



# **Climate Change and Sea Transport**

## **The Environmental Ship Index**

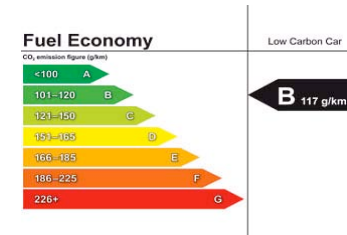
creating a worldwide scale to promote the environmental  
performance of shipping

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## WPCI current projects

- Low emission yard equipment
- On-shore power supply
- Carbon footprint
- **Environmental Ship Index**
- Intermodal transport
- Sustainability in lease contracts



## Content of the presentation

- Ship emissions; why ports care
- Ship emissions; mitigation strategies for ports
- The Environmental Ship Index (ESI)
  - What is it, how will it work
  - Present status
  - Way ahead
- CO<sub>2</sub> Ports and sea transport



## Ship emissions, why ports care



- Sustainable development, licence to operate and grow
- Responsibility for local quality of life
- Air quality as a limiting factor for port development
- Implications of climate change
- Incorporate sustainability in the port use and port dues

# Ship emissions, current options for ports [1]

- Rely on regulations of international bodies
  - IMO (mandatory limits on NO<sub>x</sub> and SO<sub>x</sub> and EEDI, EEOI and MBI developments for CO<sub>2</sub>)
  - UNFCCC (?)
  - EU (?)



# Ship emissions, current options for ports [2]

- Port clean air and climate strategies
  - Improving port efficiency / modal shift
  - Environmental zoning
  - On-shore power supply
  - Vessel speed reduction
- Implementation powers
  - Port by-laws
  - Lease requirements
  - Capital funding
  - Voluntary agreements



## Scope and influence



**Port Authority**

**Influence: ++**

**Effect: - -**



**Port and industrial complex**

**Influence: +**

**Effect: +**



**Supply chain**

**Influence: +/-**

**Effect: ++**

Global mechanisms have the largest potential to have a meaningful impact on the environmental performance of shipping



## ESI: what it is [1]



- The ESI indicates the environmental performance of seagoing ships (air emissions) relative to IMO rules
- This provides a tool that will assist ports and other parties to promote clean shipping
- Use is on a voluntary base
- Maximum responsibility with the ship owner

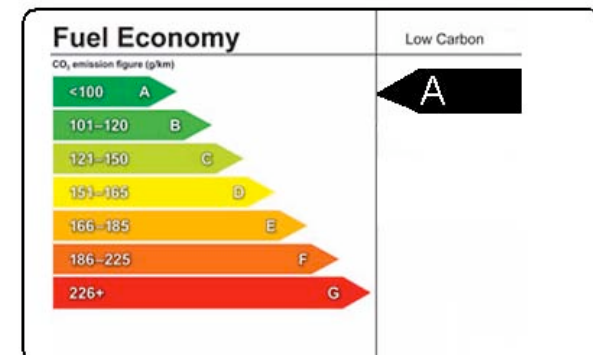
## ESI: what it is [2]

- ESI is composed of credits (0 – 100) for above-baseline environmental performance regarding NO<sub>x</sub>, SO<sub>x</sub> (indirect PM) and CO<sub>2</sub>
- NO<sub>x</sub>: depending on performance of main- and auxiliary engines
- SO<sub>x</sub>: depending of the sulphur content of the fuels used
- CO<sub>2</sub>: bonus for monitoring and reporting of CO<sub>2</sub> emissions



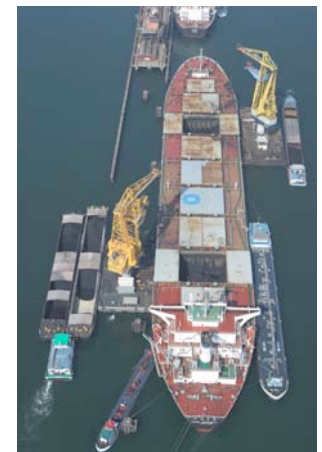
## ESI: what it is [3]

- Simple and transparent
- ESI value is easy to determine, use and verify
- World wide recognition
- Suitable for all sizes and types of ships

