Saint-Petersburg Initiative on green shipping

Saint-Petersburg INITIATIVE

Санкт-Петербургская ИНИЦИАТИВА

BSAG® Baltic Sea Action Group

The Saint-Petersburg Initiative (SPbI) in the context of the whole Baltic Sea region

- Baltic Sea Action Group (BSAG) as member of the SPbI Steering Committe’
- What is the purpose and what are the goals of SPbI concerning green shipping?

BSAG's activity landscape

Mission

Restoration of the ecological balance of the Baltic Sea in a changing climate

Target

Nutrient (re)cycling (P,N)

Elimination of hazardous substances

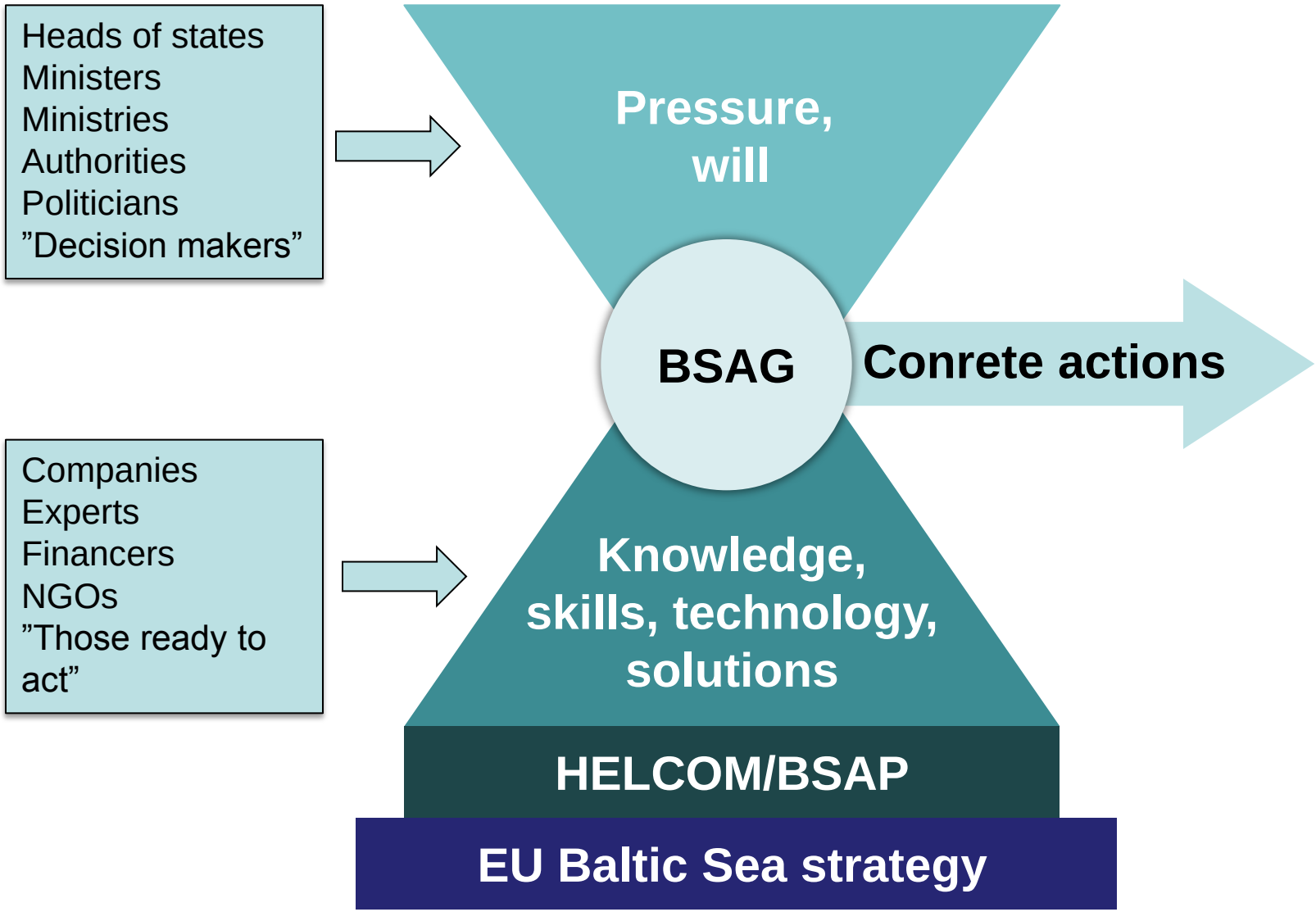
- Nutrient rich raw materials
- Contamination caused by hasu
- Water quality monitoring
- Food chain:
  - Fertilizers
  - Crop production
  - Animal production
  - Fishery
  - Food industry
  - Feed industry
  - Logistics
  - Retail
  - Consumer
- Clean and safe maritime activities

