



## Environmental Monitoring of Taiwan International Commercial Ports



  
**Taiwan International Ports  
Corporation Ltd. (TIPC)**  
2015.June



### Editing Principles

This document demonstrates the trends of port environmental quality in 7 international commercial ports of Taiwan International Ports Corporation (TIPC).

The data is collected and analyzed independently between March, 2012 to December, 2014.

To engage stakeholders with the port operation and environmental management, the brochure presents not only the environmental monitoring data, but also what TIPC currently conducts to raise the awareness and protect the environment.



### About TIPC

Taiwan International Ports Corporation Ltd. (TIPC) was founded in 2012 in response to government reorganization and global trends of division of Administration and Operation.

Today, the TIPC administers Taiwan's 7 international ports (Keelung, Taichung, Kaohsiung, Hualien, Taipei, Suao, and Anping) and two domestic ports (Budai and Penghu) as a single, integrate and efficiently run business cluster.

TIPC's four subsidiaries at the Ports of Keelung, Taichung, Kaohsiung and Hualien handle all regular port operations and business relations.



### Environmental Policy

We commit to:

- 1)Implement and follow through with the Green Port Program 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; and
- 5)Strengthen the communication with local communities, and pursue sustainable development for both the ports and the cities where we are operating.



### Responsibilities

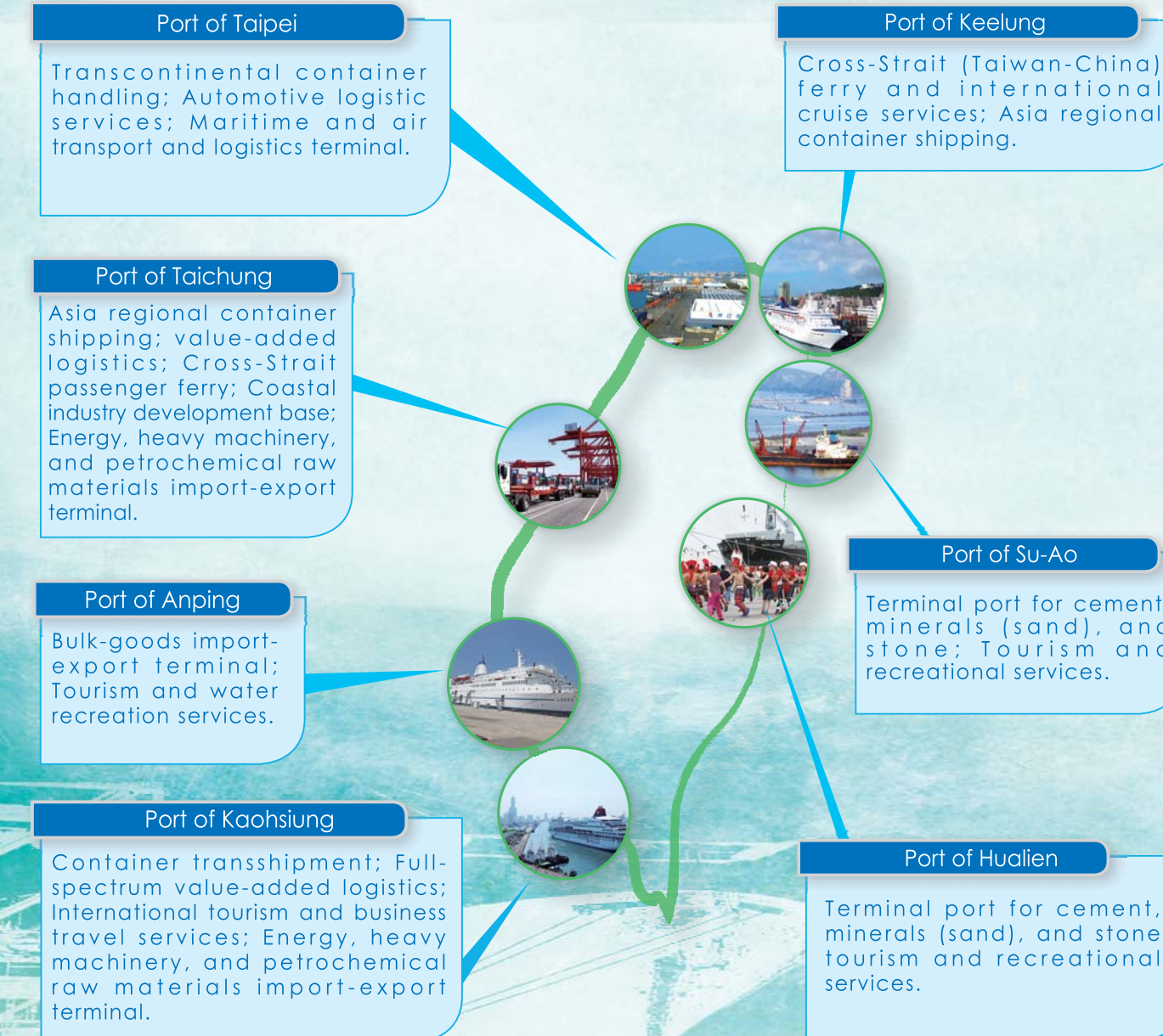
Tasked to handle comprehensive port operations, enhance operational efficiencies and responsiveness, raise the international profile of Taiwan's international commercial ports, and spur domestic regional economic growth.



