

# REBAS

## Measuring the Reduction of Emissions from Baltic Shipping

Tapani Stipa  
Finnish Meteorological Institute



REBAS-InnoShip





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## Emissions from the Baltic Sea shipping in 2008

Authors:

Jukka-Pekka Jalkanen and Tapani Stipa, Finnish Meteorological Institute

### Key messages:

Baltic Sea ship emissions during 2008 have decreased when compared to 2007

- NO<sub>x</sub>, 393 kt/year, **decrease** from 400 kt ( -1.75 %)
- SO<sub>x</sub>, 135 kt/year, **decrease** from 137 kt (-1.5 %)
- CO<sub>2</sub> output, fuel consumption and energy content have all **decreased** ( -2 %) during 2008:
- CO<sub>2</sub>, 18.9 Mt/year, **decrease** from 19.3 Mt
- Fuel consumption, 6056 kt/year, **decrease** from 6205 kt
- Energy consumption, 259 PJ **decrease** from 264 PJ
- Number of ships observed during 2008 was 10773 vessels, **increase** from 9497 (+11.8 %)

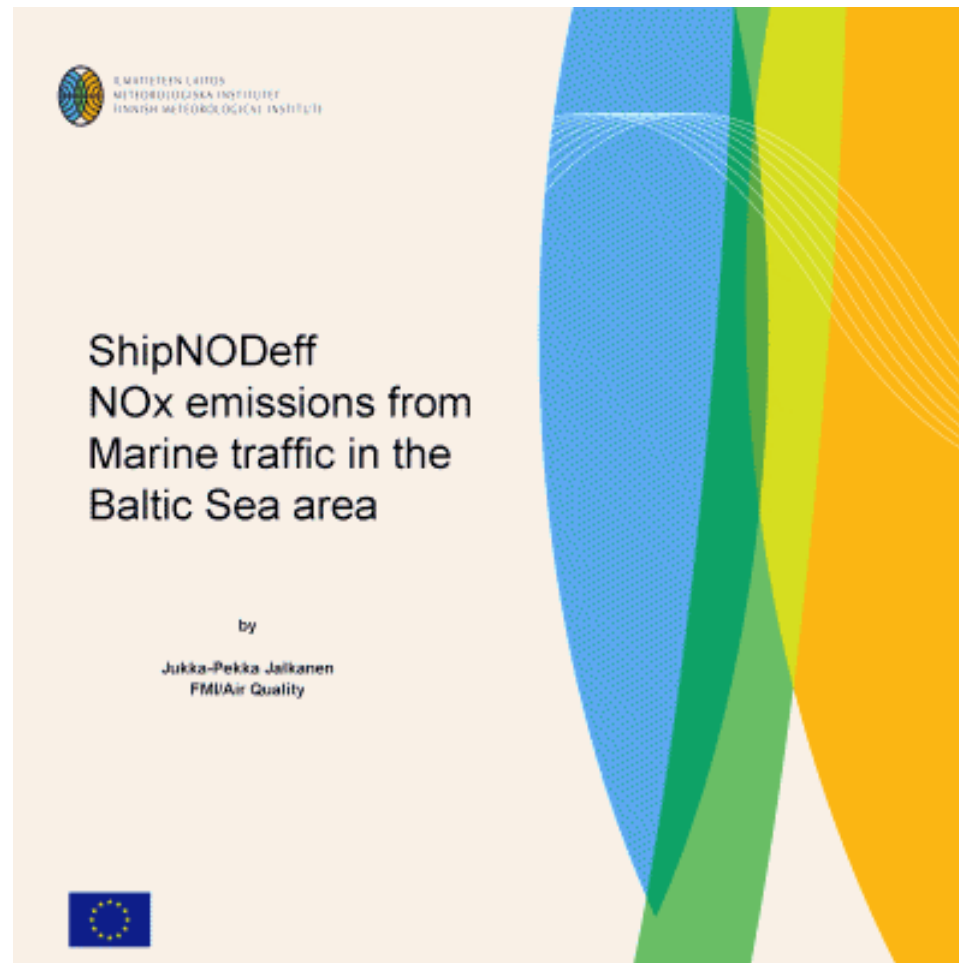
### Results and assessment

#### Relevance of the indicator for describing the developments

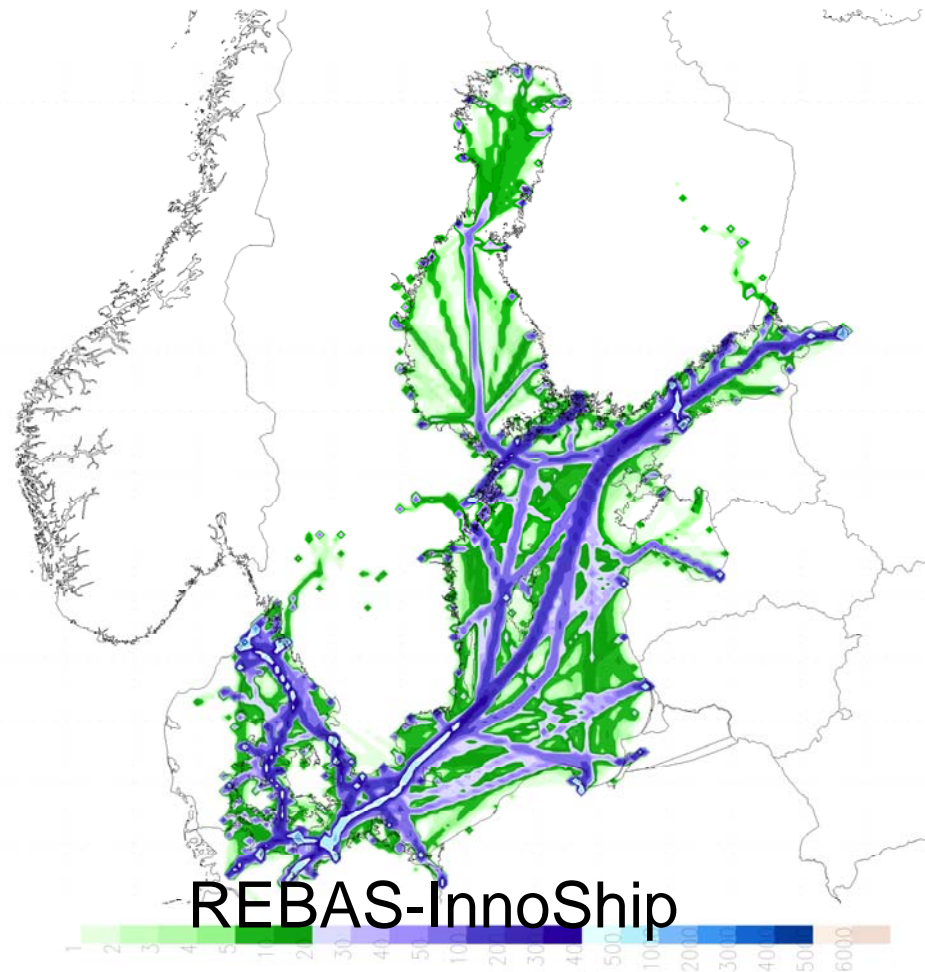
This indicator shows the annual emission levels of NO<sub>x</sub>, SO<sub>x</sub> and CO<sub>2</sub> arising from ship traffic in the Baltic Sea area.

