operations, ship exhaust, and dust from construction sites. On top of implementing pollution control measures, the Taipei Port installs monitoring systems to better understand the status of port air quality.

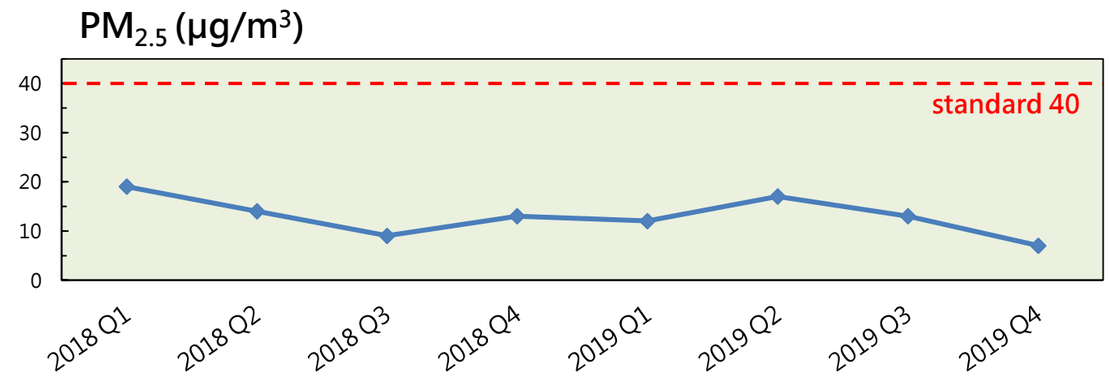
In addition to four 24-Hour Automated and Continuous Environment Surveillance System (ACESS), the port also has other Environmental Impact Statement (EIS) required monitoring sites.

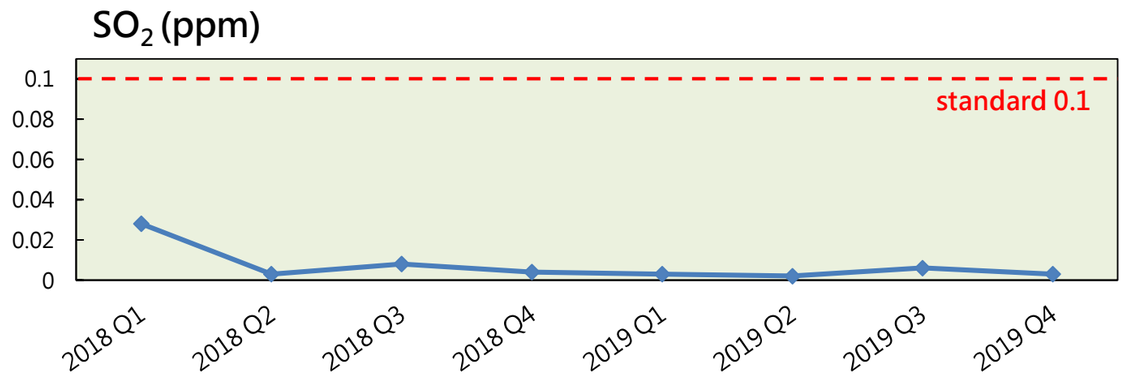
The monitoring items include suspended particles ($PM_{2.5}$, PM_{10}), sulfur dioxides (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen oxide (NO)、nitrogen dioxide (NO_2), Tetrahydrocannabinol (THC), non-methane hydrocarbon (NMHC)、wind speed, and salt, etc.

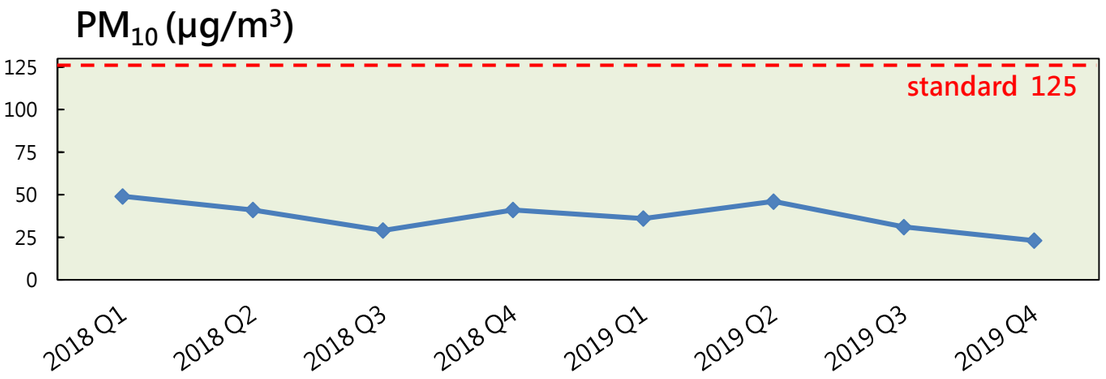
The results of the air monitoring stations in 2018 and 2019 are shown on the right, and most of the monitored pollutions meet the emissions standards.

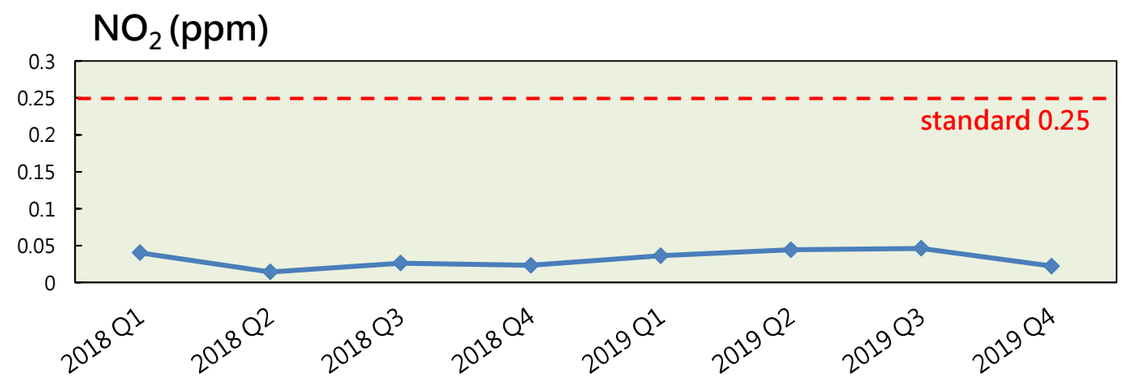


<Air Quality Monitoring Stations and Sites>









Air Quality Improvement Strategies

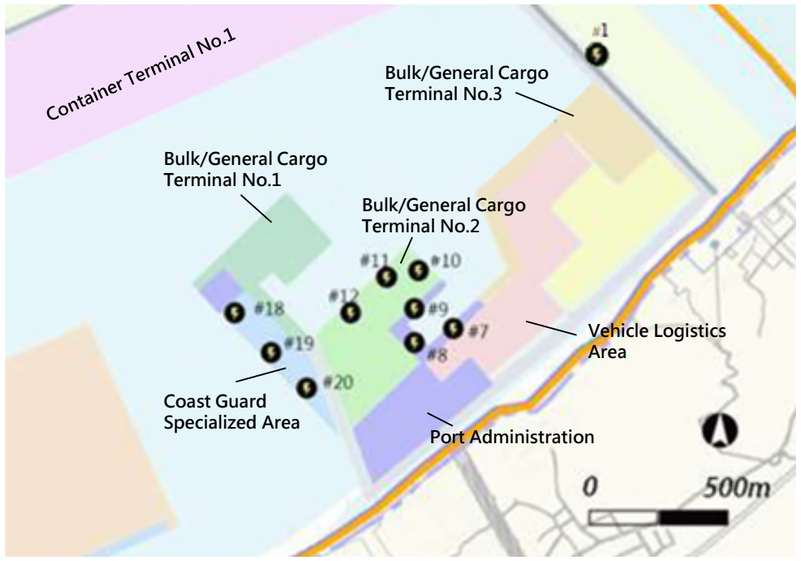
Environmental Friendly Vessels

To reduce ship exhaust, all service vessels in Taipei Port have used low-polluting fuels (sulfur concentration < 100 ppm) and shore power. Currently, there are 24 shore power facilities installed in Taipei Port among 10 wharves (3 for Coast Guard). The latest 4 shore power facilities were added at Wharf #10-#12 and Wharf #1 in 2018. With shore power supply, service vessels could shut down diesel engines in dock and abate ship exhaust gas emissions.

