

# Transnational Environmental Governance: Orchestration and Upgrading in Maritime Shipping

**Stefano Ponte,**

Director, CBS Sustainability Platform  
Professor of International Political Economy  
Dept. of Business and Politics, CBS  
[sp.dbp@cbs.dk](mailto:sp.dbp@cbs.dk)

*Co-authors*

**René Taudal Poulsen**

Associate Professor  
Dept. of Innovation and Organizational Economics, CBS

**Jane Lister**

Associate Director, Centre for Transportation Studies  
University of British Columbia

# Outline

- Analytical entry points of overall project
  - Transnational Environmental Governance (TEG) and its orchestration
  - ‘Buyer-driven’ environmental upgrading in global value chains (GVCs)
- Case studies
  - Shipping (with Rene’ Taudal Poulsen and Jane Lister) – today’s talk
  - Aviation biofuels (with Lasse Folke Henriksen)
  - Both capital intensive, mobile assets
  - Opposite environmental upgrading/downgrading trajectories
- Publications/ongoing work
  - Lister, Poulsen and Ponte (2015) “Orchestrating Transnational Environmental Governance in Maritime Shipping,” *Global Environmental Change*, Vol. 34, pp. 185-195
  - Poulsen, Ponte and Lister (2015) “Buyer-driven Greening? Cargo-owners and Environmental Upgrading in Maritime Shipping”, under review
  - Henriksen and Ponte (2015) “Public Orchestration, Social Networks and Transnational Environmental Governance: Lessons from the Aviation Industry”, under review

# 1. Transnational Environmental Governance and its Orchestration

- ‘Transnational actors operating in a political sphere in which public and private actors interact across borders and political jurisdictions’ to address environmental concerns (Andonova et al 2009: 69)
- **Two strands of literature** (in poli sci, IPE public policy, env studies)
  - On strategies that nation states and IOs can use to shape business and individual behaviour -- environmental outcomes
  - Transnational experiences and ‘entrepreneurial’ governance initiatives
- **Concerns over fragmentation and ‘governance deficit’**

# Orchestration

- National and international public organizations using combinations of
  - indirect tools (intermediation, collaboration)
  - direct regulatory tools, regulatory threats and/or incentives (hierarchy, delegation)
- Existing literature on orchestration
  - Focused on institutional features and trajectories of TEG, and on their instrumental and structural elements
  - We contribute with a typology of 4 dimensions that can shape orchestration possibilities:
    - issue visibility
    - interest alignment
    - issue scope
    - regulatory fragmentation and uncertainty

# Direct and indirect orchestration tools

- **Direct**
  - Regulation, threat of regulation
  - Incorporation of private standards in regulation
  - Direct subsidies and mandates
  - Public procurement and other direct forms of financial support and investment
- **Indirect**
  - facilitating, indirectly influencing, and/or participating with other stakeholders in key initiatives or groups
    - such as industry associations, multi-stakeholder initiatives and industry conferences
  - funding research projects
  - political and ideational support (white papers, visions, etc)
  - social network engineering

## 2. Environmental upgrading in GVCs

- **Global Value Chain analysis**
  - Disintegration of production and its functional integration in GVCs
  - IPE, economic sociology, economic geography
- **Governance**
  - Ability to shape functional division of labour in GVCs and (re)allocate value distribution
  - Buyer-driven vs Producer-driven governance; polarity
  - Hierarchy, captive, relational, modular, market
- **Upgrading**
  - Economic upgrading: Product, process, functional, inter-chain upgrading (countries, regions, firms)
  - We contribute to emerging debate on **environmental upgrading**
    - ‘Improving the environmental impact of value chain operations’
    - Difficult to achieve along the GVC due to fragmentation of operations

# 3. Case study: Shipping

- Sustainability credentials of shipping are being questioned
  - Lagging behind on-shore industries
  - Opposite trajectory of aviation in terms of environmental upgrading
- Industry is mostly with head in the sand
- But some voluntary initiatives are emerging
- Important (and mostly unfulfilled) orchestrating role **could** be played by IMO
- Role and limitations of ‘buyer-driven greening’
  - Role of cargo buyers in pushing the agenda

# How is shipping lagging?

- Maritime environmental protection standards lag behind onshore sectors
  - Timing: Later responses from shipping than onshore industries
  - Specific protection standards lower than onshore standards
  - Trends in emissions: Maritime on the rise, onshore on the decline

Lister, J.; Poulsen, R.T.; Ponte, S., 2015. Orchestrating Transnational Environmental Governance in Maritime Shipping. *Global Environmental Change*, 34 (September), 185-195.