Corporate strategies and goals focus on introducing advanced international commercial port management concepts to enhance ports' existing core business services.



### Location and Core Business Services of Ports



### We Response to key environmental concerns



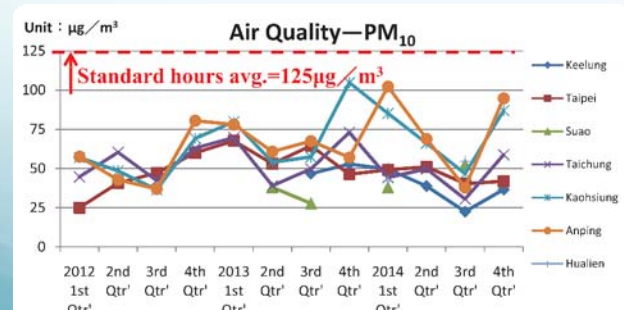
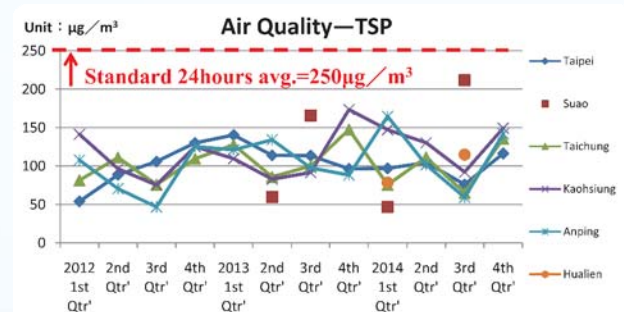