Tools

COMMITMENTS

- TECHNOLOGICAL SOLUTIONS
- OPTIMIZED APPLICATIONS
- LOBBYING
- AWARENESS RAISING

BSAG acts as a catalyst



SPbI forms an international platform for cooperation to produce actions to save the Baltic Sea

SPbI involves

- Business activities
- International financial institutions
- HELCOM
- Federal and local authorities
- EU cooperation
- Public-private partnerships

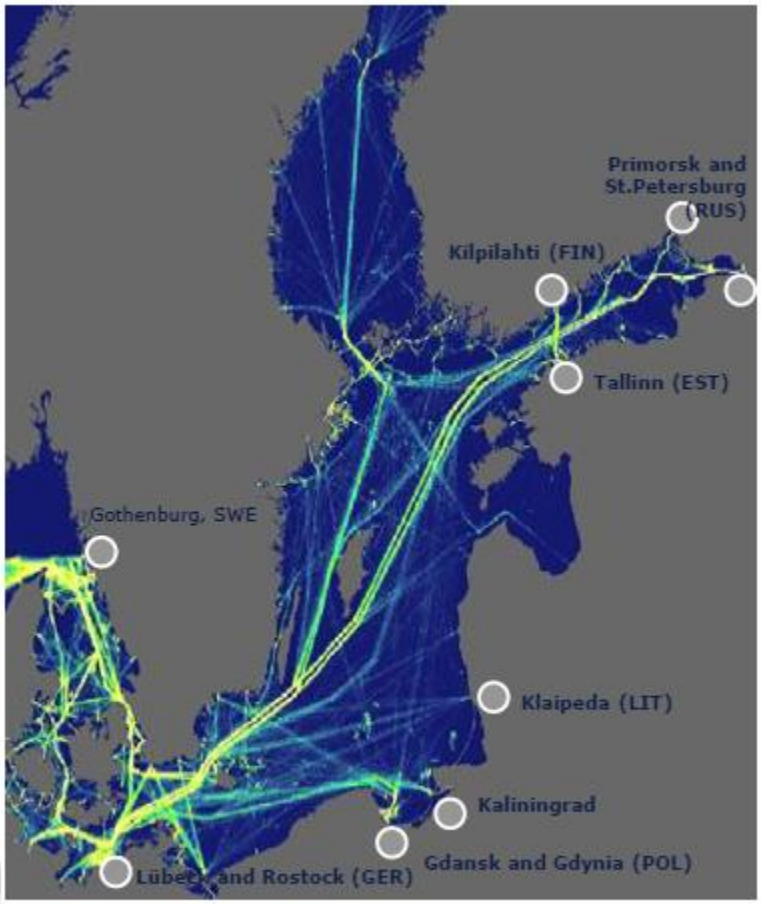
Results

SPbI generates

- Realistic proposals and specific solutions to increase economic growth by environmentally sound business solutions in the Baltic Sea region.

The Baltic Sea is under heavy stress - something must change

- Multiple pollution sources
  - Agricultural runoff
  - Untreated wastewater
  - Ship emissions
- Extremely vulnerable sea
  - Shallow waters
  - Low water exchange rate
  - Algal blooms caused by pollution
- More than 2,000 ships operating at any time, 10 000 ships yearly
- Annual ship emissions:
  - SOx: 135 000 tonnes
  - NOx: 400 000 tonnes
  - CO2: 19 million tonnes
- Ship emissions equals
  - all land-based NOx from Denmark & Sweden combined
  - twice the SOx emissions from Denmark and Sweden combined