With Vessel Speed Reduction (VSR) program and Automatic Identification System (AIS), Taipei Port has notified ships of the policy of VSR every hour automatically and established the monitoring mechanism to collected data from 2015. The ratio of deceleration among all the incoming and outgoing ships reached 100% at 3-5 nm away from the harbor in 2018 and 2019.

<Shore Power Services at Taipei Port>

Operating enterprise	Cruise ship Straits, Cruise ship Lina	Kun Yang Port Service	Taipei Port Branch Office	Goldsun Group
Wharf	North 1	East 7, East 8	East 9	East 10 ~ East 12



<Shore Power Systems>

Fugitive Dust Emission Control

Having a large number of worksites and bulk cargo handling operations such as sand and coal makes fugitive dust emissions one of Port of Taipei' s major environmental issues. To create an excellent working environment and good quality of life for the port surrounding areas, the Port of Taipei has implemented control measures for fugitive dust emissions.

The control measures have two aspects, cargo handling, and vehicle control. Also, the Taipei Port requests stevedoring companies to abide by the related regulations.

Port of Taipei dust control machinery
- Cargo handling pollution prevention device：6 units
- Enclosed stevedoring warehouse：1 unit
- Carwash facilities：6 units

Note: Cargo handling pollution prevention devices include 1 spiral unloading machines and 1 indoor material extractor,4 gravel belt conveyors

<Taipei Port Fugitive Dust Control Measures>

Aspects	Dust Control Measures
Cargo Handling	• Environment-friendly enclosed warehouse facilities • Encourage cargo handling industries to implement dust-control meshes
Vehicle Contro	• Implemented diesel vehicle self-management program promoted by the New Taipei City Government • Inspect incoming and outgoing diesel vehicles • Install water sprinklers at sand and gravel stacking sties • Sweep inner and neighboring roads daily

Enclosed warehouse

Carwash facilities

4

State of the Environment

Reduce Port Vehicle Exhaust Emissions

The prosperity of Taipei Port has led to the increased traffic flow of incoming and outgoing vehicles. To reduce the environmental impact of vehicular pollution, the port specially designated "reducing vehicular pollution in port areas" as a crucial environmental protection objective to control vehicular pollution and increase the environmental friendliness of vehicles.

Therefore, the port installed vehicle wash facilities for incoming and outgoing drivers to maintain road cleanliness and reduce dust emissions. The Branch Office built vehicle wash facilities at Wharves No. 1 and 17 of the east bank, followed by Chia Pei, Goldsun Group, and Century Iron & Steel Industrial, there are 2 wash facilities in Land Reclamation Project for the Logistics and Storage Area, resulting in a total of 7 vehicle wash facilities within the port.

<Carwash facilities>

< Sensory gates >

Auto sensory gates system

In addition, the port established a flow-through gate system that employs optical character reader technologies and a radio frequency identification (RFID) system to identify and compare vehicles' identities by using a database for effectively monitoring incoming and outgoing persons, vehicles, and containers, reducing vehicles' idle speed and emissions, and increasing entry efficiency. The establishment and maintenance of the flow-through gate system cost approximately NT$49 million. Companies within the port are encouraged to adopt such an automated lane system, which can be used to reduce emissions and the duration of idle speed. The vehicle identification system can assist the Environmental Protection Bureau under the New Taipei City in investigating exhaust emission records, limiting the number of incoming and outgoing diesel vehicles, and reducing vehicular pollution.

More than 60% of traffic lanes at Taipei Harbor have been designated as automated lanes. Since 2016, four sensory gates have been installed at Check Point no. 1 and six automated traffic lanes have been designated at Check Point no. 2, 3, and 5. Apart from it, there is also an automated traffic lane in port arranged for earthwork and two sensory gates are under construction with 13 traffic lanes totally. In the future, two sensory gates will be installed in October 2020 to reinforce vehicle access control, automated lanes propaganda and vehicle emission examination. Besides, in accordance with the policy of the Environmental Protection Bureau under the New Taipei City, old vehicles, which were manufactured before June, 30, 1999 according to Air Pollution Control Act, should acquire the record of qualified emissions examination; otherwise, vehicles will be fined 500~60,000 NTD according to Air Pollution Control Act.

Strategies to Improve Water Quality

Water Quality

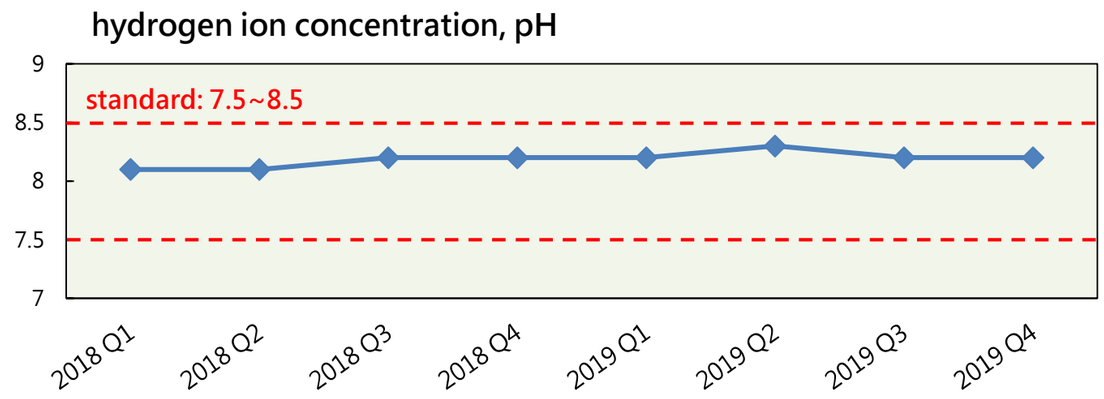
As an artificial port, Taipei Port is undergoing numerous land projects. Therefore, management of bottom mud and ocean water quality are important tasks. Taipei Port has continued to monitor and maintain its water quality, including pH, dissolved oxygen, biological oxygen demand 5 (BOD_5), cyanide, phenols, and mineral oil. All quarterly measurements in 2018 and 2019 satisfy the water quality standards.

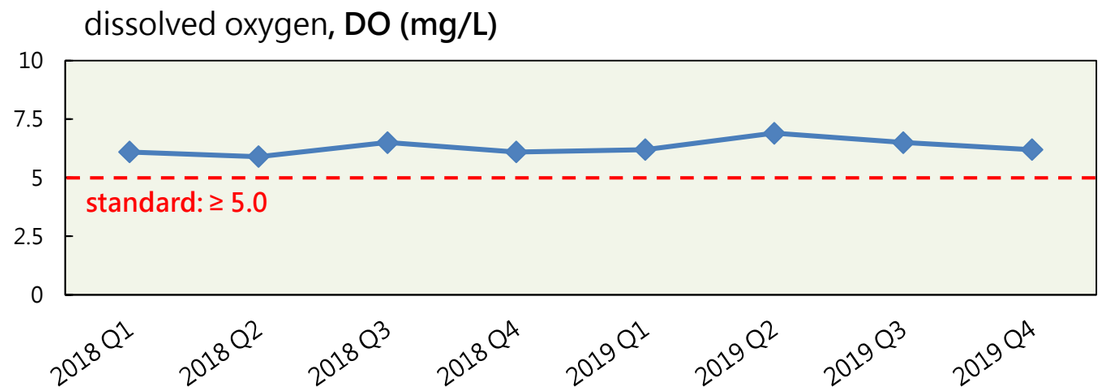
In 2003, Taipei Port became the first commercial port that was able to comprehensively process its own sewage and wastewater. In 2013, sewer pump station maintenance was completed to conduct continuous sewage treatment. An average of approximately 120,000 tonnes of sewage was processed each year. The construction of the South wharf Water Recycling Center in Taipei Port began in 2019 and expected to be completed in 2021. About 1,500 tons of domestic sewage and business wastewater in South Wharf area will be treat centrally, and release after tertiary treatment. In addition, the port has continued to monitor and maintain its water quality.

