

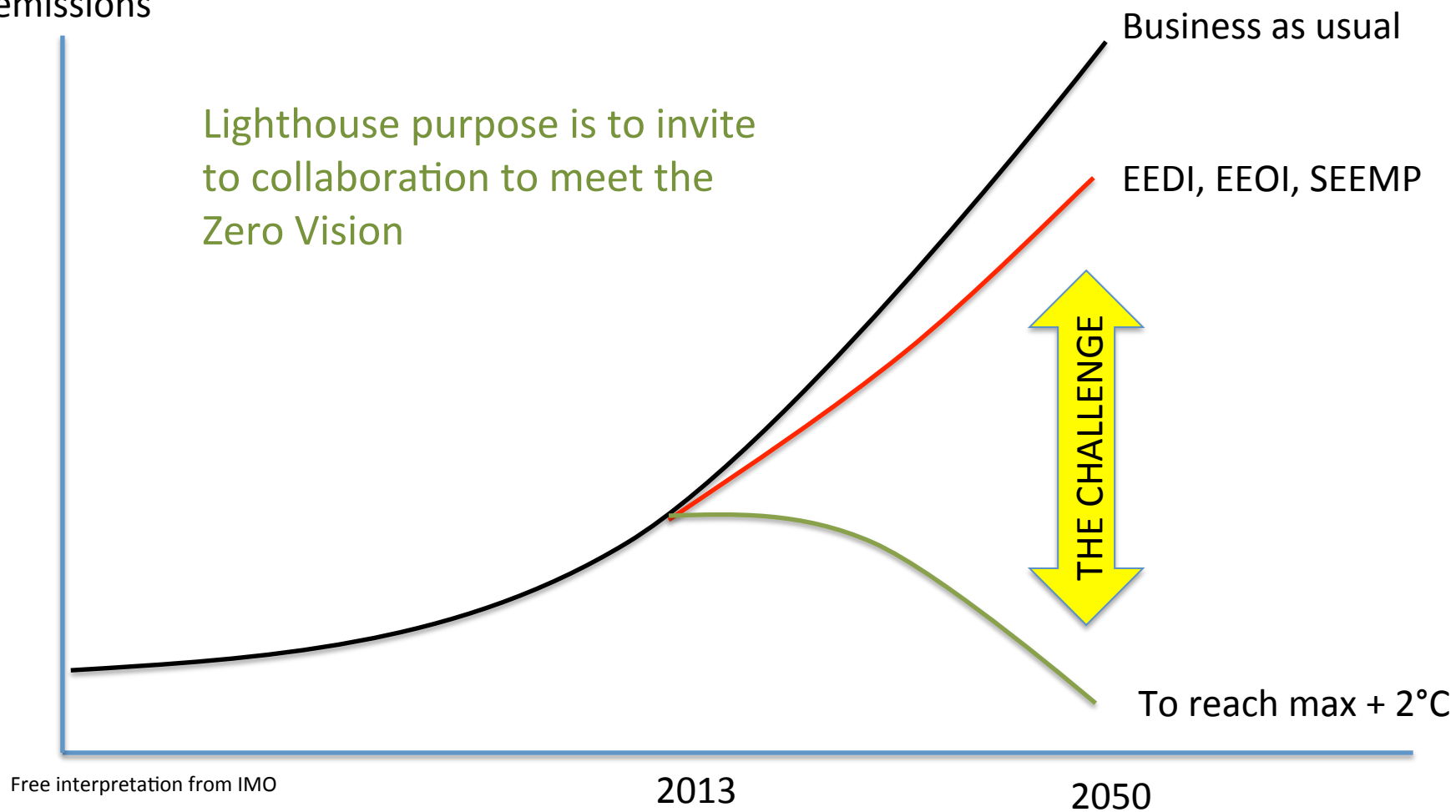
The Challenge to Meet the Zero Vision of Shipping

