Mitigating the effects of Port Operations on Climate Change

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Statistics

- Surface: 10,500 ha
- Commercial sites: 4,900 ha
- Employment in the port: 71,300
- Throughput 2007: 407 mio. Ton
- 37,500 seagoing vessels - 130,000 inland vessels
- Port entry to city > 40 km
Air quality

- Health and quality of life
- Urban development
- Port development and expansion
Airquality

EU norm PM10 to date:
Average per annum: 40 µg/m3
Max. 35 days average: 50 µg/m3

PM 2.5 norm (2015): 25 µg/m3

EU norm per 2010
Average per annum:
40 µg/m3
Sources NOx + PM10 (2003)

Bronnen NOx
- industrie/energie
- wegverkeer
- scheepvaart
- overigen

Concentraties NO2
- industrie
- wegverkeer
- scheepvaart
- overigen
- achtergrond

Bronnen PM10
- industrie/energie
- wegverkeer
- scheepvaart
- overigen

Concentraties PM10
- industrie
- wegverkeer
- scheepvaart
- overigen
- achtergrond
- buitenland
- natuurlijk
NOx-Contribution shipping (illustration)
Air quality and climate change program

Targets:
- Compliance with air quality regulations
- Create further room for sustainable growth
- Drastically reduce CO₂-emissions

PoRA participates in:
- Rotterdam Action Program Airquality (RAL/RAP)
- Rotterdam Climate Change program (RCI)
Means (PoR approach)

- Improve air quality information
- Lobby for stricter emission criteria (reduction at the sources)
- Projects to:
  - Reduce emissions
  - Serve as an example
  - Stimulate R&D
- Offset emissions from port expansion (PMV2)
Scope and influence

- **Port of Rotterdam Authority**
  - Influence: ++
  - Effect: - -

- **Port and industrial complex**
  - Influence: +
  - Effect: +

- **Supply chain**
  - Influence: +/-
  - Effect: ++
Port of Rotterdam Authority: Some projects 2006-2008

- All our vessels on clean truck diesel fuel (EN590)
- New vessels equipped with soot filters and post-combustion (SCR) treatment
- Use of shore side power own vessels
- Reducing fuel consumption (“saving while sailing”)
- “Clean” cars + incentives for clean leasing
- Carbon footprint calculation
Projects – Port area

- All nautical service providers on clean truck fuel
- Shore power for inland vessels (now 25%, rest in 2008 and following years),
- Shore power feasibility studies for seagoing vessels
- Clean inland vessel program (CCR 2)
- Co-siting to minimise energy consumption
- Sustainability in tenders and lease contracts
- Carbon footprint monitoring and management
- Carbon Capture and storage (CCS)
- Development container transferium (inland container terminal)
- Partners in Dutch Ship Emissions Platform (www.scheepsemisions.nl)
Projects in the supply chain

- Modal shift from truck to barge and train (in lease contracts)
- Barge replacement program
- Barge speed reduction program (if needed)
- Environmental zoning for trucks (*in discussion*)
- Environmental indexing for seagoing vessels (*in discussion*)
World Ports Climate Conference, July 2008

World ports agree on actions to reduce GHG-emissions

Some Topics:
- Support development of clean shipping
- Promote shore side power
- Promote CO2-reduction on terminals
- Use efficient and innovative logistics

www.wpccrotterdam.com
Pilot SCP Maashaven (inland barges)

- Feasibility study and engineering 2006/ 2007
- Using an innovative and user-friendly concept
  - old and new ships (low / high power demand)
- Consulting major stakeholders
- Designed to serve as an (inter)national standard
- Airquality calculations (by DCMR EPA)
- Investments (1,8 M€) and finance
- Signing the contract with Eneco Energy
- Construction and opening the pilot in november 2007
Pilot characteristics

- Duration pilot: 2 years (April 2007 - April 2009)
- Responsibility PoRA and Eneco energy
- 22 units with 132 connections (400V, 63A, 50 Hz)
- Registration by mobile phone or via internet
- Unique internet site (4 languages) available (www.walstroom.nl)
- Low costs (25 c€/kWh) for ship
- Injunction for generator use
Environmental indexing ships

Why indexing a clean ship?

• Promote clean shipping
• Corporate responsibility
• International adopted index
• Discussion with stakeholders
Air quality and climate change

Thank you for your kind attention