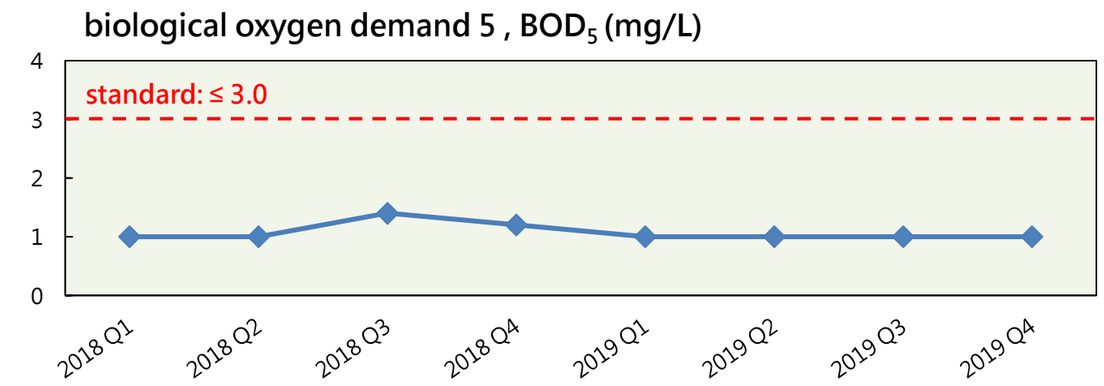
Manage Vessel Sewage Discharge

To prevent unauthorized oily bilge discharge from entering the harbor, Taipei Port conducts to ensure that inbound ships treat their oily bilge water and install oil boom in accordance with regulations. Oily bilge water is primarily discharged by ships and vessels. According to Article 29 of the Marine Pollution Control Act, vessel wastewater (sewage), waste oil, solid waste, or other contaminants must be stored onboard or discharged to onshore collection facilities unless otherwise permitted for ocean discharge.

The oily bilge and sewage water collection process were fully implemented in Taipei Port in 2018 and 2019, wastewater (including oily wastewater) shall be collected from ships in accordance with regulations on the disposal of oily waste. In 2018, 3,088.45 tons of wastewater (including oily wastewater) was removed from 255 ships, and in 2019, 2,265.94 tons of wastewater was removed from 187 ships, and is expected to be continually maintained through periodically inspecting vessel docking environments in coordination with relevant authorities, thereby eliminating unauthorized discharge and harbor pollution.





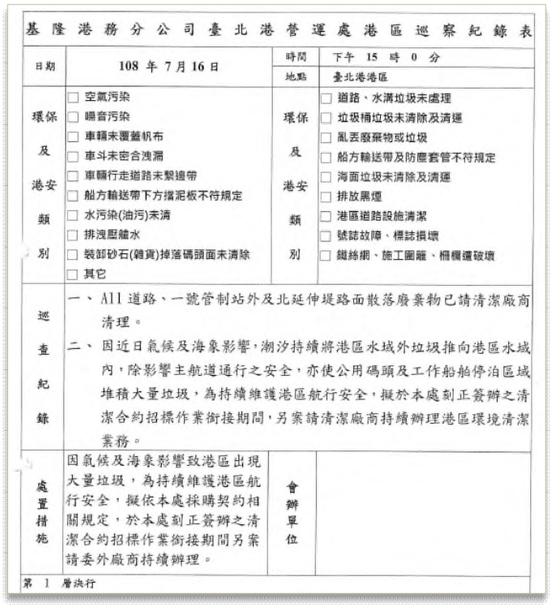


Reduce Port and Vessel Waste

Taipei Port Branch Office is promoting waste reduction and recycling plans to reduce port and harbor waste. Recycling and waste reduction plans are implemented in accordance with the Four-in-One Recycling Program that has been promoted by Taiwan' s Environmental Protection Administration (EPA) since 1997. Additionally, the EPA initiated the Mandatory Garbage Sorting requirement in 2005, requiring waste to be separated into recyclable, kitchen refuse, and general garbage, in which the major recycled items include waste paper.

The vessel waste in port is periodically collected and treated by contractors. Additionally, Taipei Port requires dock leasing businesses and cargo handling companies must hire qualified waste-cleaning contractors to deal with their respective industrial waste (including bilge and sewage water).

In 2018, general waste amounted to 297.96 tons, the recycling amounted to 105.94 tons and resource recovery rate was 37.9%. In 2019, the general waste, the recycling removed and resource recovery rate amounted to 286.02 tons, 110.77 tons and 38.7%, respectively. On the other hand, the removal rate of vessel waste was 100% in 2018 and 2019.



基隆港務分公司臺北港營運處港區巡察紀錄表

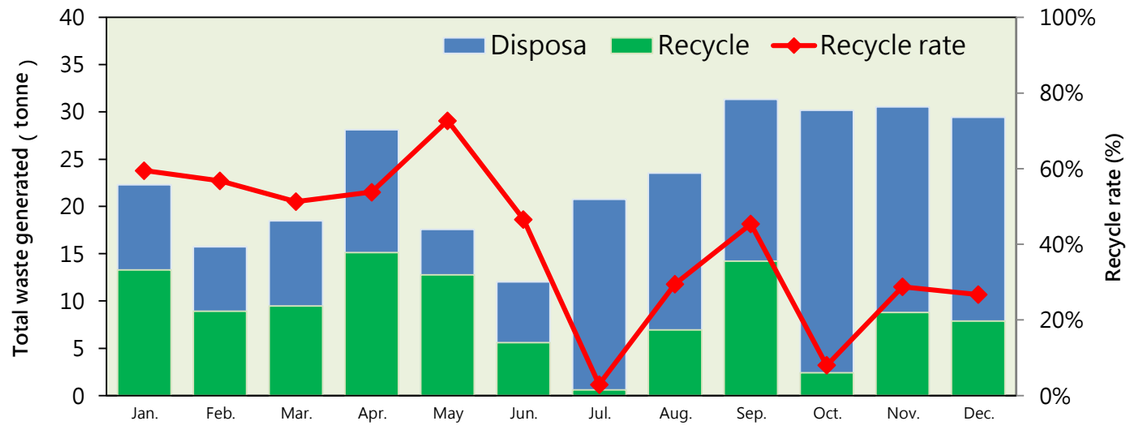
日期	108 年 7 月 16 日	時間	下午 15 時 0 分
		地點	臺北港港區
環保及港安類別	☐ 空氣污染 ☐ 噪音污染 ☐ 車輛未覆蓋帆布 ☐ 車斗未密合洩漏 ☐ 車輛行走道路未繫邊帶 ☐ 船方輸送帶下方擋泥板不符規定 ☐ 水污染(油污)未清 ☐ 排洩壓艙水 ☐ 裝卸砂石(雜貨)掉落碼頭面未清除 ☐ 其它	環保及港安類別	☐ 道路、水溝垃圾未處理 ☐ 垃圾桶垃圾未清除及清運 ☐ 亂丟廢棄物或垃圾 ☐ 船方輸送帶及防塵套管不符規定 ☐ 海面垃圾未清除及清運 ☐ 排放黑煙 ☐ 港區道路設施清潔 ☐ 號誌故障、標誌損壞 ☐ 鐵絲網、施工圍籬、柵欄遭破壞
巡查紀錄	一、A11 道路、一號管制站外及北延伸堤路面散落廢棄物已請清潔廠商清理。 二、因近日氣候及海象影響，潮汐持續將港區水域外垃圾推向港區水域內，除影響主航道通行之安全，亦使公用碼頭及工作船舶停泊區域堆積大量垃圾，為持續維護港區航行安全，擬於本處刻正簽辦之清潔合約招標作業銜接期間，另案請清潔廠商持續辦理港區環境清潔業務。		
處置措施	因氣候及海象影響致港區出現大量垃圾，為持續維護港區航行安全，擬依本處採購契約相關規定，於本處刻正簽辦之清潔合約招標作業銜接期間另案請委外廠商持續辦理。	會辦單位	

