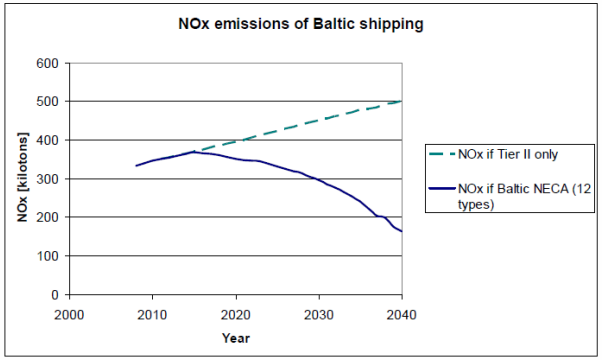
BSR InnoShip

Baltic Sea cooperation for reducing ship and port emissions through knowledge and innovation-based competitiveness

Project leader:

Dr. Tapani Stipa

Baltic Sea Region Programme 2007-2013



Policy framework

- **EU Strategy for the Baltic Sea Region, Priority Area 4 (clean shipping)**
  - a part of the flagship project *"Promote measures to reduce emissions from ships and enhance the development for shore side electricity facilities or for emission treatment in all major ports around the Baltic Sea"*
- **HELCOM Baltic Sea Action Plan**
  - Included in HELCOM Baltic Sea Action Plan: Maritime activities segment, e.g. 2010 HELCOM Ministerial Declaration
- **IMO has designated the Baltic Sea as a Sulphur Emission Control Area (SECA)**
  - progressive reduction in sulphur oxide (SOx) emissions from ships by 2015.
- **A NOx emission control area application is in preparation by HELCOM**

Health benefits vs. costs

Benefits vs. costs, European level

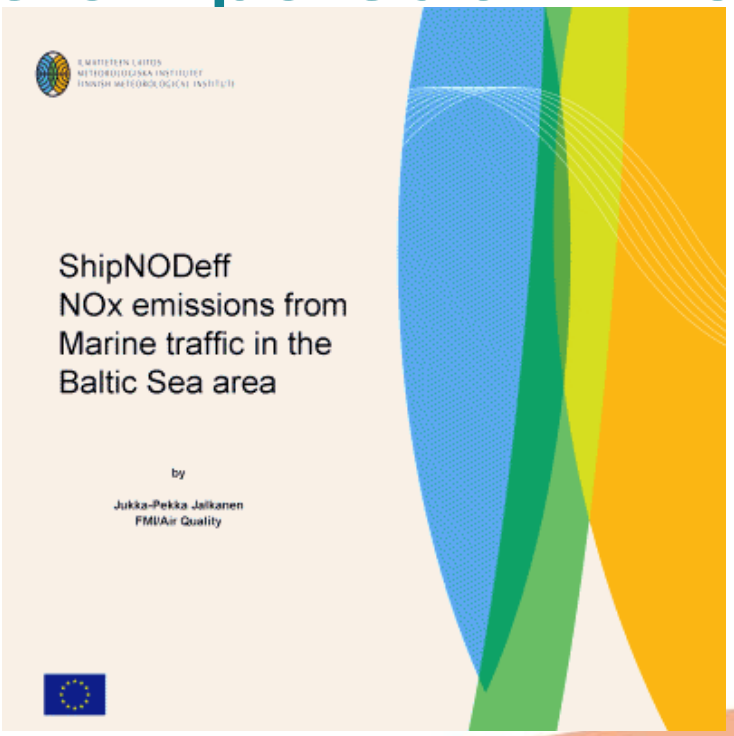
- Health benefits if all European seas become SECAs:
  10-35 billion € by 2020, costs slightly lower but on same order of magnitude (EU Commission studies)

For the Baltic (UTU studies)

- NOx control area: Freight rate increase 2-4.6 % (SCR catalyzers) BUT: a range of different technical solutions possible
- SOx control area: Freight rate increase 25-40% (low-sulphur fuel) BUT: probably about 50% lower with on-board scrubber installations
- **VERY SIGNIFICANT**, direct costs 200-1200 bn € for Finland only, side effects could amount to ~10%+ of GDP