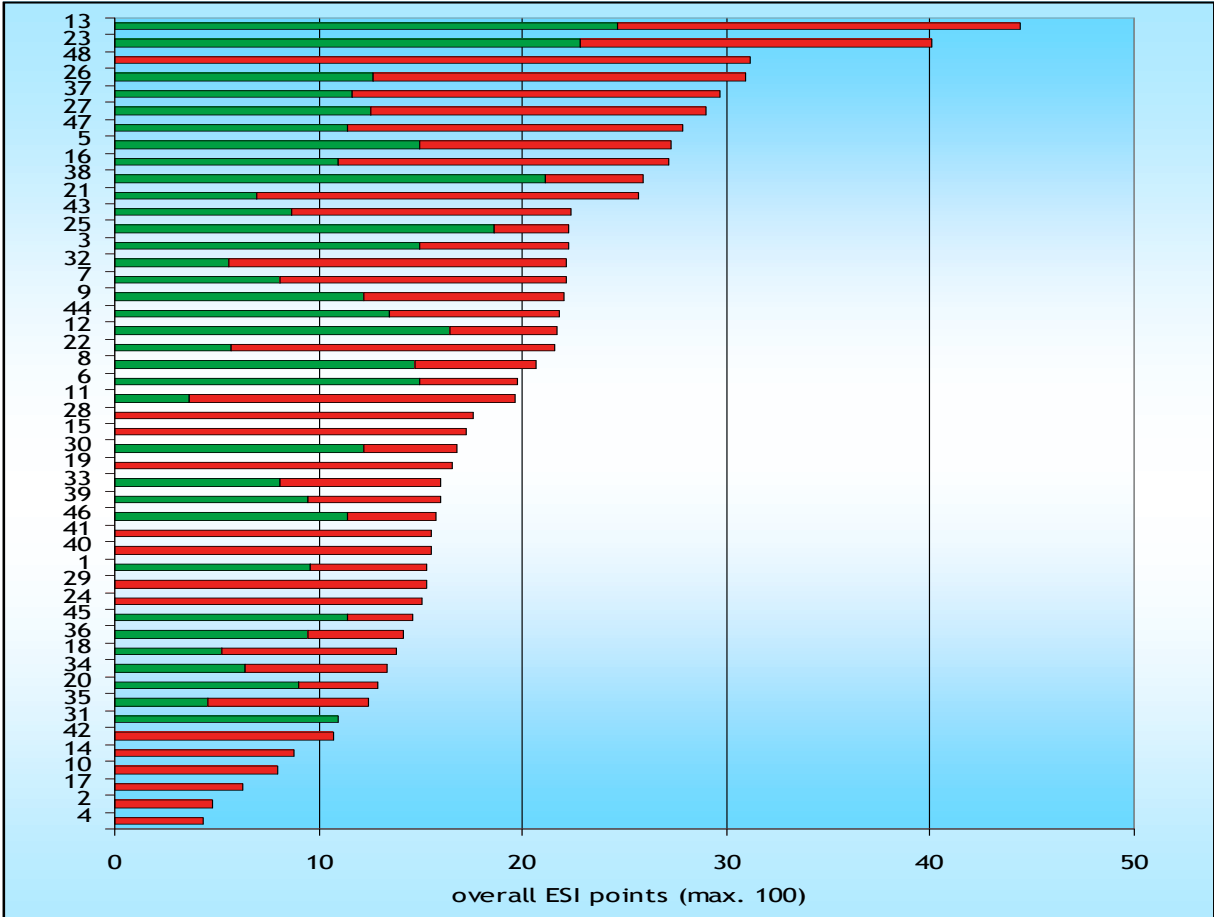


## ESI: present status

- ESI study available at [www.ce.nl](http://www.ce.nl)
- Overall ESI formula established
- Formula has been tested on different ship types
- ESI administration is specified
- ESI web-based application to be developed
- Consultation with stakeholders



# ESI test results

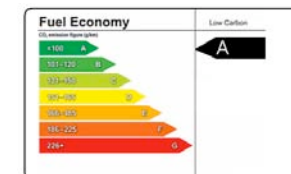


overall ESI scores (max. 100)

## ESI: how will it work [1]

- Ports may devise an incentive scheme based on ESI and inform the ESI administration
- The ESI administration will enter this into the central database

	ESI value	Incentive
Port A	>40	rebate on port tariff
Port B	>30	rebate on port service charge
Port C	.....	.....