第 1 層決行

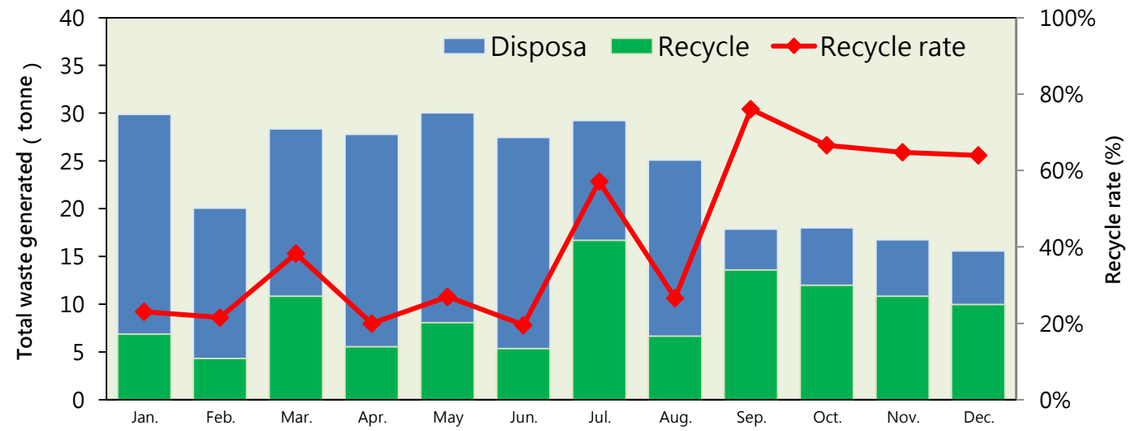
<Amount of waste recycle & disposal at the Port of Taipei>

Item	2018	2019
Total waste generated (tonne)	297.96	286.02
Disposal (tonne)	173.99	175.25
Recycle (tonne)	105.97	110.77
Recycle rate (%)	37.9	38.7

Taipei Port 2018 Recycling Status

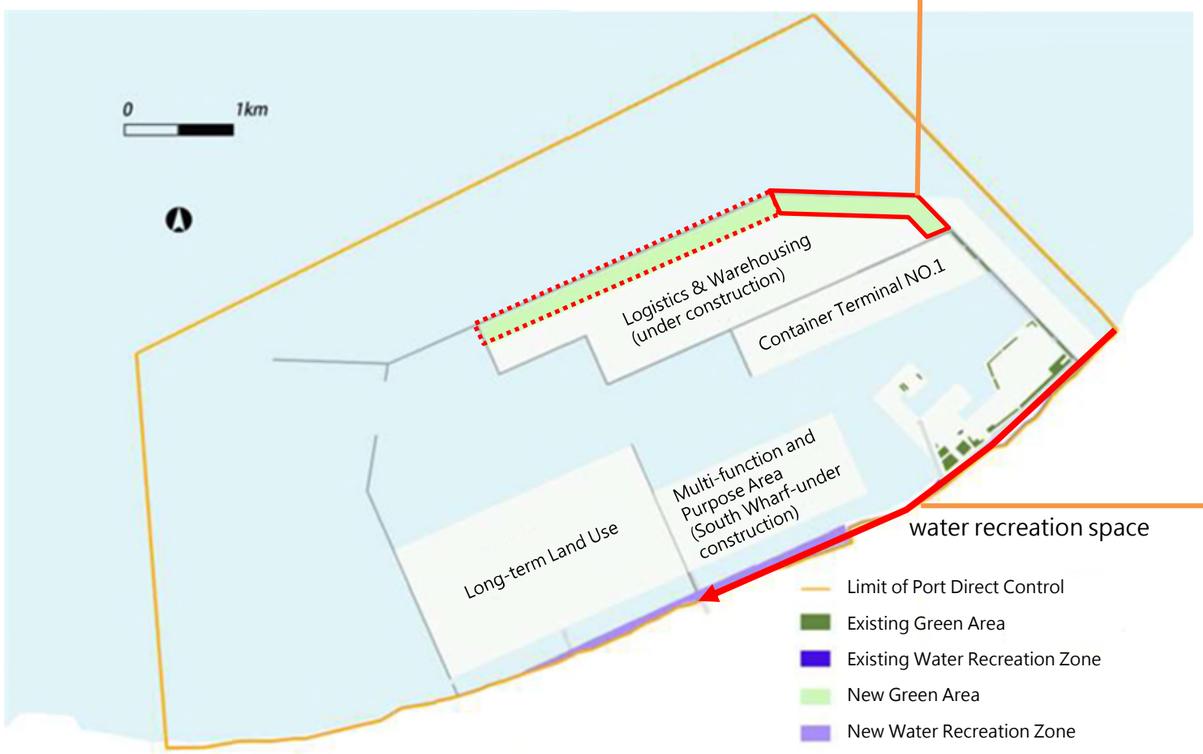


Taipei Port 2019 Recycling Status



Land Use Optimization

To make improvements according to the Executive Yuan' s examination results of Taipei Port' s overall development and to follow the National Development Plan, the port shall set its long-term goals as multidirectional and conducive to creating highly beneficial and low-polluting port service environments and increasing regional prosperity and quality of life. Therefore, in addition to enlarging port areas and enhancing operational effectiveness, the port has focused on developing plantation and green areas, as well as water recreation zones.



<Taipei Port Water Park and Green>

< North Outer Bank Windbreak Forest>

<water recreation space>

4

State of the Environment

Strengthen Cargo and Hazardous Cargo Management

The petroleum, chemical cargo storage, and transportation service companies in the port may cause potential environmental hazards because cargo leakage accidents can cause harm to neighbor ecology and residents. Therefore, improving cargo management and port security has become a crucial task for Taipei Port. Companies operating in the port shall devise corresponding emergency response plans and organize joint disaster drills to increase their capability of addressing emergency events.

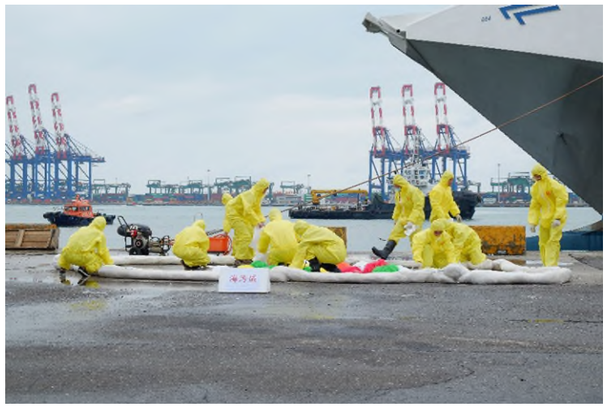
In accordance with current regulations, the Taipei Port Branch Office stipulates a set of operating procedures for a variety of dangerous cargo. For instance, radio-active stevedoring requires import and export permits from the Atomic Energy Commission under the Executive Yuan, and explosive stevedoring requires import and export permits from the Bureau of Foreign Trade and transportation certificates from the Bureau of Mines under the Ministry of Economic Affairs.