- NOVEL SOLUTIONS, INNOVATIONS needed

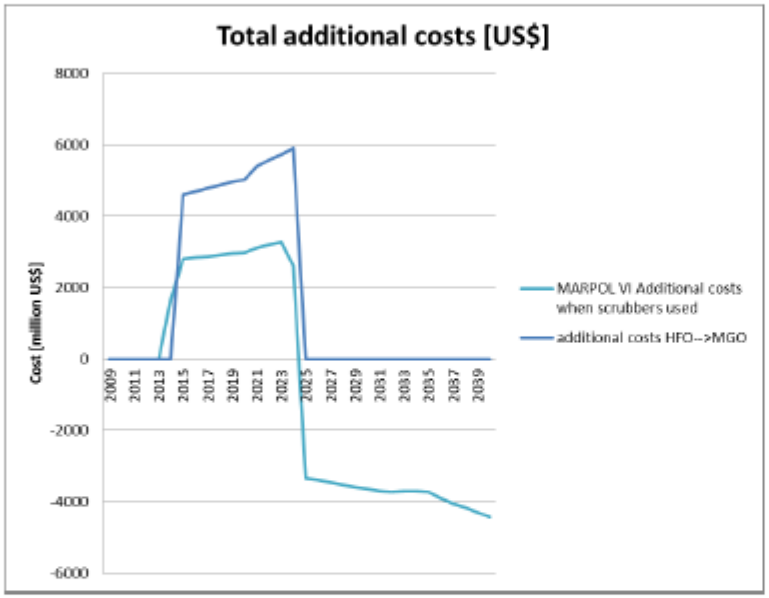
Scale of problem: 3000-5000 ships each month

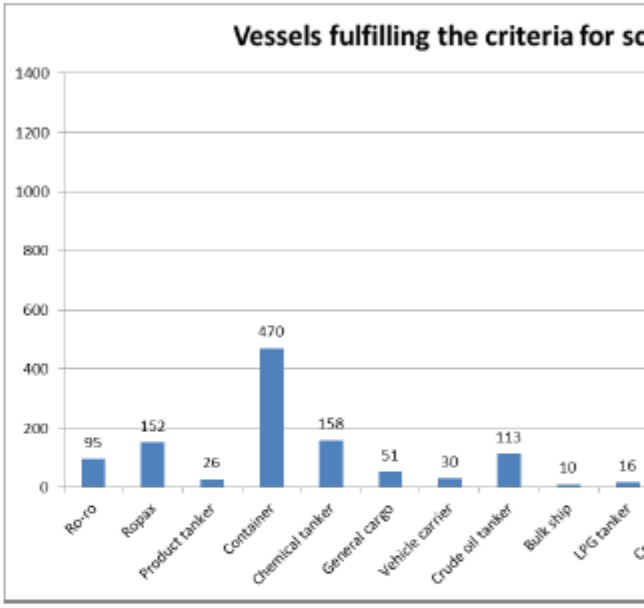


Export ton kilometers (Finland)

