



Looking at the demand side – the need for greener ships

Green transformation of the Shipbuilding Industry

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Why shipping ?

- Up to 90% of EU external trade
- Around 40% of EU internal trade
- Around 2.5 million jobs (incl. shipbuilding)
- EU flag = 25 % by global tonnage
- EU ownership = 40% of global fleet
- Annual growth potential for short sea shipping = 3-4% for 2011-2020

The Challenges

- Safety / Security
- Energy costs and harmful emissions (SO_x, NO_x, GHG, PM)
- Ship waste handling / ballast water
- Ship recycling
- Port infrastructure and interfaces
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=> Technology could provide solutions (increased energy efficiency; better design and operation of ships, use of marine gasoil, scrubbers, shore side electricity, further alternative fuels such as biofuels, hydrogen, solar power and wind energy).



The sustainable waterborne transport toolbox (COM (2011) 1052 final)

Short-term measures are already in place:

- Motorways of the Sea (MoS) within the Trans-European Transport Network (TEN-T): studies and works supporting the reduction of the impact of maritime transport on the environment.
- Marco Polo annual work programme (budget foreseen for the call in 2012: 64.6 million €): priority for short sea shipping to "implement innovative technologies or operational practices which significantly reduce polluting emissions of maritime transport".
- Lending of the European Investment Bank (EIB): financial support to the commercial shipping sector. Particular attention on projects that assist the sector to cope with the environmental challenges, development of clean technology, increased fuel efficiency, safe and environmentally efficient phasing out of older and less fuel efficient vessels. In addition, the Bank will continue supporting investment in Research, Development and Innovation in the shipping industry.

The sustainable waterborne transport toolbox (2)

- **Regulatory measures**

Create adequate (regulatory) framework to facilitates safe & secure implementation / use of green ship technologies and alternative fuels

- **Non-regulatory measures**

Establish a technical platform gathering relevant public and private stakeholders to facilitate dialogue, sharing of best practices and co-operation amongst all interested parties.

- **Development of green infrastructure and superstructure:**

Develop a sustainable alternative fuels strategy including also the appropriate infrastructure and ensure guidelines and standards for refuelling infrastructures.

- ***N.B.: these tools are technology neutral (LNG, scrubbers and other technologies can be addressed)***

LNG: a (the?) alternative fuel

- LNG has substantial environmental benefits (drastic reduction of SOx emissions down to nearly 0%; strong reduction of particulate matters, reduction of GHG emissions by about 20% and reduction of NOx emissions up to 90%.) Ship engines thank the use of LNG by a prolonged life-time of up to 100%.
- LNG prices are expected to remain below oil prices with the gap spreading in favour of LNG.
- Outside Europe, we hear that major developments are taking place in US, China (inland waterways fleet of 2000 vessels reported to switch to LNG!) and Singapore (plans to switch all local vessels and vehicles to LNG).
- The spread in LNG prices is still enormous as we recently heard by the industry (2.3\$ in US vs. 12\$ in EU vs. 18\$ in Japan per thousand cubic feet). This is reported to us to be mainly due to lack of appropriate LNG infrastructure in Europe and Asia, where the local gas grids do not currently take in much LNG.
- But if 20% of the ships in today's SECAs would be using LNG bunker, it is claimed that there would be a market for 4 million tons of LNG per year.

LNG for shipping: some issues to be solved first

- Lack of LNG bunker suppliers and LNG terminals in the preferred ports of call.
- Lack of a spot-market for LNG in Europe leads to bunker prices that are perceived as being too high, in particular compared to the US prices.
- Permit processes for LNG shore storage facilities seem to vary locally, often do not take account of bunkering needs and are generally perceived as taking too long.
- Appropriate training is required especially for those involved in LNG bunkering and storing.
- General sceptical public perception of LNG. Despite its so far excellent safety record, LNG is seen as dangerous.



More efficient and safer shipping => Cleaner shipping

A maritime "Blue Belt"

- Remove remaining barriers for shipping within the internal market.

Use modern information and communication technologies for shipping

- E-Maritime: Extension of the works for simplifying/harmonising reporting formalities to business applications
- E-Freight: seamless information flows along the logistical chain

New routes (Arctic), more traffic and larger vessels

- need for adapted/new technologies and procedures

EU White Paper GHG reduction goals

- Minimum 40% reduction for shipping by 2050 (compared to 2005 levels)
 - **No growth in transport (over 45 years):**
average ship: minus 40% emissions
 - **50% growth(over 45 years):**
average ship: minus 60% emissions
 - **100% growth (over 45 years):**
average ship: minus 70% emissions





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***The best way to
predict the future is to
invent it!***

(attributed to several authors)