To ensure the hazardous cargo management in harbor, the Branch Office inspects stevedoring in the port more than 20 times per month and conducts nonscheduled inspection once in three months. In addition, the Branch Office contacts each port unit on a regular basis to develop emergency response plans for cargo leakage and improve the response capacity for responding to such events.

In accordance with Keelung Port's emergency response plan for the leakage of chemical substances, Taipei Port makes emergency responses to chemical leakages occurring at the port or to concerns about such incidents. In addition, the port coordinates with the response operations undertaken by the Ministry of Transportation and EPA to (1) reduce the losses due to such incidents, (2) maintain environmental well-being, (3) maintain human safety, (4) maintain regular port operations, and (5) attenuate the impact of the incident on the environment or humans.

<Inspections and Drills Conducted in 2018-2019>

Year	2018	2019
Inspections	274	255
Drills	1	1
Cross Agency Inspections	2	2



<The accident rehearsal>

<Port Hazard Inspection>

<Joint inspection>

Environmental Performance Indicators

Significant environmental issues of Taipei Port	Indicator	Calculation method	Target value	Indicator presentation (calculation details) 2018	Indicator presentation (calculation details) 2019
Air Quality	The ratio of using low-sulfur fuel or biodiesel and the consumption of low-sulfur fuel among harbor crafts	• Number of harbor crafts using low-sulfur fuel (marine diesel oil or super diesel) ÷ Total number of harbor crafts × 100% • Consumption of low-sulfur fuel among harbor crafts	The ratio of using low-sulfur fuel or biodiesel reaches 100% among harbor crafts	1 ÷ 1 × 100% = 100% Number of harbor crafts: 1 Number of harbor crafts using low-sulfur fuel Amount of low-sulfur fuel used by harbor crafts: 1,130 liter	1 ÷ 1 × 100% = 100% Number of harbor crafts: 1 Number of harbor crafts using low-sulfur fuel Amount of low-sulfur fuel used by harbor crafts: 2,830 liter
	The ratio of harbor crafts using shore power	Number of harbor crafts using shore power ÷ Total number of harbor crafts × 100%	The ratio of using shore power reaches 100% among harbor crafts	1 ÷ 1 × 100% = 100% All the harbor craft use shore power during berthing operations	1 ÷ 1 × 100% = 100% All the harbor craft use shore power during berthing operations
	Ships deceleration target completion rate	The automatic identification system for ship deceleration is applied to determine the deceleration of ships within 3-5 nm from the port	The ratio of deceleration among all the incoming and outgoing ships reaches 100% at 3-5 nm from the harbor.	In 2018, the total ship entry and exit count was 7,662, and a 100% rate of accomplishment was achieved in vessel deceleration.	In 2019, the total ship entry and exit count was 8,597, and a 100% rate of accomplishment was achieved in vessel deceleration.
	Air pollution inspection, number of cases sent to authority	• Number of land area inspections • Number of cases sent to authority • Warning ticket	• A total of 400 inspections are conducted annually • Annual decreases in the number of cases sent to authority • Annual decreases in the number of warnings	• Number of inspections: 576 • Number of cases sent to authority: 0 • Number of warnings: 6	• Number of inspections: 581 • Number of cases sent to authority: 0 • Number of warnings: 8
	Air quality pass rate ($PM_{2.5}$,PM_{10}, SO_2, NO_2)	The ratio of the measurements in the air quality monitoring station of the port that meet the "Air Quality Standards"	• $PM_{2.5}$ of the daily mean measurements satisfy the standard (<35μg /m3):80% • PM_{10} of the daily mean measurements satisfy the standard (<125μg /m3): 100% • SO_2 of the daily mean measurements satisfy the standard (<0.1 ppm):100% • NO_2 of the hourly mean measurements satisfy the standard (<0.25ppm):100%	• $PM_{2.5}$ of the daily mean measurements satisfy the standard: 100% • PM_{10} of the daily mean measurements satisfy the standard: 100% • SO_2 of the daily mean measurements satisfy the standard: 100% • NO_2 of the hourly mean measurements satisfy the standard: 100%	• $PM_{2.5}$ of the daily mean measurements satisfy the standard: 100% • PM_{10} of the daily mean measurements satisfy the standard: 100% • SO_2 of the daily mean measurements satisfy the standard: 100% • NO_2 of the hourly mean measurements satisfy the standard: 100%
Dust	Number of pollution prevention device for cargo handling, indoor cargo handling, dust collecting system	Number of dust prevention devices implemented annually	Increase/ update or maintain the number of dust prevention devices	• Number of pollution prevention device for cargo handling: 6 • Number of indoor cargo handling: 1 • Number of dust collecting system: 0	• Number of pollution prevention device for cargo handling: 6 • Number of indoor cargo handling: 1 • Number of dust collecting system: 0
	Ratio of port bulk cargo handled indoor (sand / stone + coal + other bulk cargo)	Amount of bulk cargo handled indoor÷total bulk cargo×100%	Increase / update or maintain the amount of bulk cargo handled indoor	Amount of bulk cargo handled indoor ÷ (sand / stone + coal + other bulk cargo) = (9,861,027 ÷ (5,9370,371 + 2,012,613 + 2,486,113) × 100% = 94.5%	Amount of bulk cargo handled indoor ÷ (sand / stone + coal + other bulk cargo) = (8,294,224 ÷ (4,316,201 + 1,893,985 + 2,782,281) × 100% = 92.2%
Reducing ship exhaust gas emissions	Vessel speed restriction policy	Number of inbound vessel speed restriction guidance activities held (communication records / work logs	At least maintain 100 meeting or through written propaganda letter per year	Automatic reminders for inbound speed restriction are issued hourly, for a total of 8,760 messages.	Automatic reminders for inbound speed restriction are issued hourly, for a total of 8,760 messages.