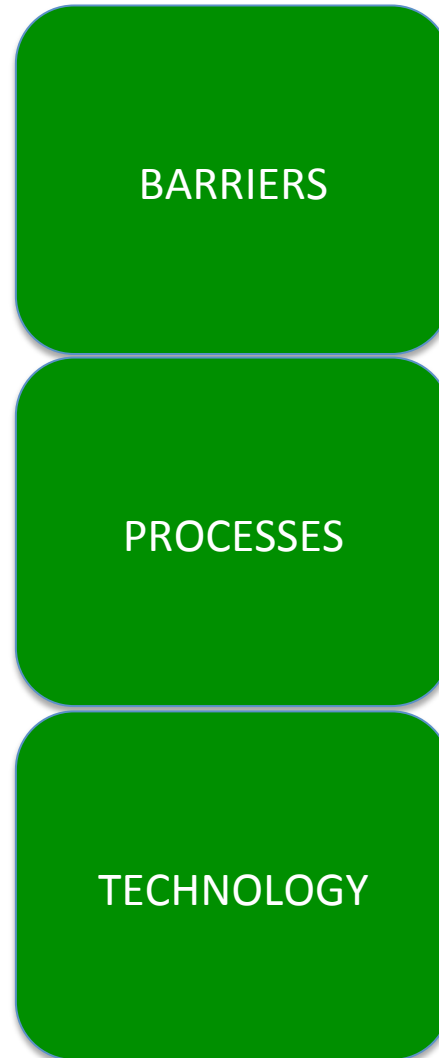
OTEC Africa Conference 2013

Bengt-Olof Petersen

Lighthouse – Swedish Center for
Maritime Research

Global fleet CO2 emissions





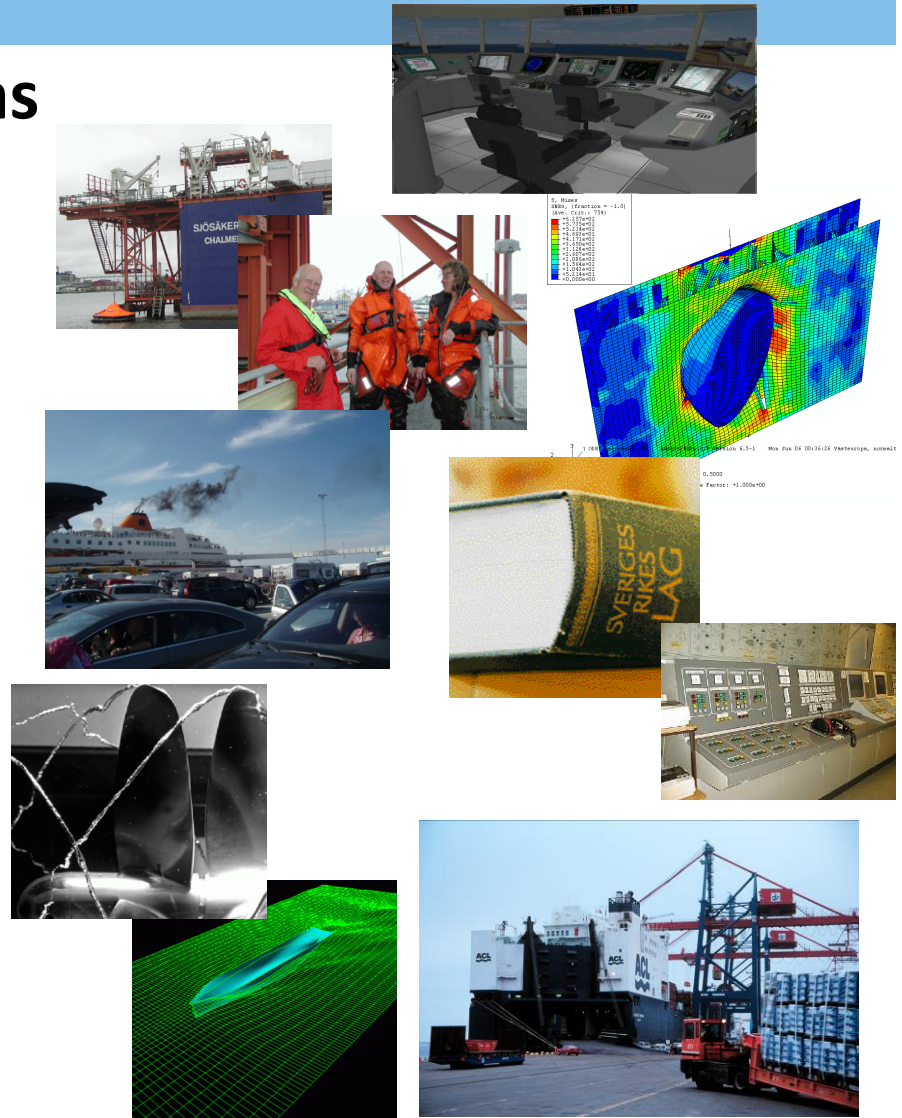
- We need a multi disciplinary approach!
- Industry owns the problem!
- Academy can offer knowledge and competence!
- Society has expectations!