# Live emissions

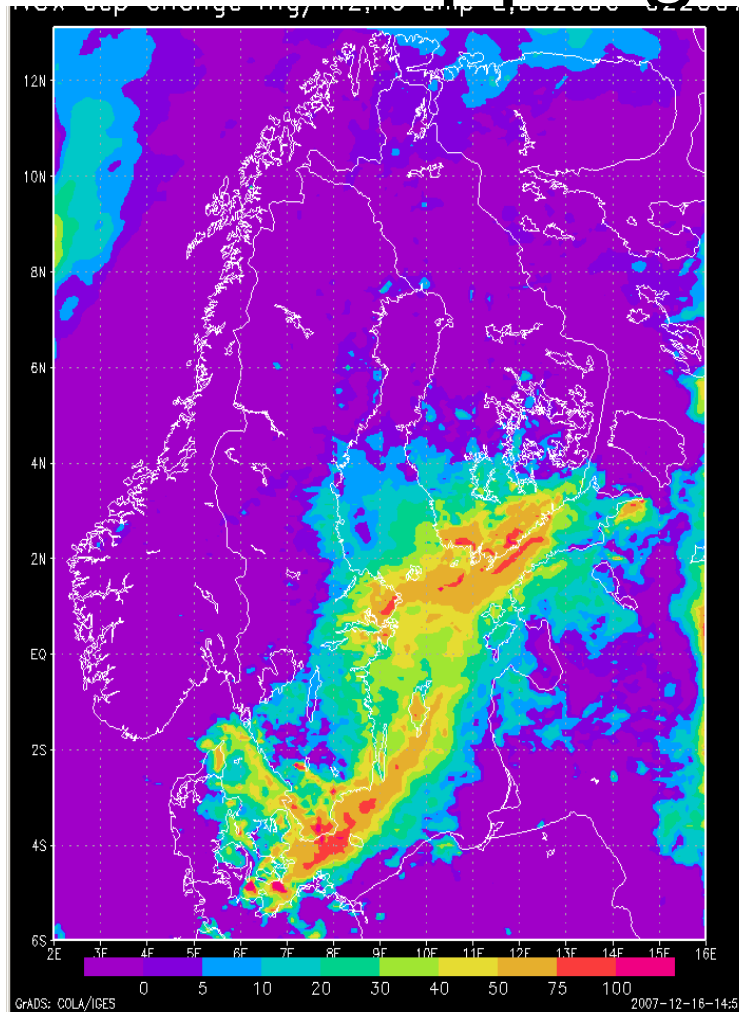
~4000-6000 individual ships/month



# Distribution of annual NOx emission

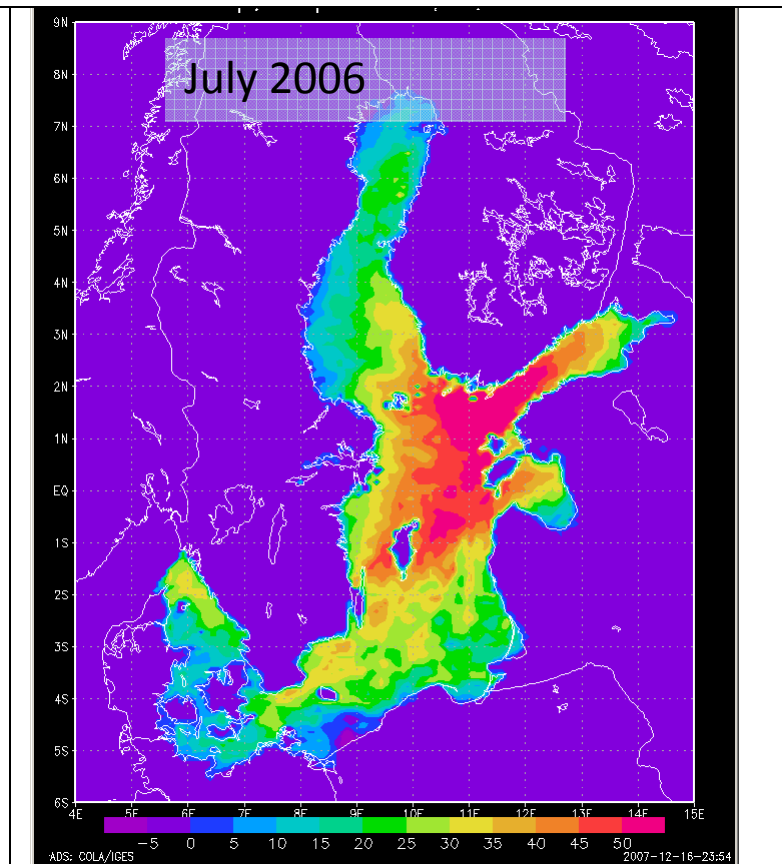
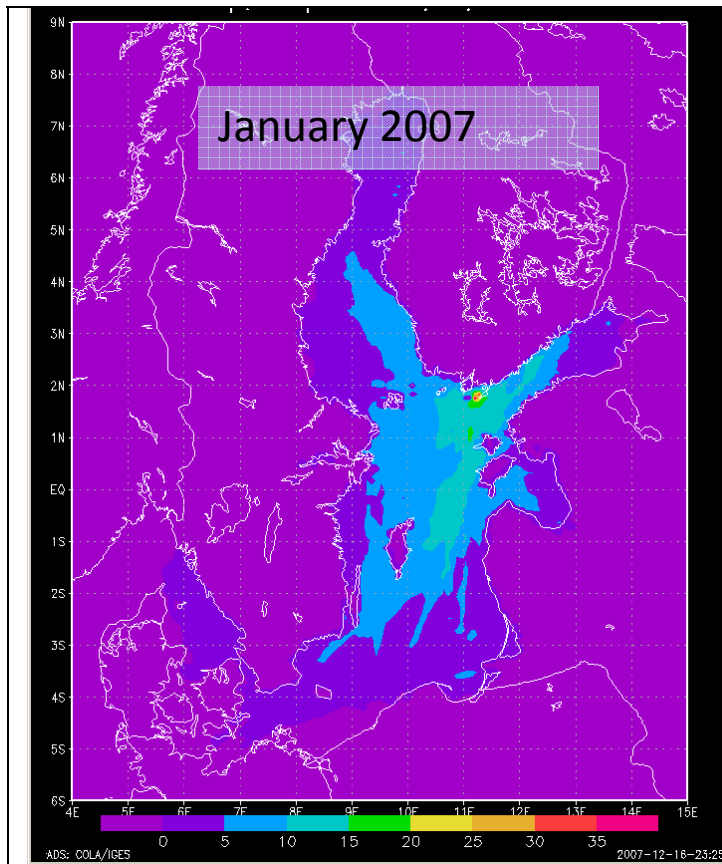


