The Sustainable Development and the Construction of Resource-saving and Environmentally Friendly Port in Shanghai

Shanghai Transport and Port Authority
February 20, 2012
It is the fundamental principle of the Chinese government to adopt the sustainable development and the harmonious co-existence of human and the nature.
In October 2005, the Chinese government made the strategic decision of the construction of resource-saving and environmentally friendly society.
China’s Ministry of Transport put forward the target of the construction of resource-saving and environmentally friendly ports.
Specific Targets:

- Overall energy consumption of total cargo handling: Reduce by about 10%.
- Cargo throughput per unit berth length: Increase by about 50%.
- Energy Efficiency: Increase significantly.
- Port overall particulate mitigation: Reach 70%.
- Port Wastewater Treatment: Reach 100%.
- Major pollutant discharge: Decrease significantly.
The Guidelines on the Construction of Resource-saving and Environmentally Friendly Port in Shanghai

Overall energy consumption of port cargo handling
- Reduce 8% by 2015;
- Reduce 10% by 2020

CO2 emission from port cargo handling
- Reduce 10% by 2015;
- Reduce 12% by 2020

Energy saving and emission reduction by RTG retrofit
- Reach 100% by 2015

Overall Port particulate Control/mitigation rate
- Reach 70%

Wastewater treatment rate
- Reach 100%

Vessel bilge water and trash Collection rate
- Reach 100%
# Evaluation Indicators

## Indicators of Resource-saving Ports

<table>
<thead>
<tr>
<th>Num</th>
<th>Indicator</th>
<th>Unit</th>
<th>Goals</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overall energy consumption of total cargo handling</td>
<td>10,000 tons of coal /10,000 tons Cargo throughput</td>
<td>Reduce 8% by 2015; Reduce 10% by 2020</td>
<td>Mandatory</td>
</tr>
<tr>
<td>2</td>
<td>Shore power application rate</td>
<td>%</td>
<td>By 2020, shore power usage in all international cruise terminals, major passenger terminals, 30% of major container terminals and break bulk terminals</td>
<td>Reference</td>
</tr>
<tr>
<td>3</td>
<td>Coastline usage efficiency</td>
<td>10,000 tons/meter</td>
<td>Continue to increase</td>
<td>Mandatory</td>
</tr>
</tbody>
</table>
# Evaluation Indicators

## Indicators of Environmental Friendly Ports

<table>
<thead>
<tr>
<th>Num</th>
<th>Indicator</th>
<th>Unit</th>
<th>Goals</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SO2 and NOx reduction rate</td>
<td></td>
<td>Reduce Significantly</td>
<td></td>
</tr>
</tbody>
</table>
| 2   | Port CO2 emission                                                        | tons | By 2015, emission reduce by 10% from 2005 level;  
By 2020, emission reduce by 12% from 2005 level | Mandatory |
| 3   | RTG retrofit rate for energy saving and emission reduction                | %    | 100% by 2015                              | Mandatory |
| 4   | Port particulate control /mitigation rate                                 | %    | 70%                                       | Mandatory |
| 5   | port wastewater treatment rate                                            | %    | 100%                                      | Mandatory |
| 6   | Vessel bilge water and trash collection rate                              | %    | 100%                                      | Mandatory |
Four Phases of the Construction of Resource-Saving and Environmentally Friendly Port in Shanghai

◆ Preparatory Phase (2011)
◆ Initiation Phase (2012-2014)
◆ Completion (2018-2020)
Sustainable Development in Shanghai Port

I Make adjustment on transportation methods

- Focusing on domestic trade instead of foreign trade
- Focusing on high-end products instead of popular consumer goods
- Increase Import and reduce export
II Make functionality adjustment in Shanghai Port

- Make functionality adjustment and relocate facilities in the Huangpu River Docks
II Make functionality adjustment in Shanghai Port

- plan to build travel boat docks and yacht docks and establish a basic home harbor of international cruises.
II Make functionality adjustment in Shanghai Port

- Reduce small-scaled building material and coal docks and establish large-scaled dry bulk distribution centre.
II Make functionality adjustment in Shanghai Port
◆ Combine some public docks and enterprise docks into one and achieve the muti-functionality in coastline resources.
III Improve the transportation System

◆ Advance the construction of inland waterways and inland harbors and promote the vessel-to-vessel transit.

◆ Build several cross-river tunnels and establish the traffic channel from Chongming to Qidong.
Sustainable Development in Shanghai Port

IV Improve equipment fuel efficiency

Establish a comprehensive energy consumption cap for the port operations and enforce equipment fuel consumption and carbon emission limits.
V Promote the use of energy efficient and emission reduction technologies

Promote the container RTG “diesel to electricity” energy-saving retrofit and mobile shore power system.
V Promote the use of energy efficient and emission reduction technologies

Introduce and develop lighter, energy efficient, electrical powered loading and unloading equipment with frequency control capability and promote LED lighting.
VI Adopt the renewable and alternative energy

Research and adopt hybrid-powered vessel and other vessel power as solar, wind, natural gas and hot air pump, etc.
VII Improve the information management

Shanghai will continue to focus on technology innovation and sustainable development. Promoting energy conservation and emission reduction, Shanghai port is determined to become a "green" port and helps to boost the development of China's economy and promise a happy life to all Chinese.
Shanghai will continue to focus on technology innovation and sustainable development. Promoting energy conservation and emission reduction, Shanghai port is determined to become a "green" port and helps to boost the development of China's economy and create a happier life to all Chinese.
Thank You