GREEN CERTIFICATION: THE PRESENT AND THE FUTURE

Toward a comprehensive certification scheme for ports and vessels

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PORTS MARITIME TRANSPORT & INSULARITY
Milos

Priority issues: Small ports

- ✓ Islands & shipping
- ✓ Test-beds for technology
- ✓ SMART/green technologies

- ✓ Climate change
- ✓ Collaboration

- ✓ Socio-Economic
- ✓ Ports and stakeholders

- ✓ Ports of the future

- ✓ Transport options
- ✓ Pilot projects

- ✓ Training and capacity building

BUSINESS INNOVATION ENVIRONMENT

1. Air quality
2. Garbage/ Port waste
3. Noise
4. Local community
5. Energy Consumption
6. Ship waste
7. Water quality
8. Dust
9. Land development
10. Water development

MSC MAGNIFICA

- 95,128 tons
- 3223 passengers
- 1038 crew
- 293.80m L

"Eco-friendly cruise company with innovative energy saving and water recycling systems"

SHIPPING
Ship design
Energy management
Emission reduction
Waste management

SUSTAINABILITY

PORTS
Energy supplies
Buildings & waste
Traffic & influence


GREEN SHIP
ΙΡΙΔΑ ΣΦ 22


MSC

- ISO 14001
- EU Eco-Management and Audit Scheme
- PERS

POLICY OBJECTIVES*

NON COMPLIANCE
risks of litigation, financial penalty and bad publicity

COMPLIANCE
respond to legislation as required to minimum level of effort, resources and commitment

COMPLIANCE PLUS
pro-active, planning ahead for future environmental legislation in parallel with commercial opportunity

COMMERCIAL EXCELLENCE
integrated management to achieve total quality on all environmental and commercial issues

QUALITY ENVIRONMENTAL MANAGEMENT SYSTEM?

"SHOW ME YOUR CERTIFICATE"!

Who wants to know?	What is in it for me?
• Regulators and courts	• Compliance
• Marine Governance	• Cost and risk reduction
• Investors/Stakeholders	• Sustainability
• Insurers and banks	• Market opportunity
• Auditors	• Positive image
• Communities/Society	• 'License to operate'

QUALITY OF THE ENVIRONMENT

Aspects over which Port Authorities may have direct or indirect influence over shipping emissions and discharges.

- Differentiated fees:
  - Emissions/Discharges
  - Waste
  - On-shore power supply
- Green Ship Promotion
  - Environmental Ship (ESI)
  - Clean Ship (CSI)
  - Energy Efficiency Design (EEDI)
  - Green Award
  - Right Ship
- Waste reception facilities
- Bunkering options
- Vessel speed reduction
  - Slow/eco sailing
  - Effective arrival/departure operations
- Port infrastructure
- Short Sea Shipping
- Vessel Traffic Services

Regulation of the European Parliament and of the Council establishing a framework on market access to port services and financial transparency of ports (2013/0157 (COD)

"Port infrastructure charges may vary [...] in order to promote a more efficient use of the port infrastructure, short sea shipping or a high environmental performance, energy efficiency or carbon efficiency of transport operations" (Art. 13.4 of the new Regulation)

"The Commission, in cooperation with Member States, should elaborate guidance on common classification criteria for vessels for the purpose of voluntary environmental charging, taking into account internationally agreed standards" (Recital 51)

Study on differentiated port infrastructure charges to promote environmentally friendly maritime transport activities and sustainable transportation (MOVE/B3/2014-589/S12.697889

Assist Port authorities to influence or collaborate with the Shipping Industry to:

- **Improve Environmental Quality**
- **Achieve Sustainability**
- **Increase efficiency to mutual advantage**

Differentiated fees

'Environmental charging' or 'green charging' has been receiving increasing attention in the last few years, as a market-based measure to tackle the adverse environmental effects of maritime transport.

It refers to the practice of differentiating port infrastructure charges according to environmental or sustainability criteria

COGEA

COMPLIANCE

Environmental Ship Index ESI

WPCI

RIGHTSHIP

GREEN AWARD

Clean Shipping Index

PORT

Policy Mechanisms*

HEALTH

SUSTAINABILITY

COGEA

Hinterland

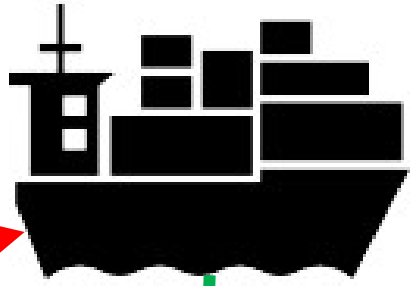
City

Port

LOGISTIC CHAIN

Influence

- Charging schemes
  - Index
  - OPS
  - Waste
  - Bunkering
  - Short sea



Third-party verification*

- Ship Index
- EEDI
- Ship Energy Eff. MP
- ECAs
- Best operational*
- Best environmental
- Technical equipment
- (Emission Trading ?)
- (Measurement RV ?)
- (Voluntary schemes)

COMPETITION

?