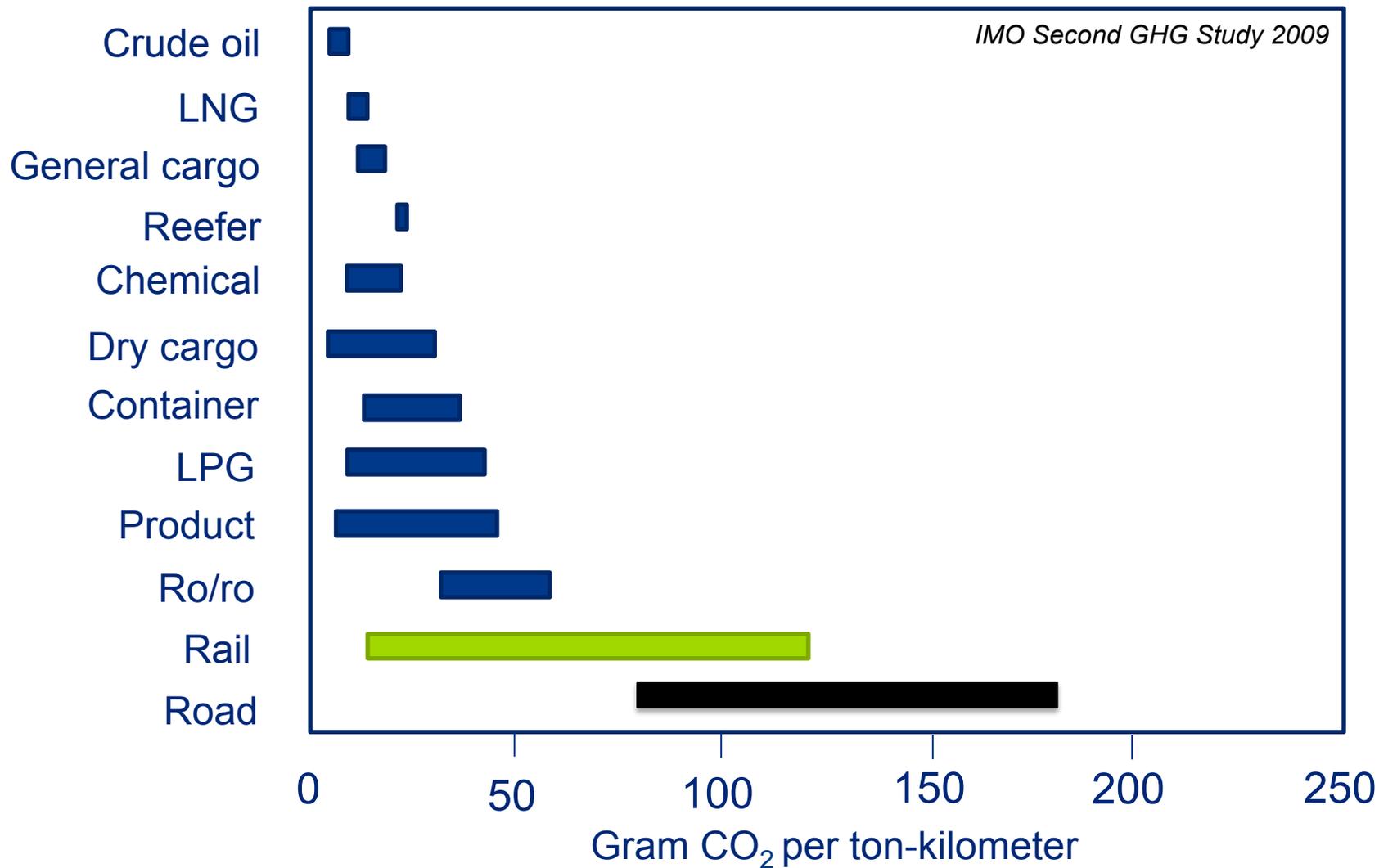
# Environmental footprint

Key environmental problems currently discussed by policy makers and shipping industry:

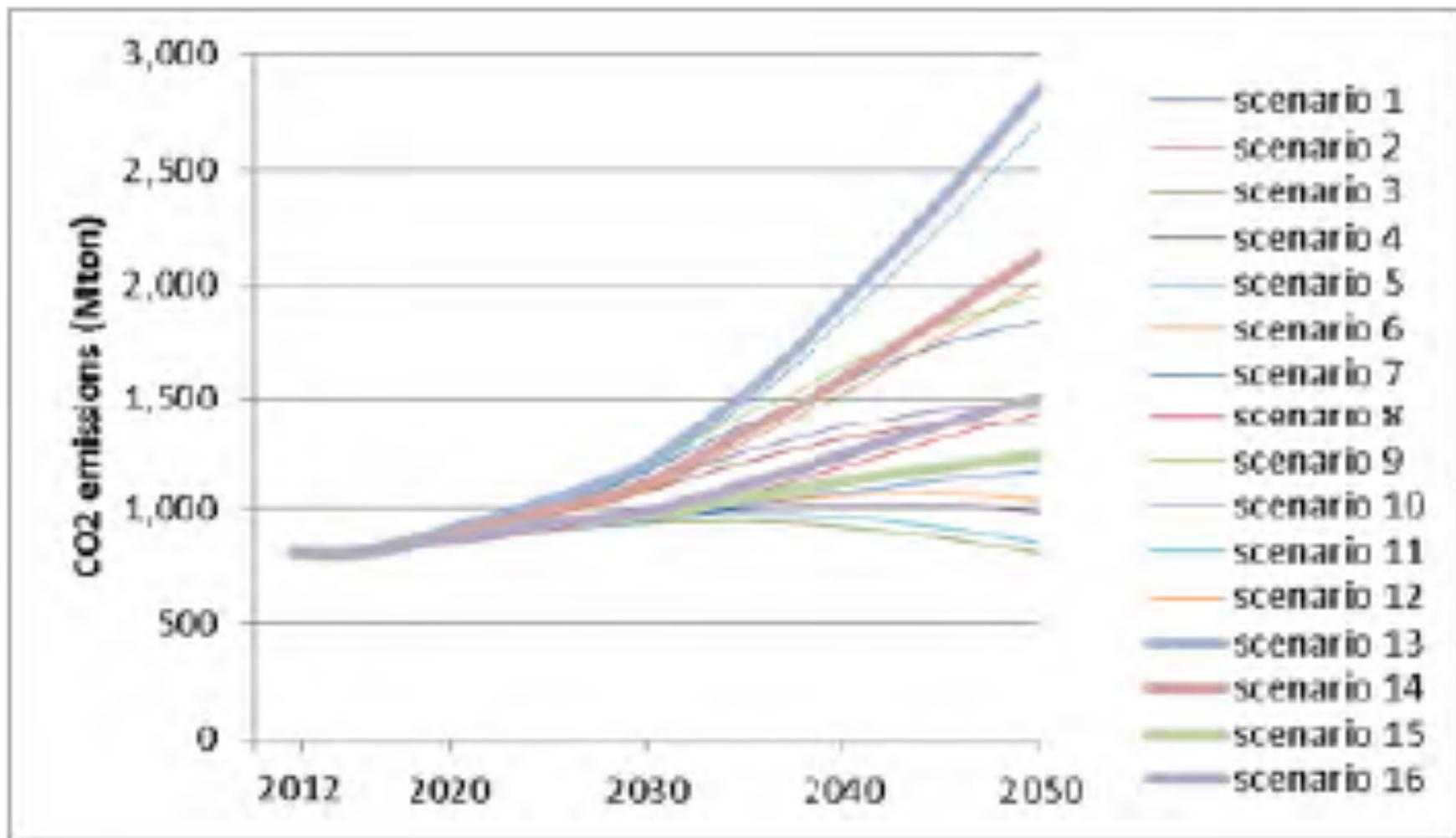
- CO<sub>2</sub>-emissions
- SO<sub>x</sub>-emissions
- NO<sub>x</sub>-emissions
- Particulate Matter-emissions
- Black Carbon-emissions
- Invasive species (ballast water and hull biofouling)
- Underwater noise
- Hazardous material disposal (scrapping/dismantling of ships on beaches, 'beaching')