## ESI: how will it work [2]

- Ships may obtain an ESI by sending in verified engine certificates and bunker fuel information
- The ESI administration will calculate the ESI and enter this into the central database



## ESI: how will it work [3]

- On entering an ESI-Port, the ship will inform that port of its ESI
- The port can then apply incentives for clean shipping



## ESI: the way ahead

- Stakeholder presentations of the ESI in 2009
- Launch of the web-based application in 2010
- Set-up of a ESI ships data base and data base for promotional schemes in 2010
- ESI in use in 2011

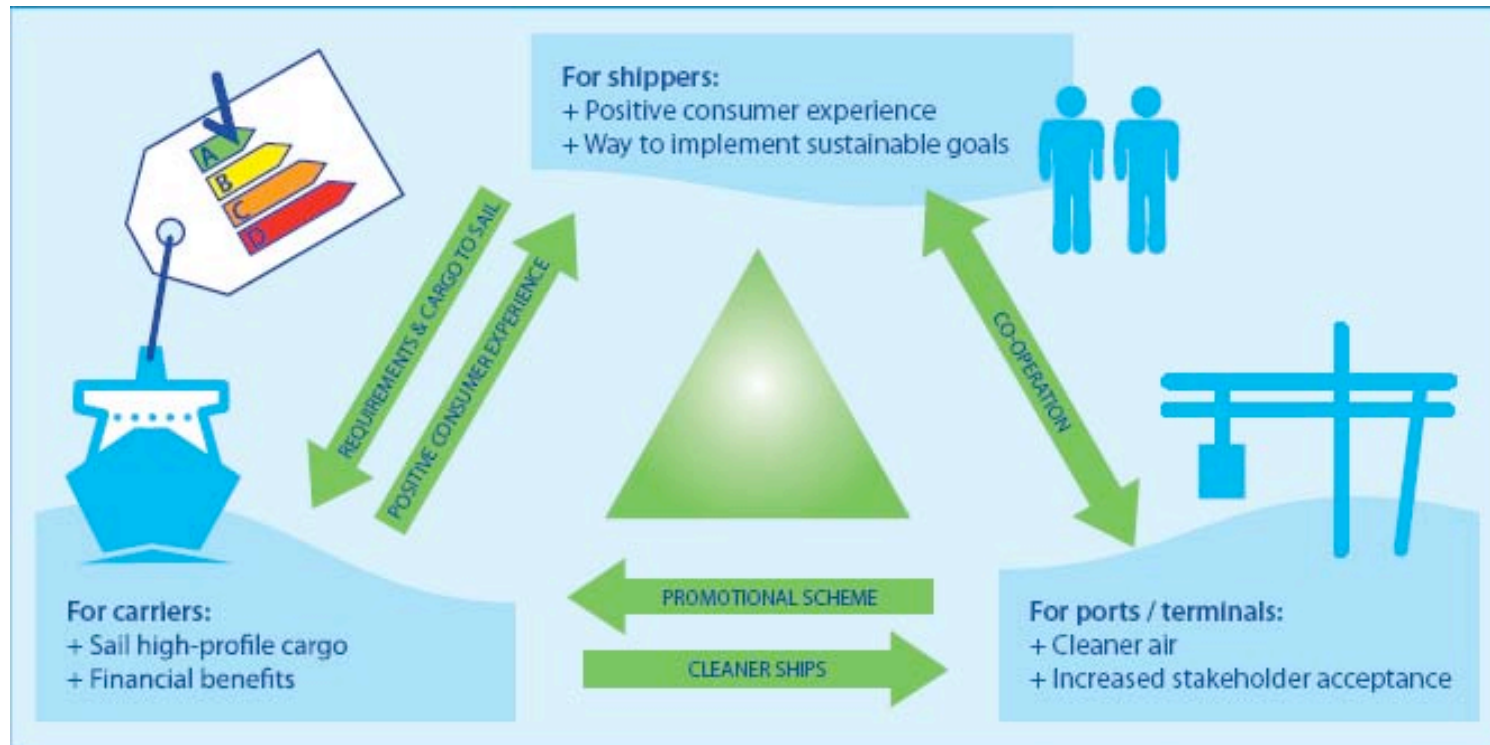


## Who is involved

- Ports of Amsterdam, Antwerp, Bremen, Hamburg, Le Havre, Rotterdam (ESI team)
- Supported by many port authorities, IAPH and ESPO



## In close cooperation with stakeholders



# CO<sub>2</sub> Ports and sea transport

- Instruments needed
- IMO as the primary developer
- Measures should be source oriented
- Safeguard level playing field for ports
- ESI ready to implement CO<sub>2</sub> performance indicators



Thank you for your attention!



[www.wpci.nl](http://www.wpci.nl)