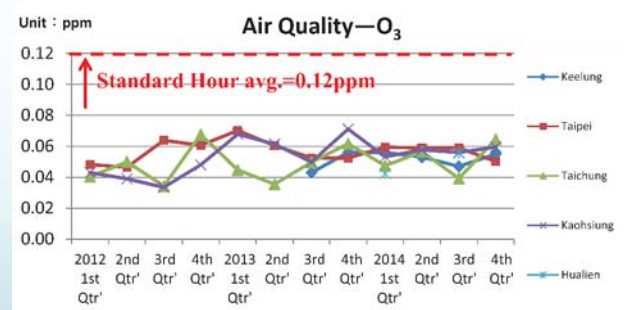
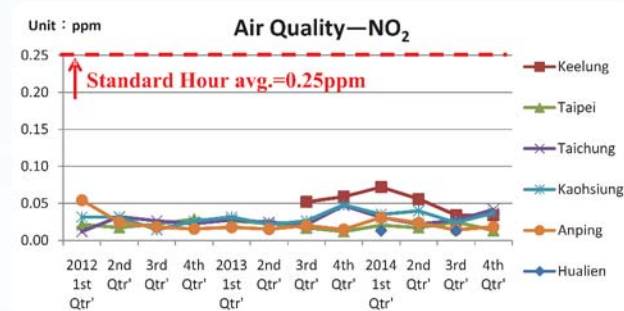
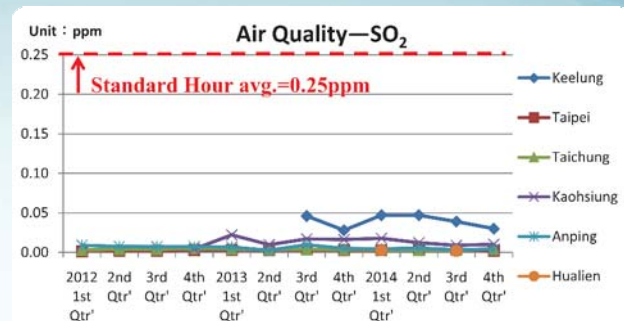
## Air Quality

- Major monitoring pollutants are :
  - Total Suspended Particle (TSP)
  - Suspended Particulates (PM<sub>10</sub>)
  - Sulfur Dioxide (SO<sub>2</sub>)
  - Nitrogen Dioxide (NO<sub>2</sub>)
  - Ground-level Ozone (O<sub>3</sub>)

- The trends are shown as below.



## Air Quality

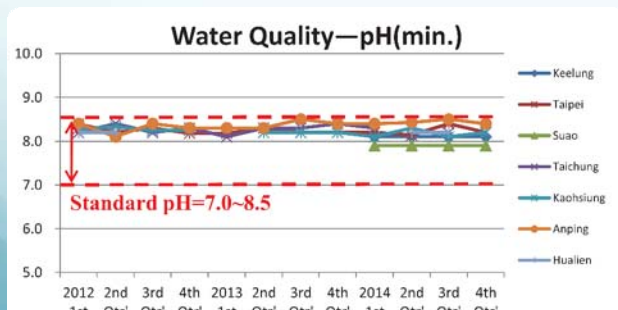
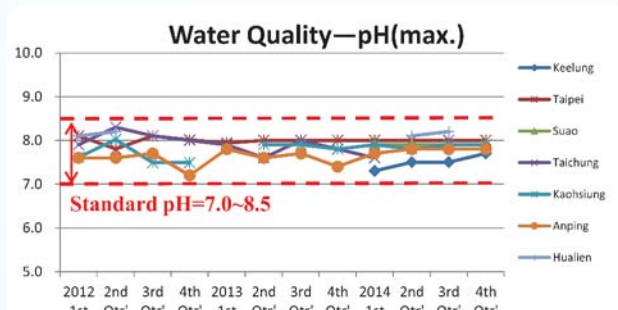


- All pollutants of ports meet the NAAQS(National Ambient Air Quality Standard).