# NO<sub>x</sub> deposition (mgN/m<sup>2</sup>) due to shipping





# % of monthly NO<sub>x</sub> deposition due to ship emissions



# Addressing emissions

- ~~Single~~ ports?
- ~~Single~~ ships?
- ~~Single~~ flags?
- ~~Single~~ fairways?

Address the whole problem!  
(But build from bottom up as well)

# Objectives

- The REBAS project will:
  - build on the experience gained in ShipNODep and SNOOP Interreg projects and expand the scope of the study of health effects to the whole of the Baltic Sea area;
  - study the harmful effects of shipping to the environment and to the people living close to the Baltic Sea;
  - promote the holistic environmental management of the Baltic Sea regarding the exhaust emissions of ship traffic and port operations;
  - work with ship owners and port operators to develop, pilot and embrace innovative low emission solutions to day-to-day operations in order to reduce the effects of exhaust gas emissions; and
  - provide estimates of the economic aspects of health effects and provide future scenarios for policymakers.

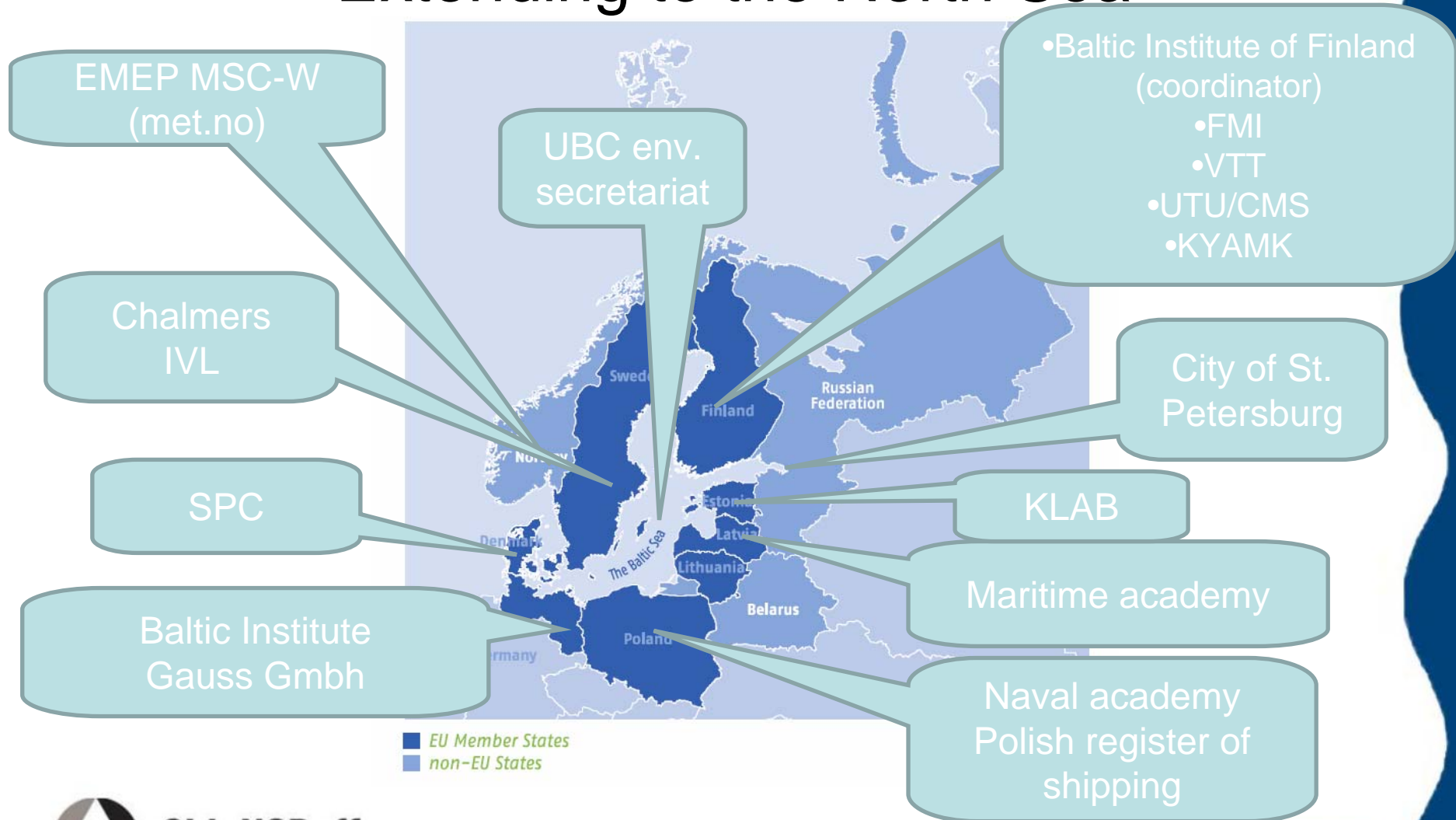


# HELCOM MARITIME 8/2009

- *“The Meeting considered the proposal for the research project “Measuring the reduction of emissions from Baltic shipping (REBAS)” contained in document 6/6 and expressed its support to the project idea as well as welcomed the suggestion to implement the project under the HELCOM umbrella e.g. in order to influence the scope of the study to serve the needs of decision-making within HELCOM.*