WHO PAYS

Considerations (After Wilmsmeier, 2012)

Pricing policy
- Financial
- Economic
- Environmental
- Social

❖ Trade-off
❖ Negotiation

Approach to port pricing
- Economic: benefits & costs to all
- Financial: accounting for profit
- Public enterprise: development (Subsidies)

No discrete classification

- Competition
- Market capture
- Shifting the impact
- Bonus/Malus
- Equity

Potential benefits

- Physical, chemical and biological improvements to environmental quality
- Protection and improvement of habitats
- Protection of ecosystems
- Reduction of risk
- Increased efficiencies
- Better public relations

- Increased market share or maintenance of profile through user options
- Reduction of insurance premiums
- Improved health of local residents
- Sector/Industry 'license to operate'
- Development and planning regimes
- Operational costs related to clean-up/incidents

RESULTS: 1

1) Size and specialisation play lesser role than expected
2) Decision-making process generally the environmental department except in the largest ports where it tends to be commercial dept.
3) Most ports allocate a variable budget to finance the scheme, with occasional adjustments during the year (learn-by-doing process)
4) The budget allocated ranges from 0,5% to 2% of the total revenue from port dues
5) Few ports monitor the financial and environmental impact of the scheme - in most cases due to lack of resources.

Results 2

6) **Not all ports were able to estimate the workload of an employed person necessary to manage their environmental charging scheme - average FTE varies from 0,5 and 3**

6) **The principle of 'malus' is currently not applied in the ports surveyed, although some respondents point out that where the principle of a revenue-neutral scheme is adopted a transfer of value is already made from more polluting to less polluting ships by recalibrations in the tariff structure**

6) **In most instances environmental charging schemes do not address a particular ship or cargo type**

6) **Spain stands out as the only Member State whose differentiated charging policy is established at central level, although implemented by ports individually**.

Charging schemes – opinions from sector

1) Approaches may vary significantly port-to-port
2) Short duration of schemes and monitoring*
3) Terminology and Guidelines*
4) Lack of comparable statistical data – complex*
5) Variety of cost recovery systems does not deliver sufficient or comparable incentives
6) Do not contribute to a level playing field
7) Lack of transparency on fees charged? *(Confidentiality/Competition)*
8) Mix of: concept, motives, criteria, fees and cost structures, commercial imperatives and perceived environmental benefits*

1) No instances where the absolute environmental benefits to the port of differentiated charging schemes can be identified on the basis of systematic, scheme-specific, scientific monitoring.

2) "It is hardly possible to quantify the environmental benefits…"

3) "It is impossible to deliver substantiated figures…."

4) "The environmental monitoring system in place is not measuring the impact of the charging scheme on air and water quality. There is no data at all that could be used to gauge how and if the charging scheme has actually had any tangible effect on the environment. "

BASELINE – BENCHMARK - TRENDS

Towards an assessment of environmental impact

Identifying the effect of a charging scheme on the

- **Technically challenging**
- **Costly to set up**

i. **Most differentiated charging schemes are based on indexes** (ESI, Green Award, CSI, Blue Angel, etc.) that give ratings to ships

ii) In the short run, the schemes do not seem to alter ship owners' behavior - **the incentive is most effective for new ships and the choice of fuel – real impact is long term.**

Towards an assessment of environmental impact

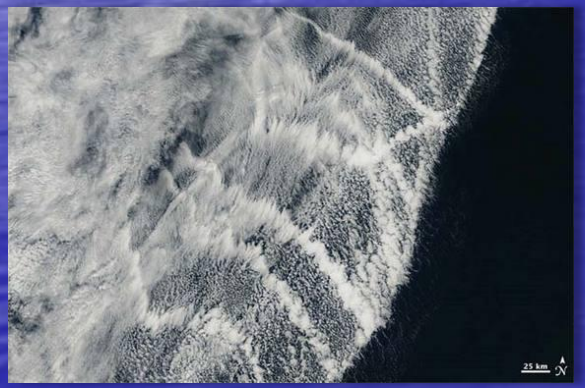
Assumptions:

- **All ports in the EU implement a differentiated charging scheme of 10% discount on port dues to ships with an ESI score >30**
- **Such a scheme would attract a green fleet representing 7% of all ships in the EU**
- **Reduction of 2.17% in NO_x SO_x and PM emissions from shipping**
- **With demand for port services elastic to charges, doubling the discount (20%) would imply a 4.34% NO_x SO_x and PM emissions reduction**

Towards an assessment of environmental impact

Sea region	Emissions (estimates based on current legislation)							
NOx	2005		2020		2030		2050	
	Baseline	Tonnes saved	Baseline	Tonnes saved	Baseline	Tonnes saved	Baseline	Tonnes saved
Baltic Sea	220	4,8	183	4,0	202	4,4	250	5,4
Bay of Biscay	474	10,3	425	9,2	488	10,6	633	13,7
Black Sea	47	1,0	36	0,8	44	1,0	54	1,2
Celtic Sea	22	0,5	18	0,4	20	0,4	23	0,5
Mediterranean Sea	1294	28,1	1116	24,2	1255	27,2	1587	34,4
North Sea (incl. English Channel)	518	11,2	449	9,7	503	10,9	627	13,6
Rest of NE Atlantic	246	5,3	220	4,8	250	5,4	319	6,9
Total	**2821**	**61,2**	**2447**	**53,1**	**2762**	**59,9**	**3493**	**75,8**

Source: own estimation based on Campling et al. (2013)



Monitoring: Factors and variables

- Air quality*
- Wind direction
- Wind speed
- Meteorology
- Sampling frequency
- Site locations
- Temperature profile
- Topography
- Hydrography
- Sources*
- Technology
- Methodology
- Seasonality
- Aspects
- Boundaries
- Hinterland
- Chain
- Ship type – design, equipment, management & operations
- Number of vessels
- Frequency
- Periodicity
- Scheme criteria
- Commercial profile
- Market and competition
- Bunkering/Fuel type
- Waste management
- OPS
- Transparency
- Data comparability
- Liabilities and responsibilities
- Cost and maintenance
- Interpretation and validation
- Dynamics and climate change

STRATEGIC ANALYSIS QUESTIONNAIRE FOR THE (ENVIRONMENTAL) PORT MANAGER

ECOPORTS

SDM

SELF DIAGNOSIS METHOD

- **Confidential**
- **Data-base**
- **Benchmark**
- **Priority Issues**

1) **Environmental policy**
2) **Organization and personnel**
3) **Awareness and training**
4) **Communication**
5) **Operational management**
6) **Emergency planning**
7) **Monitoring**
8) **Review and audit**