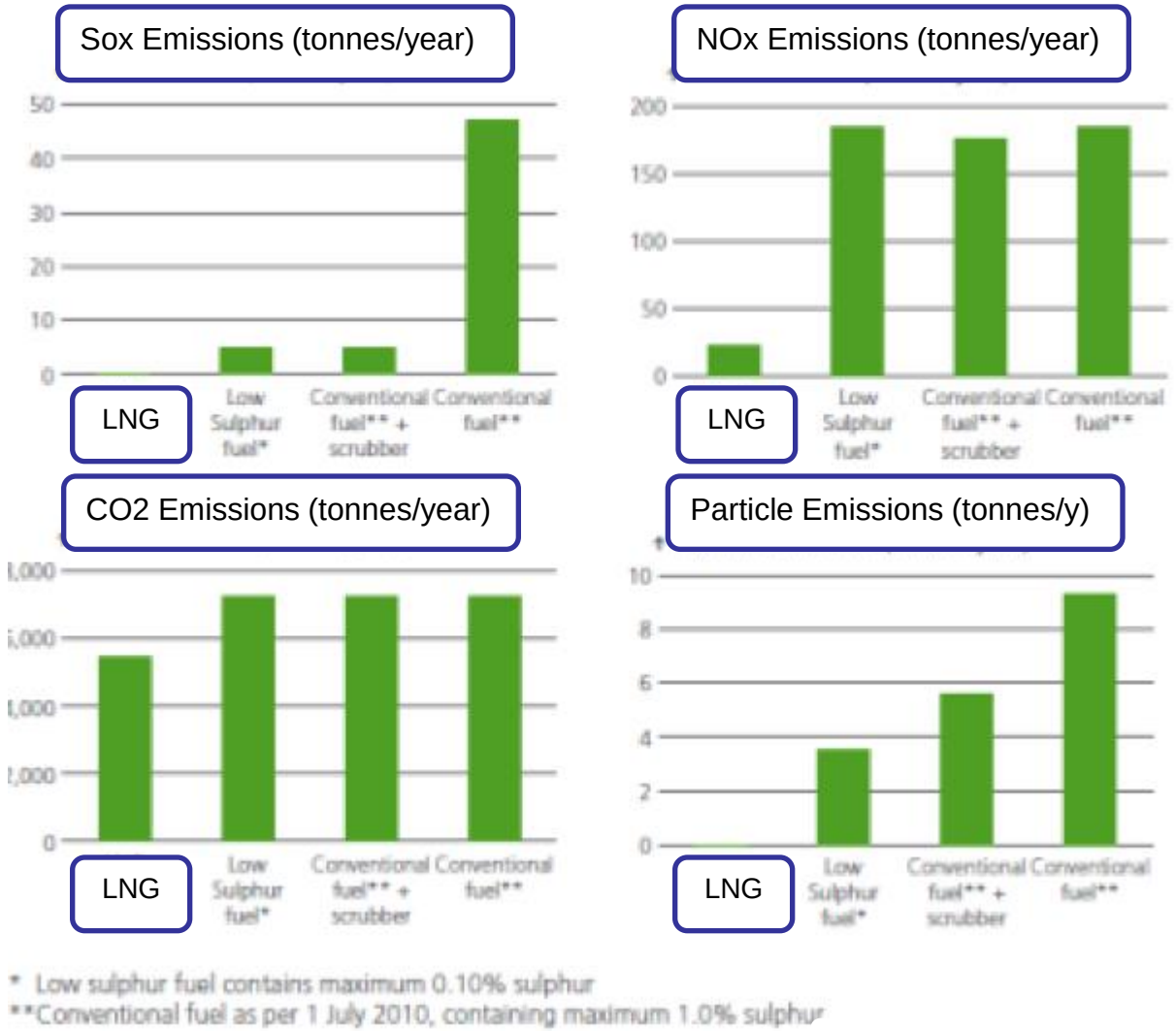
DNV·GL

Slides from Arnstein Eknes´presentation 1.16.2014

LNG will be a major clean fuel of future shipping on the Baltic Sea

- Using LNG as a maritime fuel has many positive environmental effects compared to other fuels and it directly responds to the requirements of SECA and NECA, and of climate changes
- LNG is a realistic solution:
  - The gas technology is mature and has been tested for a long period of time
  - LNG is financially feasible
  - Part of the needed infrastructure exists and preparations for major investments have been made
  - Legal aspects are under development both in the EU and IMO
  - EU and Baltic Sea region countries see LNG as one of the future solutions for clean shipping
  - World wide shipping community (companies and countries) see LNG as a real option
- LNG-related solutions create huge business opportunities and new business models in the whole Baltic Sea region
- LNG creates land-based transportation solutions

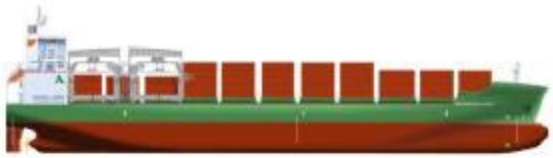
Emissions of different fuel solutions for a typical Baltic Sea cargo ship



* Low sulphur fuel contains maximum 0.10% sulphur
**Conventional fuel as per 1 July 2010, containing maximum 1.0% sulphur

Slides from Arnstein Eknes´ presentation 1.16.2014

Example: Switching 1 cargo ship to LNG for 1 year saves SOx emissions equivalent to 850 millions vehicle-km of a passenger car



5.2 t SO_x

Saved per year when 1 cargo ship switches to LNG

=

850 Mkm

Driven by a passenger vehicle

OR removing 65 000 cars from the roads (diesel driven / average driving distance as for cars in Norway pr year)

Towards LNG as Baltic Sea ship fuel

What is needed

- Infrastructure: Bunkering facilities, terminals, etc..
- Political descisions
- Conversion of ships to LNG use and new ships
  - Shipyards in the region
  - Ship design, planning
  - Engine producers
- Aid from financing institutions
- Solving legal and regulatory questions

SPbI could be the catalyst to start a **new era of sustainable maritime transport and business development** in the Baltic Sea region

What next

- Clean shipping Conference, in Moscow, April 2014
- 10th Prime Minister meeting of the Council of the Baltic Sea states (CBSS) in Turku, Finland June 3.-4. 2014