Source: <http://www.imo.org/OurWork/Environment/Pages/Default.aspx>

# CO<sub>2</sub> emissions, by source



# IMO emission scenarios 2050



Source: Third IMO GHG Study, 2014

# Regulatory status



Key environmental problems currently discussed by policy makers and shipping industry:

- CO<sub>2</sub>-emissions
  - SEEMP (ship operation) and EEDI (ship design/only new ships) agreed under IMO/MARPOL
  - EU MRV (monitoring, report and verification) from 2018
- SO<sub>x</sub>-emissions
  - Regional SECAs from 2015; Possibly global SECA from 2020
- NO<sub>x</sub>-emissions
  - NO<sub>x</sub> Tier II in place; regional Tier III/NECA from 2016
- Particulate Matter-emissions (under consideration)
- Black Carbon-emissions (under consideration)
- Invasive species (ballast water and hull biofouling)
  - Ballast water (BWMC from 2004 not yet fully ratified + US unilateral rules from 2016)
  - Hull biofouling (Expected in the future, no agreement)
- Underwater noise (Expected)
- Disposal of hazardous material/scrapping of ships (No regulation in place; IMO Hong Kong Convention only ratified by three countries)

# Limited orchestration

- Key issue: multi-jurisdictional nature and mobility of assets makes regulation difficult (+ flags of convenience)
- Lack of IMO orchestration

## 4 key factors

### 1. Issue visibility:

- Environmental damage not immediately visible
  - except oil spills
- Shipping has a B-2-B nature
  - out of sight for consumers

### 2. Interest alignment:

- Historically low cooperation between stakeholders
- Shipping lobbyist have successfully established a 'green image'

### 3. Issue scope:

- Diverse, complex issues challenges possible orchestrators

### 4. Regulatory fragmentation and uncertainty:

- Uncertainty for key questions: Who? What? Where? When? How?
- Regulatory uncertainty challenges 'green' first-movers

# Buyer-driven greening? Different dynamics in different shipping segments

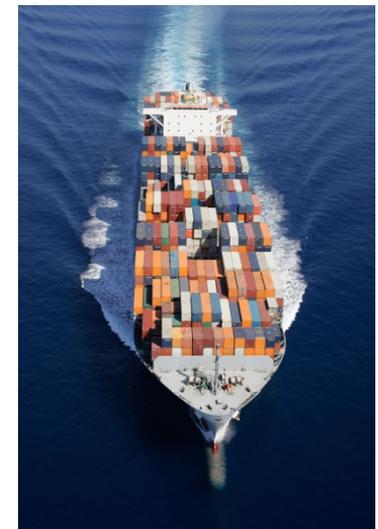
Dry bulk



Tanker



Container



# 'Big brand' sustainability

---

<b>Company</b>	<b>Sustainability Program</b>	<b>Launch</b>
McDonald's	Sustainable Land Management	2011
Best Buy	Greener Together	2010
Procter & Gamble	Sustainability Vision	2010
Unilever	Sustainable Living Plan	2010
PepsiCo	Performance with Purpose	2009
FedEx	Earth Smart	2009
Nike	Considered Design	2008
IBM	Smarter Planet	2008
Starbucks	Shared Planet	2008
Marks & Spencer	Plan A	2007
Coca-Cola	Live Positively	2007
Johnson & Johnson	Healthy Planet	2006
Walmart	Sustainability Commitment	2005

