



Challenging wind and waves

Linking hydrodynamic research to the maritime industry

Research & New Technologies for Maritime Activities

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President MARIN

MARIN

- Maritime Research Institute Netherlands
- Large Technological Institute
- Ship hydrodynamics and nautical research
- Main office Netherlands, JV in China, offices in Brazil & US
- 2/3 of research in international projects, 85% for industry
- Core competence: Laboratories, Knowledge, Open Innovation



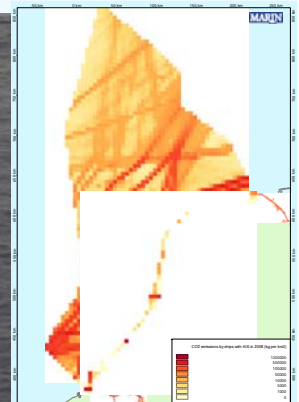
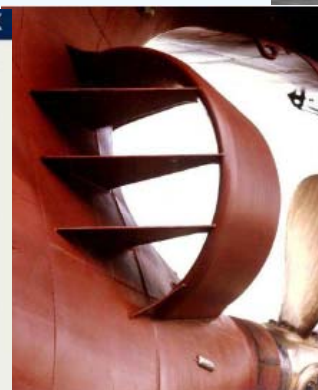
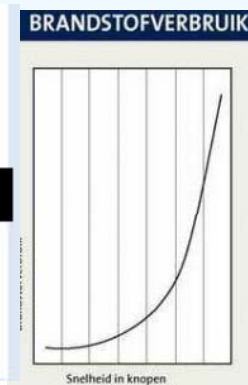
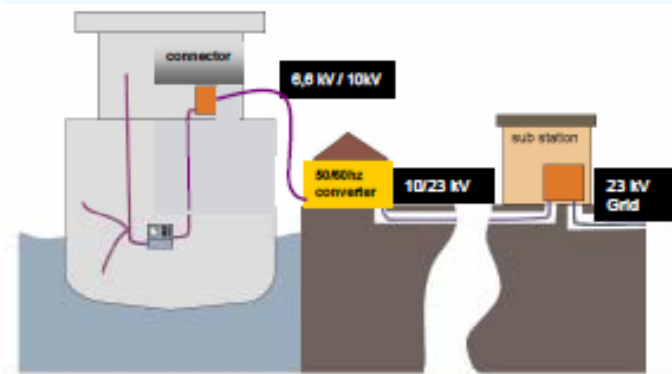
Value of the Maritime Sector

- Transport muscles of Europe (90% / 40%)
- Direct contribution to employability and GNP
 - 5% EU, 40% maritime regions
- Enables export and logistics
- Provides energy and renewable energy
- Safe and sustainable
 - 5 times less emissions per tonkm