ECOPORTS

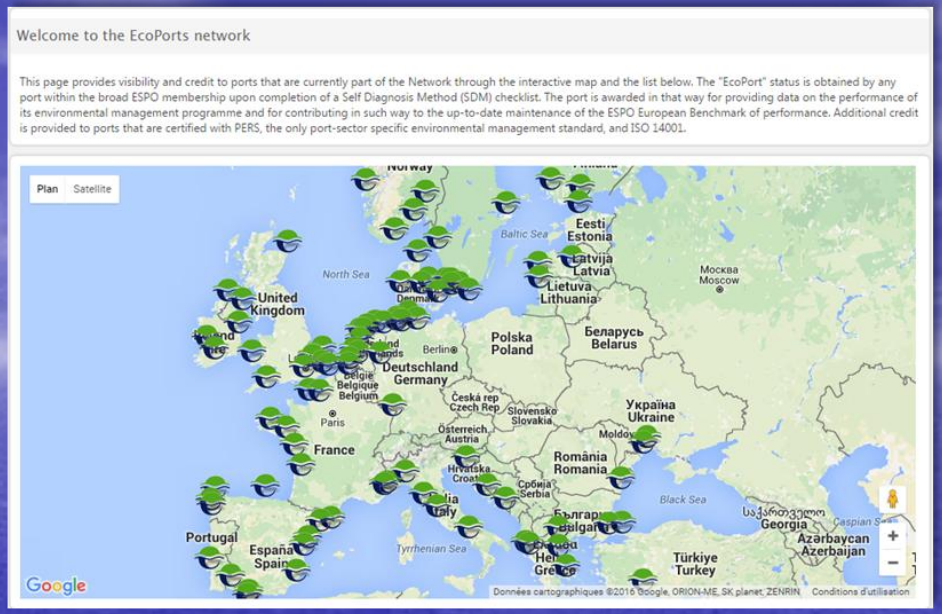
PORT ENVIRONMENTAL REVIEW SYSTEM

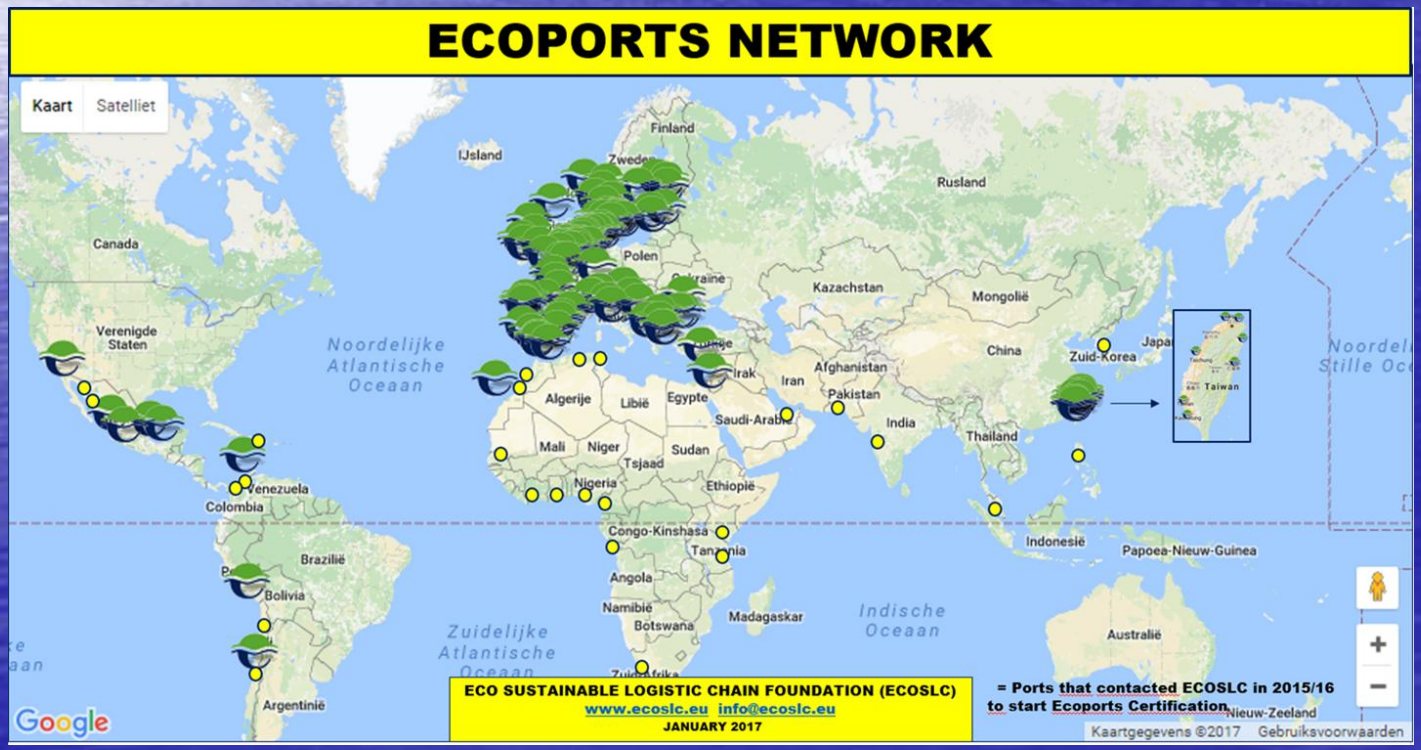
- Environmental policy statement
- Register of environmental aspects
- Register of legal requirements
- Documented responsibilities
- Conformity review
- Environment report

ECOPORTS

www.ecoports.com

- Voluntary
- Cost and risk
- Sustainable development
- Evidence





- Generic
- Port Sector - specific

2. Port of Lagos

Stakeholder roundtable 7/09/2012

Project Part-Financed by the European Union
European Regional Development Fund

- ✓ Aegean Energy and Environment Agency
- ✓ Network of Sustainable Greek Islands
- ✓ Energypress
- ✓ SMART Islands Initiative

1) Port sector - *retain influence* - SMART options
2) Sustainable initiatives*
3) Exchange knowledge and experience
4) Avoid 're-inventing the wheel'
5) Identify issues and set the agenda
6) Education and Training**
7) Practicable outreach*: a) port-based community workshops, b) 'floating classroom', c) 'Technology-in-Context', d).....?


THANK YOU FOR YOUR ATTENTION