- *The Meeting suggested expanding the scope of the project to cover emissions from shipping in the North Sea and invited Finland to send a more elaborated project proposal to the Contracting Parties for their additional comments and suggestions, also regarding possible project partners, including from the North Sea region.”*

# Baltic-wide collaboration

## Extending to the North Sea



# Planned highlights

- Application of EMEP framework to shipping emissions (not in the formal scope of CLRTAP)
- Promotion of city- and port-level measures, exchange of best practices
- Harmonisation of responses to ship emissions between the Baltic and the North Sea
- Piloting of new compliance monitoring systems
- Global dimension: *en route* to WMO pilot project

# Anticipated output

- Cost efficiency of reduction measures (in terms of e.g. reduced costs of health effects)
- Pilot measures in cities and ports
- Collaboration between Baltic Sea Region ports, cities, ship companies, authorities, associations, NGOs
- Establishment of best practices

# Looking forward to collaborate with you!

- REBAS-InnoShip

Co-ordinator: Minna Hanhijärvi,  
([Minna.Hanhijarvi@tampere.fi](mailto:Minna.Hanhijarvi@tampere.fi))



SUOMEN ITÄMERI-INSTITUUTTI  
THE BALTIC INSTITUTE OF FINLAND

- Jukka-Pekka Jalkanen

Finnish Meteorological Institute

email: **jukka-pekka.jalkanen@fmi.fi**

- ShipNODeff coordinator

Tapani Stipa, FMI

tel. +358 40 505 8090



FINNISH METEOROLOGICAL INSTITUTE



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