---

# Container shipping demands

Top Ocean Container Importers to US	TEU 2012	Carbon commitment?	Address transport?	Address maritime shipping?
1. Walmart	720,000	YES	YES	X
2. Target	496,200	YES	YES	X
3. Home Depot	315,400	YES	YES	X
4. Dole Food	235,000	YES	YES	YES
5. Lowe's	229,000	YES	YES	X
6. Sears Holding	201,500	Under development	X	X
7. Chiquita	149,400	YES	YES	YES
8. LG Group	147,300	YES	YES	X
9. Heineken	144,800	YES	YES	YES
10. Philips Elec	124,700	YES	YES	YES
<b>% Commitment</b>		<b>90%</b>	<b>90%</b>	<b>40%</b>

Source: Poulsen, Lister and Ponte 2015

# Multi-stakeholder initiatives

	Ship-types & # ships	Issues covered	Scoring framework	Membership fee	Data source
<b>Clean Cargo Working Group (CCWG)</b> (cargo owners)	Container (2300)	CO2, Sox, PM, Nox, Water and Waste; Chemical use	Yes (Based on Nox, Sox, CO2 and access to shore power in port)	Fee for all members	Partly performance data received from ship-owners; Partly vessel design specification
<b>Clean Shipping Index (CSI)</b> (cargo owners)	Container, Dry bulk, ro/ro, cruise (2,000)	CO2, SOx, Nox, Water and Waste; Chemical use; Hull-fouling	Yes (Based on CO2, Nox, Sox, Chemical and water-use/waste)	Free for cargo owners; Costs for ship-owners for data verification	Partly performance data received from ship-owners; Partly vessel design specification
<b>Environmental Ship Index (ESI)</b> (ports)	Container, dry bulk, general cargo, ro/ro, cruise (>2.000)	CO2, Sox, PM, Nox	Step rating (with four levels); For CO2 the scheme only asks if emissions are calculated or not (Yes/no)	Information not available	Partly performance data received from ship-owners; Partly vessel design specification
<b>Green Award</b> (ports)	Dry bulk, tankers, inland barges and LNG (>1.500)	CO2, Sox, PM2, Nox, Water and waste, anti-fouling pant	Information not available	Shipowner fee	Information not available
<b>RightShip/ Shippingefficiency.org</b> (charterers)	Container, dry bulk, tankers, general cargo, ro/ro, cruise (60,000)	CO2	Step rating (with seven steps)	Subscription fee for detailed data sets	Based on vessel design specifications
<b>Triple-E</b> (ship owners)	Container, dry bulk, tankers, general cargo, ro/ro, cruise (33)	CO2, Sox, PM, Nox, Water and Wasterwater; Chemical use	Step rating (with four levels)	One time fee for ship owners when rating is issued	Partly based on vessel design specifications; partly based on performance data

“The Clean Cargo Working Group (CCWG) is industry initiative made up of leading cargo carriers and their customers, dedicated to environmental performance improvement in marine **container** transport through measurement, evaluation, and reporting.