Environmental Performance Indicators

Significant environmental issues of Taipei Port	Indicator	Calculation method	Target value	Indicator presentation (calculation details) 2018	Indicator presentation (calculation details) 2019
Hazardous Cargo Handling/ Storage	Number of drills and exercises	Number of drills and exercises	1 drills a year	1 drills	1 drills
	Number of joint inspections	Number of joint inspections	1 joint inspection a year	2 joint inspection	2 joint inspection
	Number of inspections and cases sent to authority	• Number of inspections • Number of cases sent to authority	• A total of 250 inspections are conducted annually • Annual decreases in the number of cases sent to authority	• Scheduled inspection once a day and unscheduled inspection once every three months • Number of cases sent to authority: 0	• Scheduled inspection once a day and unscheduled inspection once every three months • Number of cases sent to authority: 0
Vehicle exhaust gas emissions (including cargo handling)	Number and ratio of sensory gates Installations.	The ratio of incoming and outgoing roadways installed with sensory gates Installations.	Ratio of sensory gates installations: 50%	• 4 gates, 17 lanes • 11 sensory gates • 11÷17=64.7%	• 4 gates, 17 lanes • 11 sensory gates • 11÷17=64.7%
				Expected to increase 2 sensory gates installations at south port area in October, 2020.	
Vessel sewage discharge	Performance of commissioned qualified operators on cleaning oily bilge water	Number of cleanups conducted by relevant vessels÷ number of vessels that collected oily bilge water × 100%	100% ratio of oily bilge water cleanup	• Cleanups conducted by relevant vessels (oily bilge water): 255 • Total oily bilge water collected: 3,088.45 ton • Ratio of oily bilge water cleanup: 100%	• Cleanups conducted by relevant vessels (oily bilge water): 187 • Total oily bilge water collected: 2,265.94 ton • Ratio of oily bilge water cleanup: 100%
Cargo spillage*	Number of harbor inspections, cargo spillage emergency response drills, and jointly supervised harbor safety drills	Number of harbor inspections, cargo spillage emergency response drills, and jointly supervised harbor safety drills	• 250 harbor inspections • 2 jointly supervised harbor safety drills per year	• 247 harbor inspections • 2 jointly supervised harbor safety drills	• 255 harbor inspections • 2 jointly supervised harbor safety drills
Vessels waste	General waste removed rate in vessels	Number of cleanups conducted by relevant vessels÷ number of vessels that collected waster × 100%	100% ratio of waste removed from vessels	Ratio of Waste removed from vessels: 100%	Ratio of Waste removed from vessels: 100%
Port development (land area)	• Maintain or increase port green area • Area of reclaimed land for logistics and storage	• Calculate annual port green area • Area of reclaimed land	• Maintain or increase port green area • Maintain or expand the area of reclaimed land in the port area.	• Total port green area in 2018: 28.29 acre • The area for additional land reclamation established in 2018 measures approximately 78.3 ha)	• Total port green area in 2019: 28.29 acre • The area for additional land reclamation established in 2019 measures approximately 1403. ha
Port Development (water area)	Marine water quality pass rate (pH, DO, BOD5, mineral oils, cyanide, phenols)	The ratio of port water quality measurements (obtained at the water quality monitoring station in the port) satisfying the Marine Environment Classification and Quality Criteria	Marine water quality: 100% of the quarterly pH, DO, BOD5, mineral oils, cyanide, and phenols measurements satisfy the criteria.	Class B marine water quality standard: • pH 100% • DO 100% • BOD5 100% • mineral oils 100% • Cyanide 100% • Phenols 100%	Class B marine water quality standard: • pH 100% • DO 100% • BOD5 100% • mineral oils 100% • Cyanide 100% • Phenols 100%
	Maintain port recreational spaces and facilities	Area of port recreational related space	Maintain area of port recreational related space	Total area of recreational space in 2018 : 4.3 acre	Total area of recreational space in 2019 : 4.3 acre
				A 10.5 acre water park is under construction	

5 Emergency Response

5

Emergency Response

Port Emergency Notification and Drill

In order to maintain port safety, Taipei Port Branch Office conducts daily land and marine environment inspection. When any suspicious behavior was identified, the inspection personnel will immediately notify for correction or inform competent legal authorities for legal enforcement. In 2018 and 2019, major port accidents were construction site leakage and vessel collision (no spillage). For port pollution and disaster, Taipei Port Branch Office, New Taipei City Environmental Protection Department, and the Taipei Port Branch Office of the Northern Mari-time Affairs Center of Maritime and Port Bureau of MOTC each accepts Public Nuisance Petitions. Regarding catastrophic events such as vessel or fire explosions, the Port triggers emergency response procedure to cope with disastrous incidence.

<Taipei Port 2018-2019 Accidental Incidents>

Accident type / Year	2018	2019
Vessel collision, shipwreck, fire, oil, and other chemical spillage	1	1
Ship machinery breakdown, tilt, strand	0	0
Major warehouse, storage tank explosion	0	0
Port minor pollution, fire, chemical spillage	0	0
Man overboard, occupational accident, sea drifter, others	1	4

<Pilot boat collision event>
Excerpt from: Taiwan New Life News

Port environment Inspection

To ensure port safety, the Branch Office imposed regulations on bulk stevedoring, increased the management of stevedoring, prevented overloading or leaking, and improved emergency response plans and communication mechanisms.

<2016-2017 Taipei Port Inspection Statistics>

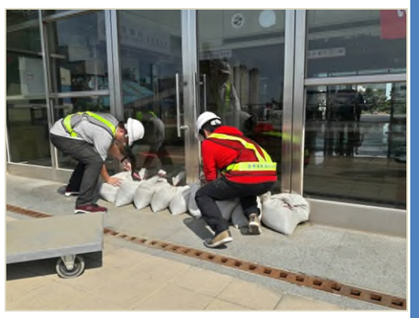
Year	2018	2019
Port Environmental Inspection	576	581
Persuasion record	6	8
Penalty from Legal Authority (MPB)	0	0
Pollution Prevention Spot Check	0	0

<2016-2017 Taipei Port Drill Records>

Year	Name of the Drill	Dates
2018	Fire Drill at Taipei Port Administration Building	May, Nov.
	Facility Security Drill	Mar., Jun., Sep., Dec.
	Flood Prevention Drill in Taipei Port	Apr.
2019	Fire Drill at Taipei Port Administration Building	May, Nov.
	Facility Security Drill	Mar., Jun., Sep., Dec.
	Flood Prevention Drill in Taipei Port	Apr.

>>Port Environmental Inspection

>>Fire Drill at Taipei Port Administration Building

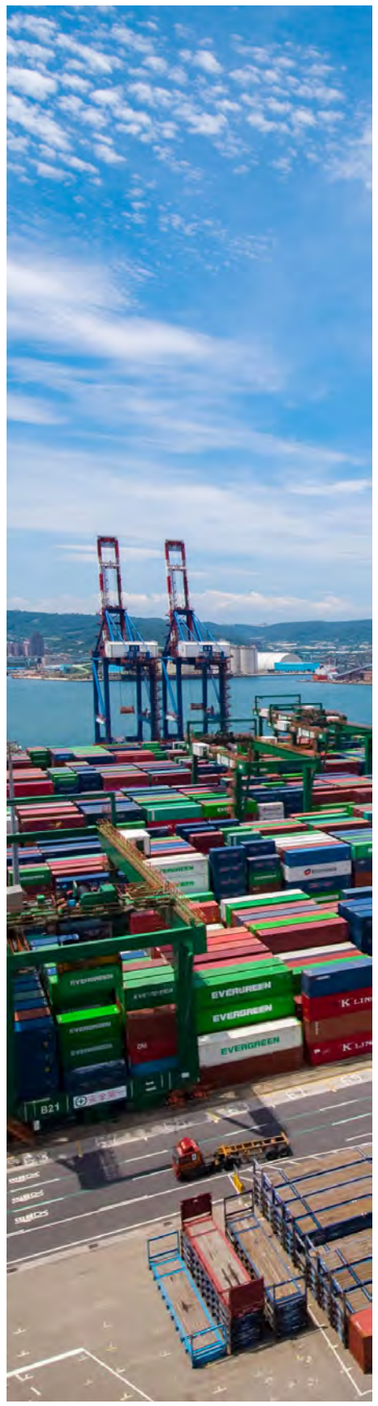


>>Flood Prevention Drill in Taipei Port

5

Emergency Response

Port of Taipei Emergency Response



MOTC
Taipei Assignment Management and Control Center

Non-Marine Accident Central Hazard Prevention and Rescue Related Bureaucratic Department

MOTC
MIO
Environmental Protection Administration
Ministry of Health and Welfare
North Region Environmental Incident Specialist Team
Ministry of Economic Affairs

Executive Yuan

National Rescue Command Center

Executive Yuan
Central Disaster Prevention and Response Council
National Security Office
Department of Information Service

Local Government

New Taipei City
New Taipei City Fire Department
New Taipei City Police (Luzhou Branch)
Environmental Protection Department

Ministry of Transportation and communications ,MOTC
Minister
Deputy Minister
Administrative Deputy Minister
Chief Secretary

MOTC
Contact Window for Reporting Hazard and Emergency

Department of Aviation and Navigation, MOTC
Harbor Section
Marine Affairs Section

Taiwan International Ports Corporation
Chairman
President

Keelung Branch of TIPC
President
Harbor Mast

Keelung Branch of TIPC
Director of the Secretariat
Director of the Civil Service Ethics Division

Keelung Branch of TIPC
Director of Occupational Safety Department

Keelung Branch of TIPC
Taipei Port Division
Senior Director
Harbor Management
Section Manager