Perspectives

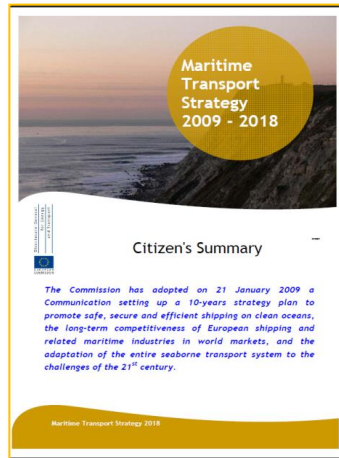
- Global perspective – export opportunities
- Port state – protect citizens and the environment
- Flag state – industry growth
- Transport mode – short sea shipping to off load bottlenecks

Theme areas

- **Eco Ship**
Maritime environment, energy efficiency and energy management
- **Ergo Ship**
Human factors and work Environment
- **Cargo Ship**
Ship design, cargo handling, marine systems and structures
- **Business Ship**
Economy, maritime logistics and maritime law
- **Safe Ship**
Maritime safety and security
- **Info ship**
IT and information treatment



GENERAL BACKGROUND: ZVT



VISION ZERO
MORE TRANSPORT AT SEA
AVOID MODAL BACK-SHIFT



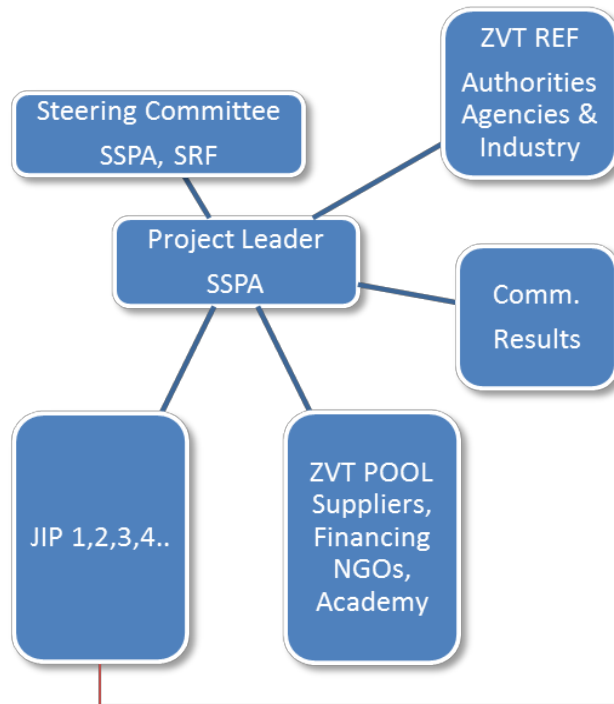
1. INCREASE ECONOMIC GROWTH
2. INCREASE WELFARE
3. INCREASE TRANSPORT BY SEA
4. REDUCE NEGATIVE ENVIRONMENTAL IMPACT, ACCIDENTS and ENERGY CONSUMPTION



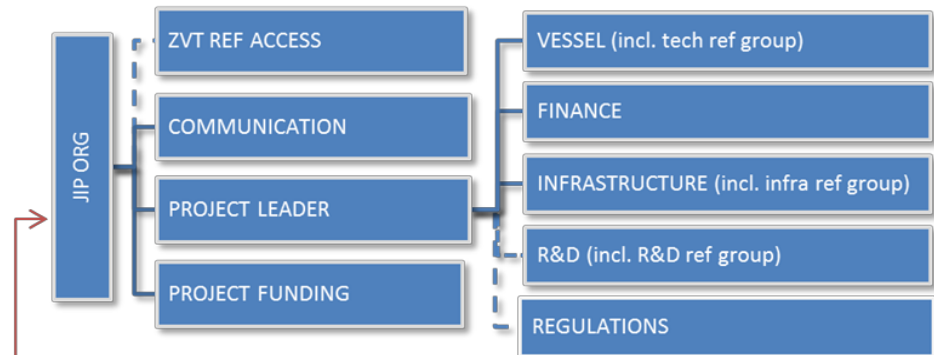
- a collaboration method and project platform for a more safe, environmentally and energy efficient transport by sea.
- an organisation where the maritime industry, academy, agencies & administrations can meet to share experiences and find common, workable and effective solutions.