Challenges for the maritime sector

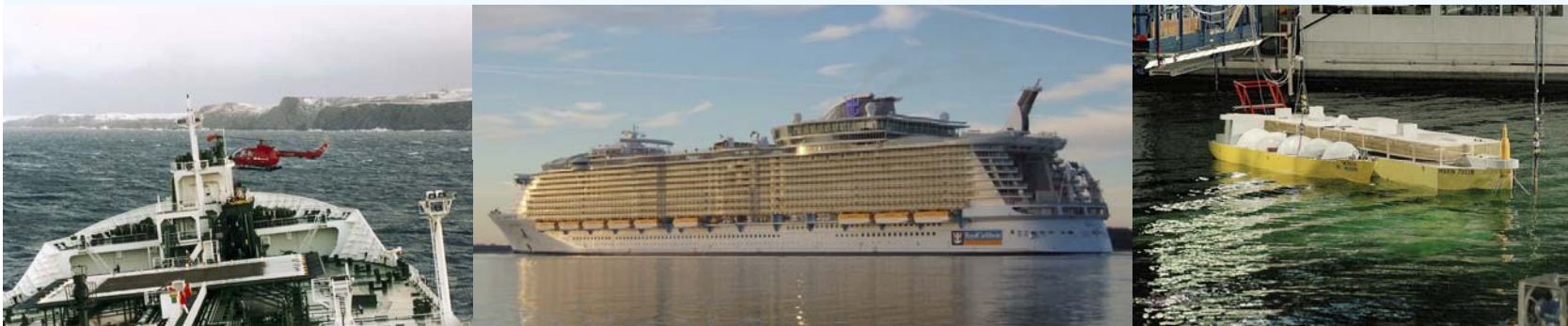
– Sustainability

- <3% of world CO₂, 90% of transport
- Reduce energy use & emissions, 20% in 2020
- Technical and operational solutions available
- Global regulations needed to provide a sound economic base



Challenges for the maritime sector

- Global competitive position
 - Unique cluster, strong knowledge base
 - Stimulate RD&I on EU and maritime cluster level to integrate the various sectors
 - Maintain a strong knowledge base
 - Products, operations, systems and people



Challenges for the maritime sector

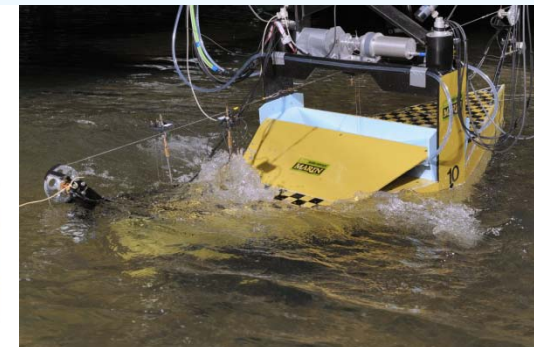
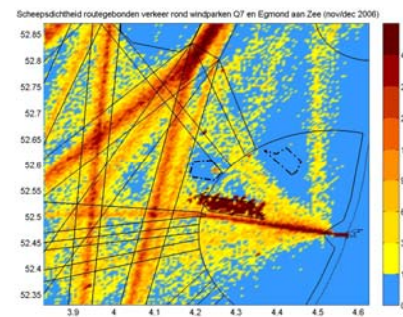
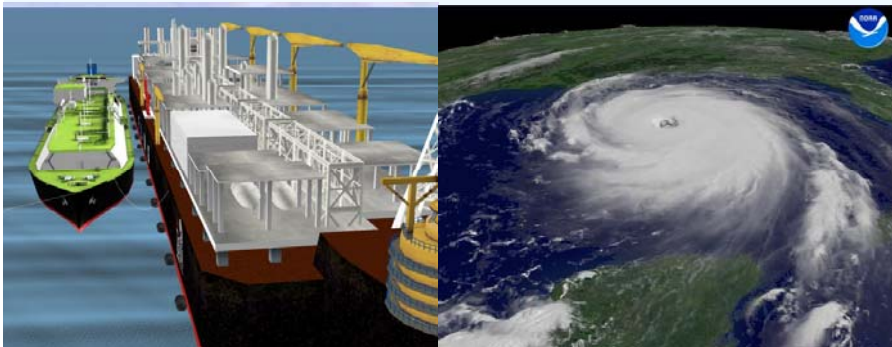
- Increase maritime transport function
 - Transport enables economic growth, networks are congested
 - All modalities are needed
 - Provide seamless integration of rail, road & water transport
 - Development of communication & information systems, integrate in logistic systems, innovative solutions
 - Maintain high safety level



Challenges for the maritime sector

– Energy

- Long term: New renewable and alternative energy solutions
- Short term: Allow transition time. Explore available energy resources as extreme offshore locations or LNG
- CO2 storage
- Multiple use of oceans/seas, safety



— Key issues for EU:

- Global regulations on safety & sustainability:
Europe must lead and act
- How to regulate the multiple use of the seas
- Maintain applied knowledge base
 - Attract, educate and reward engineers and researchers
 - Integrate knowledge domains (human, logistics, technology,.)
- More focus in EU RD&I programs
 - Key issues, smaller programs, more effective

Thank you for you kind attention