Keelung Branch of TIPC
Harbor secretary
Chief Engineer
Chief Secretary

Keelung Branch of TIPC
Taipei Port Division
Senior Director
Harbor Management
Section Manager

Port Related units/Agencies

Keelung Harbor Police Department Taipei Unit
Taipei Harbor Subsection of Keelung Harbor Fire Brigade
Offshore Flotilla 8, the Northern Branch of Coast Guard Administration, Ocean Affairs Council

Natural disaster
Harbor Management Section

Ship robbery, damage, or terrorist attack
Harbor Management Section

Oil pollution or toxic substances pollution
Harbor Management Section

Workplace hazards
Stevedoring & Warehousing Section

Port facility damage
Construction Management Section

Stevedoring and warehousing facility damage
Stevedoring & Warehousing Section

AIS and VTS damage
Harbor Management Section

IT facility and IT security hazards
Information Technology Office

Misbehavior of ship crews or tourists
North Maritime Affairs Center Taipei Port Office

Compound or other disasters
Harbor Management Section

6 Involvement and Collaboration

Solar power equipment for East 1-1 and 2 Warehouse in Taipei Port

<Concern/Motivation>

The main source of greenhouse gas emissions in Taipei Port is electricity consumption, which is equivalent to more than 95% of the port's carbon dioxide emissions. In response to global green port development trend, Taipei Port aims to become a low-carbon and sustainable port with green energy.

<Solution >

To achieve the goal of sustainable port, Taipei Port installed solar power equipment on warehouse roof. With clean, pollution-free, and safe characteristics, solar power could not only decrease electricity consumption of port but also reduce carbon emissions.

<Effect/Benefits>

- Solar power will reach 1.45 million kWh per year, which could supply electricity for 410 households, and reduce CO_2 emissions about 772 tons after completion.
- Increase the function of households with power generation and varied scenery.
- Reduce the indoor temperature of households and optimize the working environment.
- Extend the service life of roof by blocking out the sunlight.
- Create stable income from solar power.

<Participants>

Taipei Port Branch Office

<Strategies>

- Exemplifying
- Encouraging

<Environmental Issues>

Energy consumption

<Implementation/Timeline>

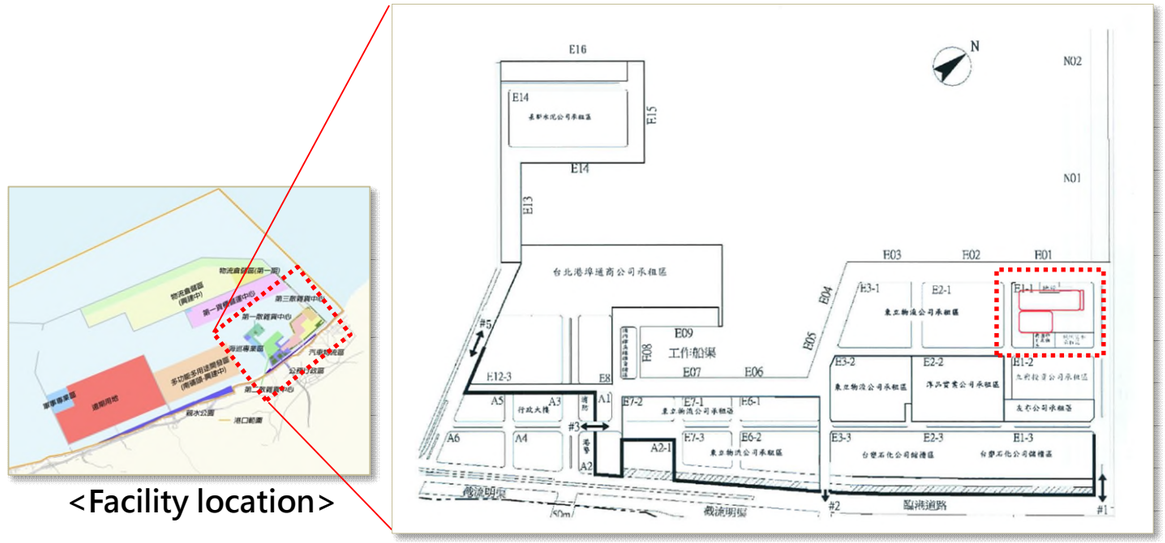
2019-2020

<Investment>

2019-2020 €4,682,004.27

<Stakeholders>

- Taipei Port Branch Office
- Taiwan Power Company
- port tenants
- New Taipei City Environmental Protection Department
- Environmental Protection Administration



<Facility location>

Taipei Port
Contact Person: Mr. Han Chang, Lin
Taipei Port Branch Office Harbor Management Section Manager
Phone：+886-2-2619-6005
E-mail：hclin168@twport.com.tw

The Water Recycling Center at South Wharf Area of Taipei Port

<Concern/Motivation>

Taipei Port is an artificial port created by reclaiming land, and its scale continues to expand. With the increasing development of port, the domestic sewage from service personnel and ships may grow up accordingly, which might impose negative impact on the environment of port.

<Solution >

The main sources of sewage in Taipei Port are various, including domestic sewage from administrative staff, domestic sewage and oily sewage from ships and sewage from terminals as well as storages in port. Currently, the oily sewage from ships is treated by qualified operators, and the domestic sewage as well as business wastewater from east wharf are collected to Bali Sewage Treatment Plant for advanced treatment. After the completion of Water Recycling Center, domestic sewage and business wastewater at south wharf will be treated by the center and will be discharged after tertiary treatment, which could avoid polluting the water quality of port.

<Effect/Benefits>

- Water Recycling Center will treat 1,500 tons of wastewater per day after completion, which could improve the quality of environment and reduce water pollution in port.
- Strengthen the social image and competitiveness of Taipei Port.
- Serves as an environmental education site about water resource for people.
- Save water consumption by reusing disinfected water for toilet flushing and watering.

<Participants>

Taipei Port Branch Office

<Strategies>

- Exemplifying
- Enabling

<Environmental Issues>

Energy consumption

<Implementation/Timeline>

2019-2021

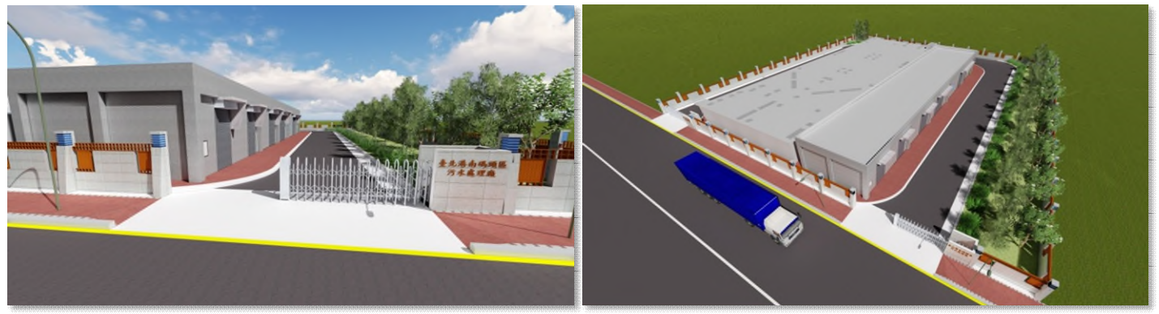
<Investment>

2019-2021 € 4,776,083.30

<Stakeholders>

- Taipei Port Branch Office
- port stevedoring industries
- port tenants

<Facility location>



<Schematic diagram of the water recycling center at south wharf area >

Port of Taipei
Contact Person: Bo Chuan, Chang
Construction Management Division of the Keelung Branch Office of TIPC
Phone：+886-2-2619-6081
E-mail：bochung @twport.com.tw

Involvement and Collaboration

The Taipei Port Branch Office 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.