GENERAL BACKGROUND: ZVT

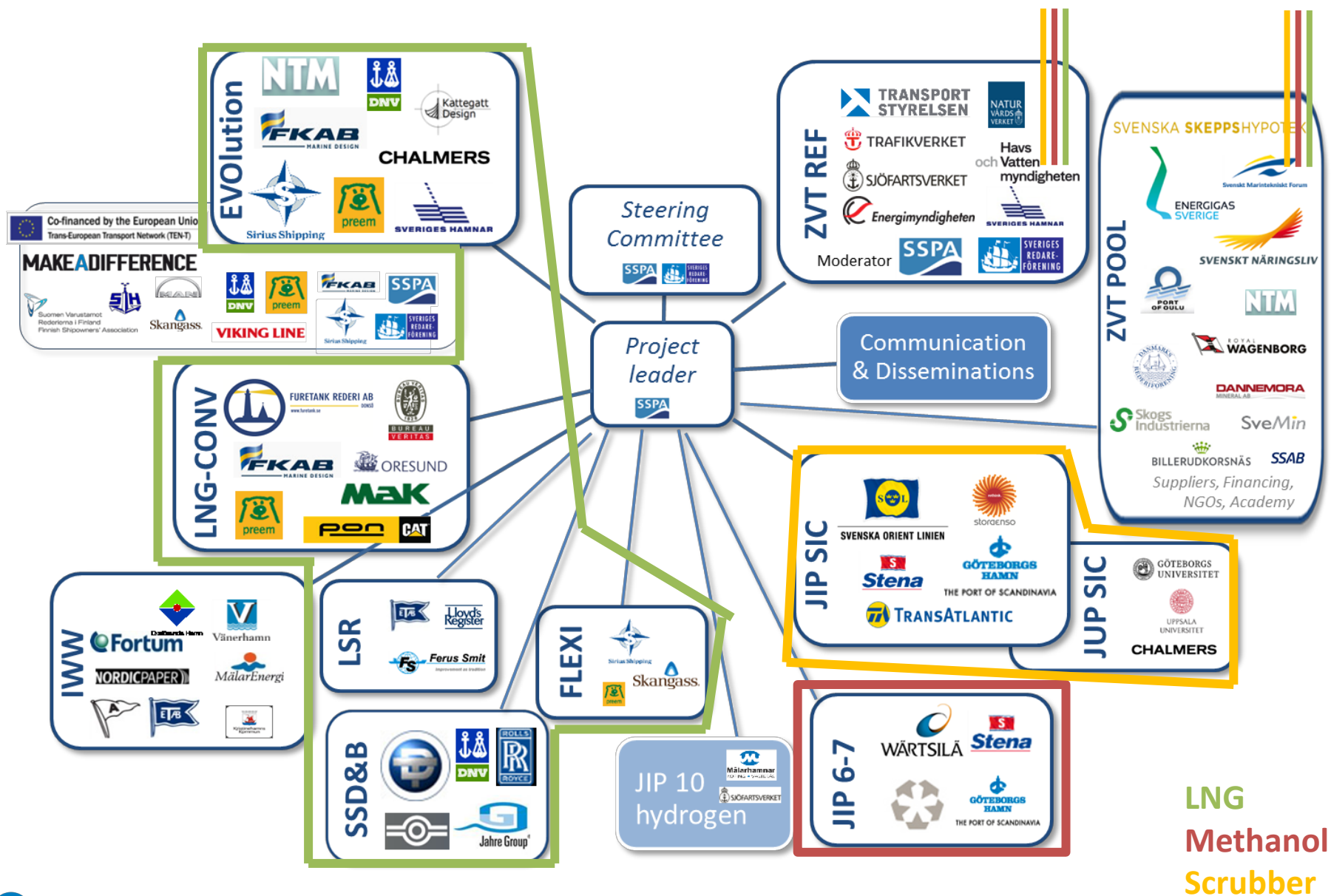
ZVT STRUCTURE



JOINT INDUSTRY PROJECT (JIP) STRUCTURE



THE GENERAL BACKGROUND: ZVT JIPs & PILOTS



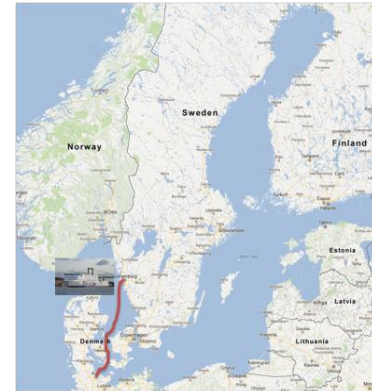
LNG
Methanol
Scrubber

GENERAL BACKGROUND: 3 EFFECTIVE WAYS FORWARD

Entire transportation systems

- Alternative fuels with low sulphur content:
 - Methanol
 - LNG (Liquefied Natural Gas)
- Scrubbers; Systems to clean the exhaust from vessels running on HFO (Heavy Fuel Oil) with higher sulphur content

The three Pilots present systems for each of these different areas and will be implemented by combining different industrial projects (Joint Industry Projects, JIP on the ZVT platform)



Methanol route



LNG routes



Scrubber routes