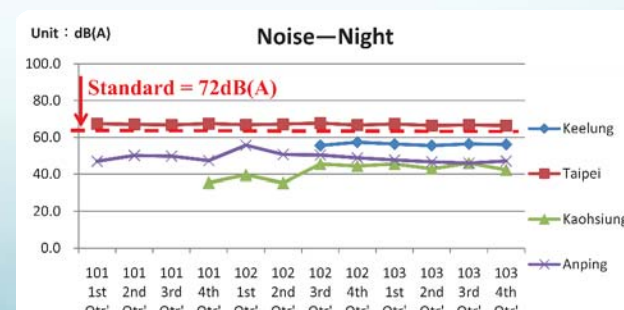
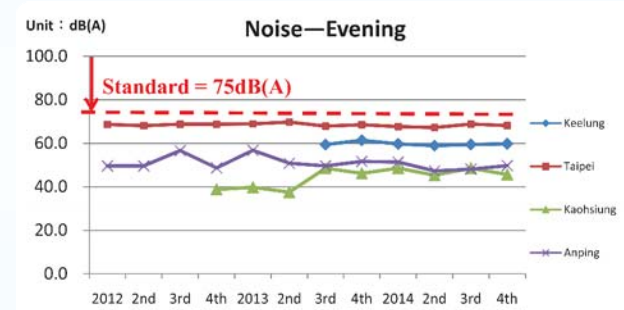
## Water Quality

- Based on the quarterly water monitoring from 7 ports between 2012 to 2014, the overall results of maximum and minimum pH were in compliance with the coastal environmental quality standards.



## Noise Control

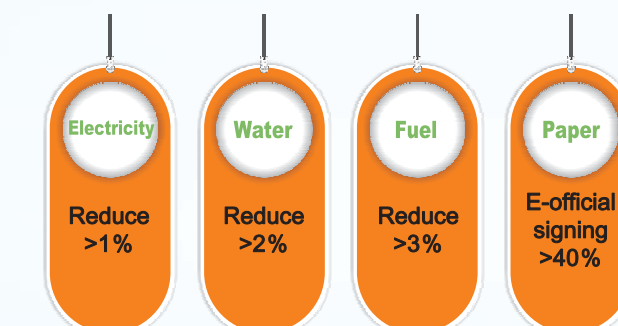
- The traditional definition of noise is “unwanted or disturbing sound”.
- To control noise in ports, TIPC has done things:
  - Limit vehicles speed
  - Road improvement
  - Build acoustic barriers
- All ports meet Revised Noise Control Standards in 2013.



## Response to Environmental Concerns

### FOUR ASPECTS OF ENERGY REDUCTION PROJECT

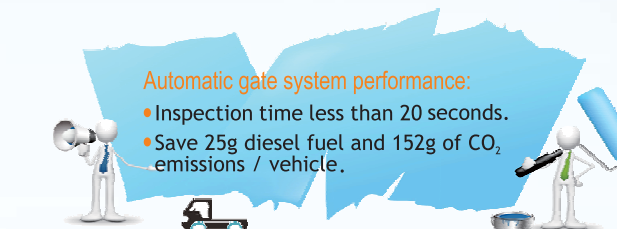
- The project aspects include electricity, water, fuel, and paper.
- TIPC has achieved the annual reduction target between 2012 to 2014, in total.



←Solar energy  
↓Rainwater recycling facilities

### AUTOMATIC GATE SYSTEM

- In order to improve gate inspection efficiency and air quality, TIPC gradually introduces automatic gate security systems.



Automatic gate system performance:  
•Inspection time less than 20 seconds.  
•Save 25g diesel fuel and 152g of CO<sub>2</sub> emissions / vehicle.

### Statistics on the automation of port lanes

Port	Total number of vehicle lanes (entry and exit)	Automated vehicle lanes (entry and exit)	Degree of automation
Keelung	40	27	68%
Taichung	43	15	35%
Kaohsiung	53	30	57%
Hualien	6	6	100%
Taipei	18	10	56%
Su-Ao	5	2	40%
Anping	8	4	50%



## Communication and Interaction

- In addition to achieving operation excellence and supporting the nation's economy, TIPC values its relationship with residents.
- For TIPC, the ports must take the initiatives to interact with public and to create a friendly environment for all.



## Environmental Education



- TIPC organizes activities for employees and public on the importance of environmental protection as well as biological diversity.

- TIPC places great importance on the relationship between residents and maintains green buffer zone with existing water front areas and initiated restoration projects of old port area to create new port-city interfaces.