## Why Join?

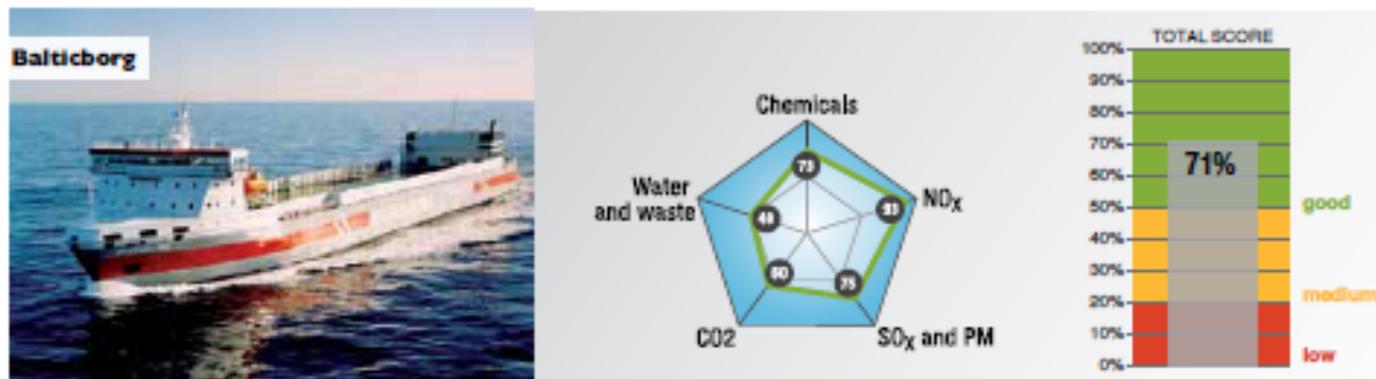
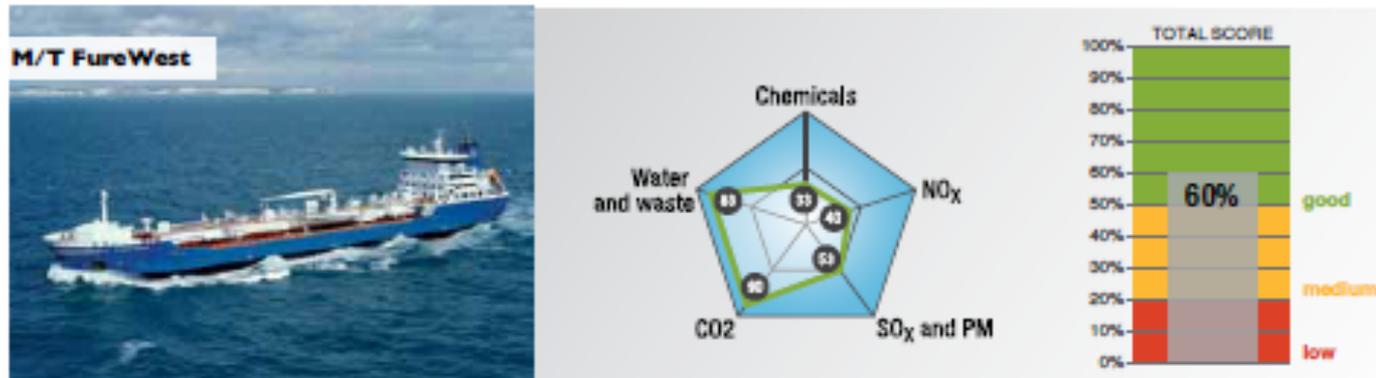
Join CCWG members in creating and using the practical tools for measuring, evaluating, and reporting the environmental impacts of global goods transportation. These tools and the dialogue between members and key stakeholders help:

- Ocean freight carriers track and benchmark their performance and easily report to customers in a standard format.
- Cargo owners review and compare carriers' environmental performance when reporting and making informed buying decisions.”

<http://www.bsr.org/en/our-work/working-groups/clean-cargo>,

# Clean Shipping Index

This is example data from Clean Shipping Index based on self-assessment by the shipping companies.



[www.cleanshippingindex.com](http://www.cleanshippingindex.com) 2013

- **Effective orchestration impinges upon:**
  - Improving issue visibility (or focus on what is visible)
  - Multi-stakeholder collaboration that aligns public and private objectives (easier said than done)
  - Narrowing scope (but is this a good idea?)
  - Harmonization of private initiatives and coherence of multilevel public governance (but how?)
- **Buyer-driven greening more likely when:**
  - There are clear governing ‘buyers’ in the value chain
  - These ‘buyers’ are consuming-facing companies with reputational risks
  - There is clear and enforceable global regulation and alignment between regulation and voluntary initiatives