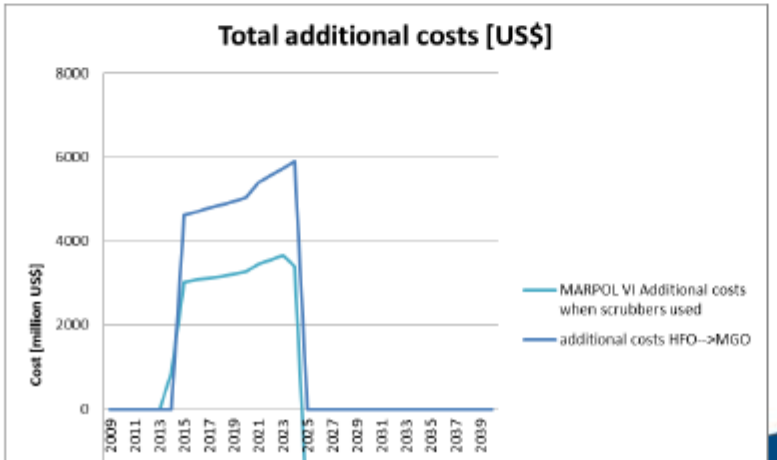
Model results and assumptions

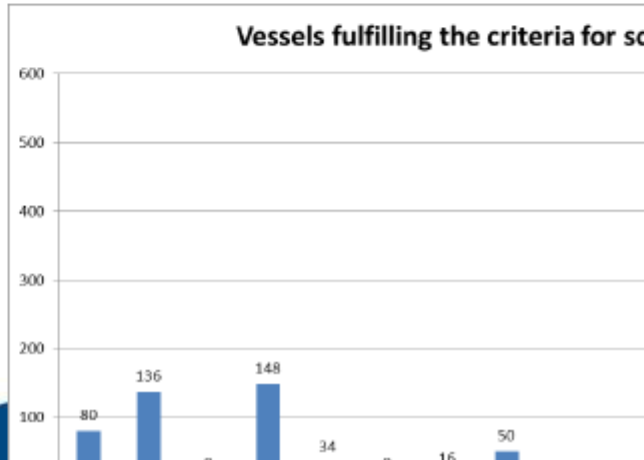
Minimum fuel consumption in SECA for Scrubber installation [kg]	2 300 000





Minimum fuel consumption in SECA for Scrubber installation [kg]	4 000 000





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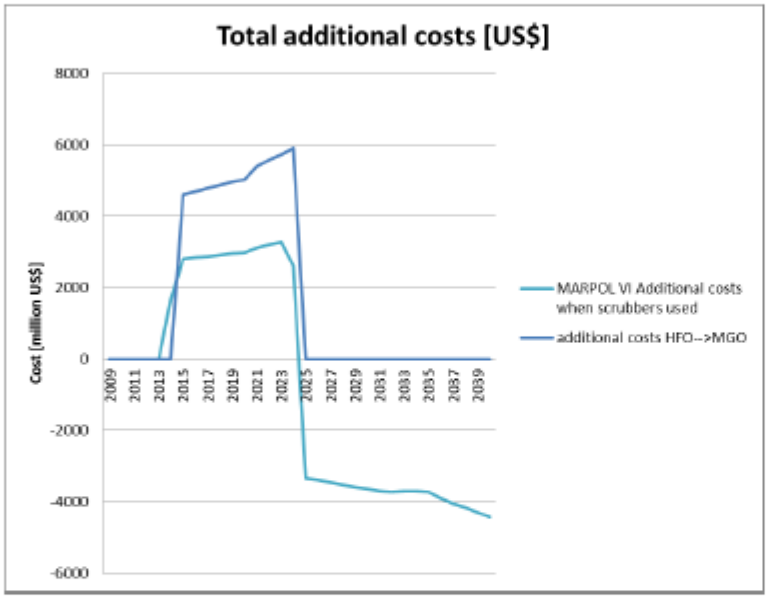