Participation organizations

Association

Association of Pacific Ports(APP)

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

The International Association of Ports and Harbors(IAPH)

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

Ports

Xiamen Port Holding Group Co.

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

Pingtan Comprehensive Pilot Zone Administration Committee in Fujian

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

Government

North Maritime Affairs Center, Maritime and Port Bureau, MOTC

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

Institute of Transportation, MOTC

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

Environmental Protection Administration

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 Environmental Protection (1993)," and this partnership has led to the development of a series of strategies relating to port environmental issues.

New Taipei City Environmental Protection Department

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

Bali District Hall

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

Involvement and Collaboration

Industries

Century Wind Power Co. Ltd

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

Chia Hsin Int' l Corp.

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

Goldsun Building Materials Co., Ltd.

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

Tonglit Logistics Corp.

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

Taipei Port Container Terminal Corp.

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

Industries

Formosa Petrochemical Corporation

Chun Pin Enterprise Co., Ltd.

BOM AMI ENTERPRISE Co.,Ltd.

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

Academic Institution

National Taiwan Ocean Univ.

National Sun Yet-Sen Univ.

National Cheng Kung Univ.

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.

7 | Training

7
Training

Employee Education

In compliance with its environmental policies, the Taipei Port Branch Office provides suitable environmental education and training programs to raise environmental awareness, and improve the competitiveness of the Port of Taipei.

In 2018 and 2019, the Taipei Port Branch Office organized in total 12 environmental education and occupational safety courses for its staff members. Course topics cover pollution prevention, natural disaster, contagious disease control, environmental impact assessment, etc.

<Taipei Port 2018-2019 Occupational Safety and Health Training>

Year	Content	Date
2018	Training of Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED).	3/21
	Port Occupational Safety and Health	5/17
	Educational seminars for employees and contractors	5/17
2019	Training of Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED).	3/20
	Port Occupational Safety and Health	5/10

<Taipei Port 2018-2019 Environmental Education Training>

Year	Content	Date
2018	Static Environmental Education and Training - Know Taiwan	12/13
		12/21
2019	Environmental Education and Training of Longuan Ecological Park	6/19
		6/21
		6/25

Environmental Education and Training of Longuan Ecological Park


Static Environmental Education and Training - Know Taiwan


Fire training and education seminar

8 Communication and Publication

8 Communication and Publication

Communication and Publication

Promotion activities, seminars, workshops, publications, websites, and exhibitions have been organized to align Taipei Port with contractors and potential partners. Therefore, publishing the port’ s relevant information is companies, academic institutions, and subsidiary units.

To present the positive outcomes of creating green ports in Taiwan to international society, TIPC established a website, which features Chinese and English versions of content, to demonstrate its green policies and create an exchange and communication platform with foreign countries.

Forum / Visit

< Forum of free trade port development and talent demand>

<Indonesian foreign guests visit>

Websites

<Front Page of Taipei Port Website>

<Chinese and English web pages for TIPC Green Policy>

Communication and Publication

Publication / Visit

<2018/3/30> Bali district office visiting Taipei Port
Bali district office visited business and facilities of Taipei Port.

<2019/1/17> Bali junior high school visiting Taipei Port
Total of 170 teachers and students from Bali Middle School visited Taipei Port. The port introduced the current status and business of port with introduction DVD. Besides, Tonglit Logistics Corp. also introduced their business to students.

<2019/10/28> Bali district office and local chiefs visiting Taipei Port
The senior director of the Taipei Port Operations Office and relate personnel introduced the current status, major construction and offshore logistics areas of Taipei Port.

<2019/3/23> National defense visiting
Ministry of National Defense provided community services and boarding activities in Taipei Port.

Visiting

<Observing the Second Bulk Goods Center>


<Bali district office visits Taipei Port>


<National defense visiting>

Environmental Policy Promotion

9 Green Accounting

9

Green Accounting

Environmental costs

In order to improve the awareness among staff, environmental maintenance, environmental quality, emergency response abilities, and public understanding of the port, Taipei Port Branch Office invested in the following categories.

The Summation of Costs invested by the Investments of the Taipei Port Branch Office in the Environmental Aspects is €2,352,910 in 2018 and € 2,112.150 in 2019.

Environmental investments at the Taipei Port

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

<Costs related to Environmental Issues at Taipei (Unit: EUR)>

Items of Expenses	2018	2019
Staff	369,660	354,210
Environmental Maintenance & Management	912,100	726,950
Environmental Monitoring	1,043,590	1.003,400
Emergency Response	27,220	27,220
Communication & Publication	350	370
Tota	2,352,910	2,112.150

Environmental Assets

To develop the Port of Taipei into an ocean-going container port, air-sea port, and distribution port for automotive and other industries, the Keelung Branch of TIPC has launched a series of port development projects (divided into continuing and new projects) and projects for general buildings and equipment. A portion of these projects are concerned with environmental aspects. For example, land reclamation and barrier repair. The Keelung Branch of TIPC invested in fixed assets for €29,552,670 and €45,840,890 in 2018 and 2019, respectively.

<Assets invested in Environmental Issues (Unit: Thousand in EUR)>

	Project	Amount
2018	Public facilities project in Taipei Port	8,351.18
	The embankment construction - land reclamation project for south wharf B area in Taipei Port	5,926.08
	Phase II seawall construction works - land reclamation project for the logistics and warehouse area in Taipei Port	1,454.56
	The waste cleaning in waterfront recreational areas of Taipei Port	2,886.58
	South wharf construction project in Taipei Port	3,600.91
	The second warehouse (East 1-1) construction project in Taipei Port	5,028.54
	New construction of North 1 and North 2 wharf (with boarding passage) project in Taipei Port	1,591.94
	Public road and ground paving renovation project in Taipei Port in 2018	553.97
	East 1-1 multifunctional warehouse expands customs facilities in Taipei Port	33.47
	Taipei Port fender renovation project	79.31
	Stern springboard optimization and improvement project in North 1 wharf of Taipei Port	46.13
2019	Public facilities project in Taipei Port	13,675.32
	The embankment construction - land reclamation project for B area in south wharf of Taipei Port	8,319.12
	Phase II seawall construction works - land reclamation project for the logistics and warehouse area in Taipei Port	2,630.40
	Phase II and III seawall construction works for the logistics and warehouse area in Taipei Port	9,739.87
	Deeping project for navigation channels in Taipei Port	3,176.76
	Public road and ground paving renovation project in Taipei Port	240.07
	Waste cleaning in waterfront recreational areas of Taipei Port	1,541.28
	Public road and ground paving renovation project in Taipei Port, 2019	134.38
	Dredging project for navigation channels in Taipei Port	722.11
	Construction of wharf-S08 and wharf-S09 at South wharfs project of Taipei Port	3,539.53
	The second warehouse (East 1-1) construction project in Taipei Port	237.82
	Restoration project for the east wharf-15 of Taipei Port	699.42
	Public facilities construction for eternally coast protective mooring post in south wharf of Taipei Port	1,168.02
	East 1-1 multifunctional warehouse expands customs facilities in Taipei Port	16.81

10 Improvement Recommendations

Taipei Port began with two aggregate terminals built by transporting sand from eastern Taiwan to northern Taiwan, until August 2020, there have been 21 operation docks and also continue to increase various port facilities. To cooperate with port development trends and national economic policies, Taipei Port is positioned as a port in the northern part of Taiwan with ocean cargo shipping, value-added logistics center and sea–air freight.

In response to the trend of international green ports and in line with relevant government environmental policies, Taipei Port continues to build various environmental protection and green energy facilities, including 24-hour environmental monitoring systems, closed storage, sewage sewers, solar power generation systems, and water recycling centers.

With the goal of green energy, we hope to build Taipei Port into an international high-quality green port and fulfill corporate social responsibilities.