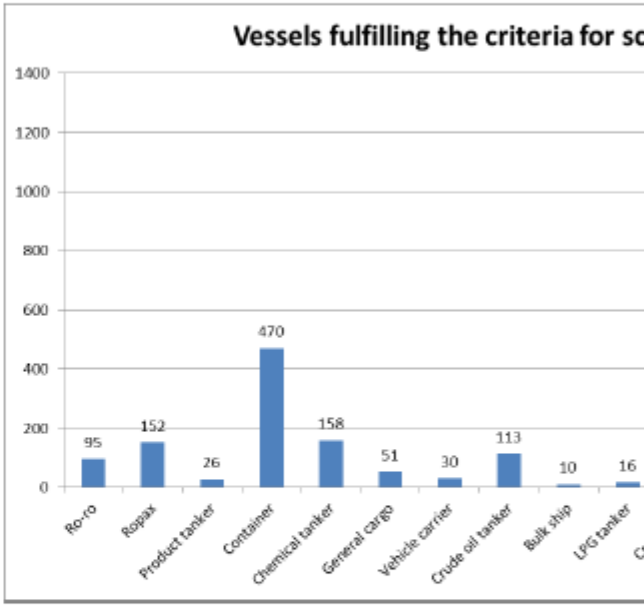

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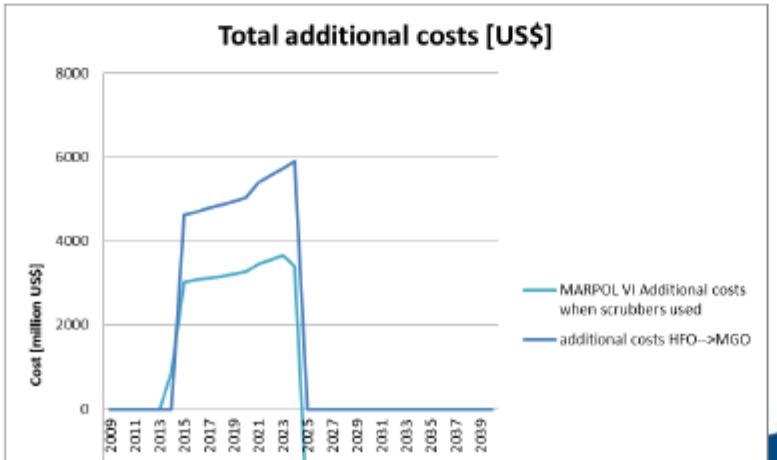
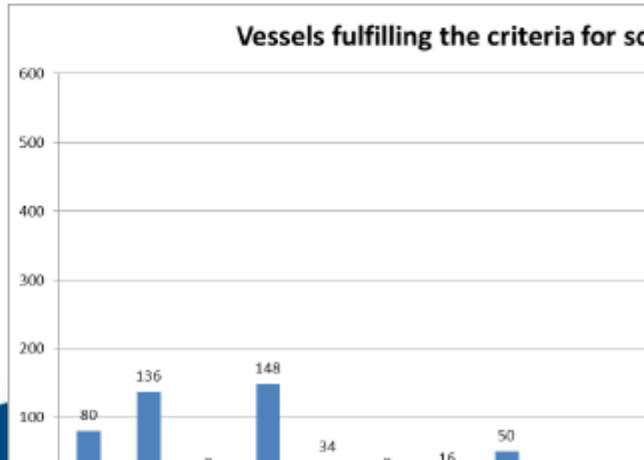




BSR InnoShip

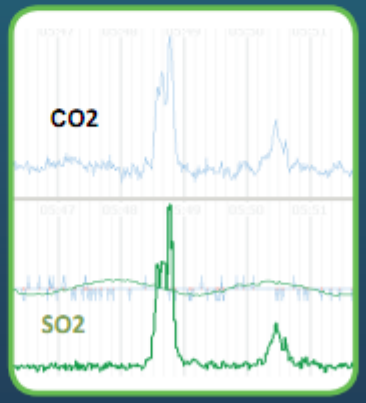
BSR InnoShip – cooperates with St. Petersburg city in monitoring emissions from shipping and port operations

Due to differences and discrepancies between national monitoring systems and methods, estimations on Baltic ship emissions and the adverse effects need harmonisation. BSR InnoShip activities aim at providing up-to-date knowledge on the current situation of atmospheric emissions and their adverse effects on marine environment and human health.

In the BSR InnoShip project Chalmers University of Technology from Sweden contributes to remote monitoring activities of ship exhaust under the invitation of the St. Petersburg City Committee for nature use, environment protection and ecological safety.

Russia is an important partner in the Baltic Sea Region, and an important element in its transport system. Russia has recently ratified the IMO Annex VI, and is therefore an active partner of other Baltic states in developing a cleaner Baltic shipping. The BSR InnoShip project collaborates with the City of St. Petersburg and the Federal Administration of the Big Port of St. Petersburg.

BSR InnoShip activities focus on developing ship and port emission inventories for the Baltic Sea to estimate atmospheric transport of pollutants from shipping both on the Baltic Sea level and also on the city scale and to identify most vulnerable areas of high risk.



Emission factors of different ship types in the water areas of St. Petersburg will be obtained to ensure more correct information for ship emission inventory and accurate impact assessment in support of efficient policies.

BSR InnoShip

The European LNG Training Centre in Szczecin/Poland

In order to increase seafarers' training quality in the scope of marine transportation technologies and ship safety, ELNGTC has been equiped with innovative didactic equipmnet by Transas, i.e.:

- Liquid Cargo Handling Simulator,
- LNG and Liquid Cargo Simulator,
- GMDSS Simulator.

Cargo handling and auxiliary operations simulators are the only means of training qualified personel of liquid cargo tankers and gas carriers to perform their functions safely and effeciently.

The simulator is aimed at studying the tanker systems in the framework of standarf IMO courses.

Our simulators are considered as the most modern equipment in the world and enable true simulation of real objects and facilities, as well as provide procedures and operations training possibilities in real time.

DP simulator

LNG simulator

Summary

- Costs of coming regulation to maritime transport to national economies on par or higher than CEF budget
- An issue for NDPTL
- Can only be solved by technological, financial and political innovations
- Partnering private and public sectors elemental to success