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Environmental impact of low sulphur ship fuel: measurements and modeling strategies

Priority Area on Clean Shipping

Brussels, 30th of May 2017

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The EnviSuM Consortium

FI

University of Turku (lead partner)
Finnish Meteorological Institute

SE

Chalmers University of Technology
City of Gothenburg
University of Gothenburg

DK

Maritime Development Center of Europe

NO

Norwegian Meteorological Institute

PL

Maritime University of Szczecin

EST

Tallinn University of Technology

GER

Baltic Marine Consult GmbH

HELCOM

+ 12 associated partners

- Ship owners
- City administrations
- Foundations
- Companies

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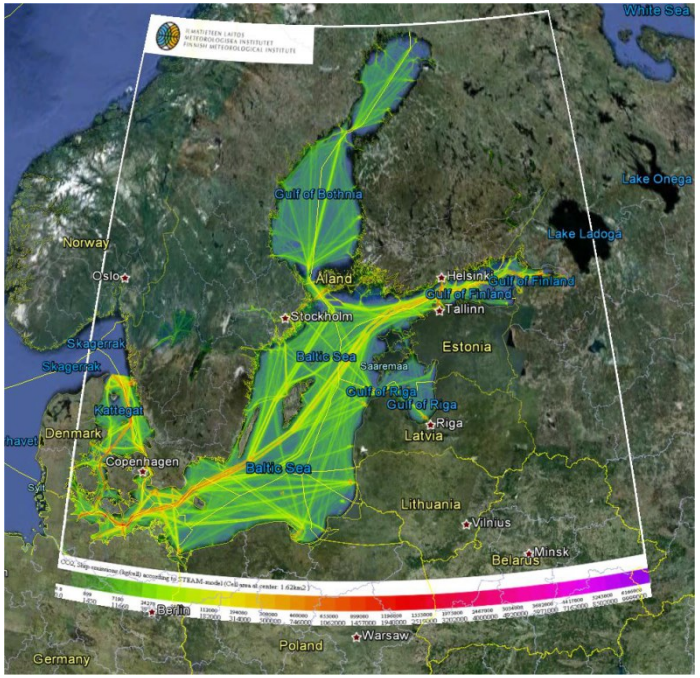
Scope of the project; keywords

- Ship emissions
  - Baseline 2014, 2030 scenarios
- Modeling; emissions + atmospheric dispersion
- **Measurements**
  - Air emissions from ships; Scrubbers and LNG
  - **Air quality in cities**
- Impacts on environment
- **Human health impacts**
  - Baltic Sea area
  - Cities (PL, SE, RU)
- **Testing compliance monitoring approaches**



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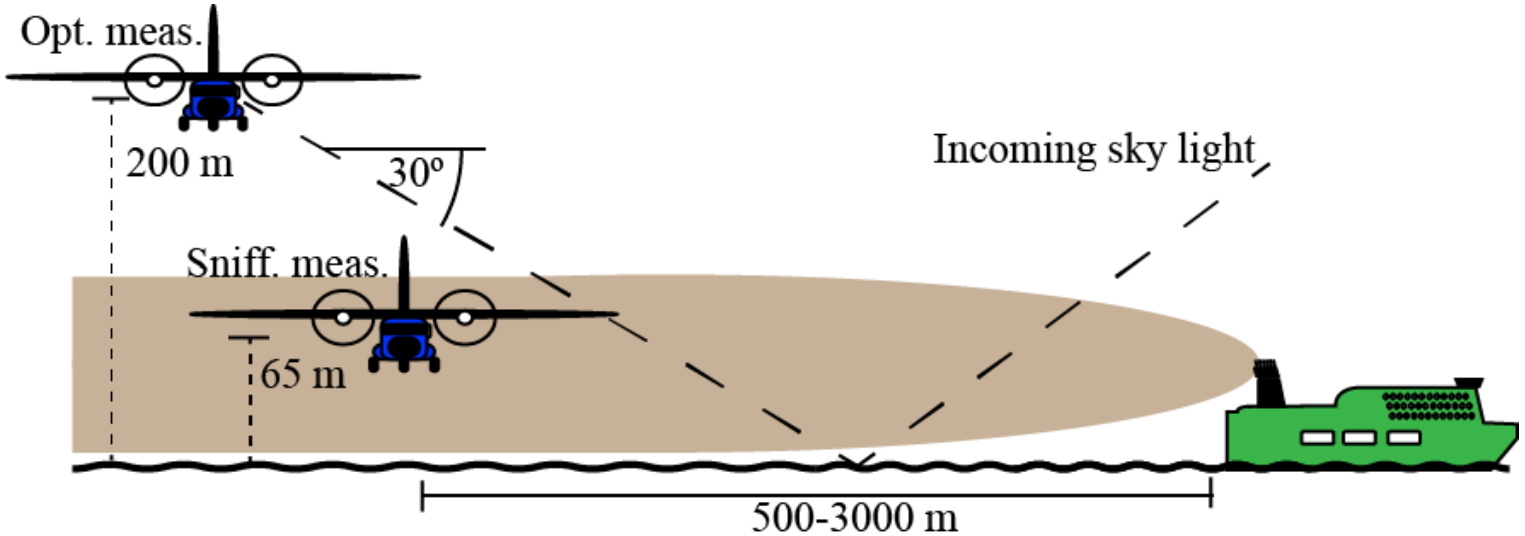
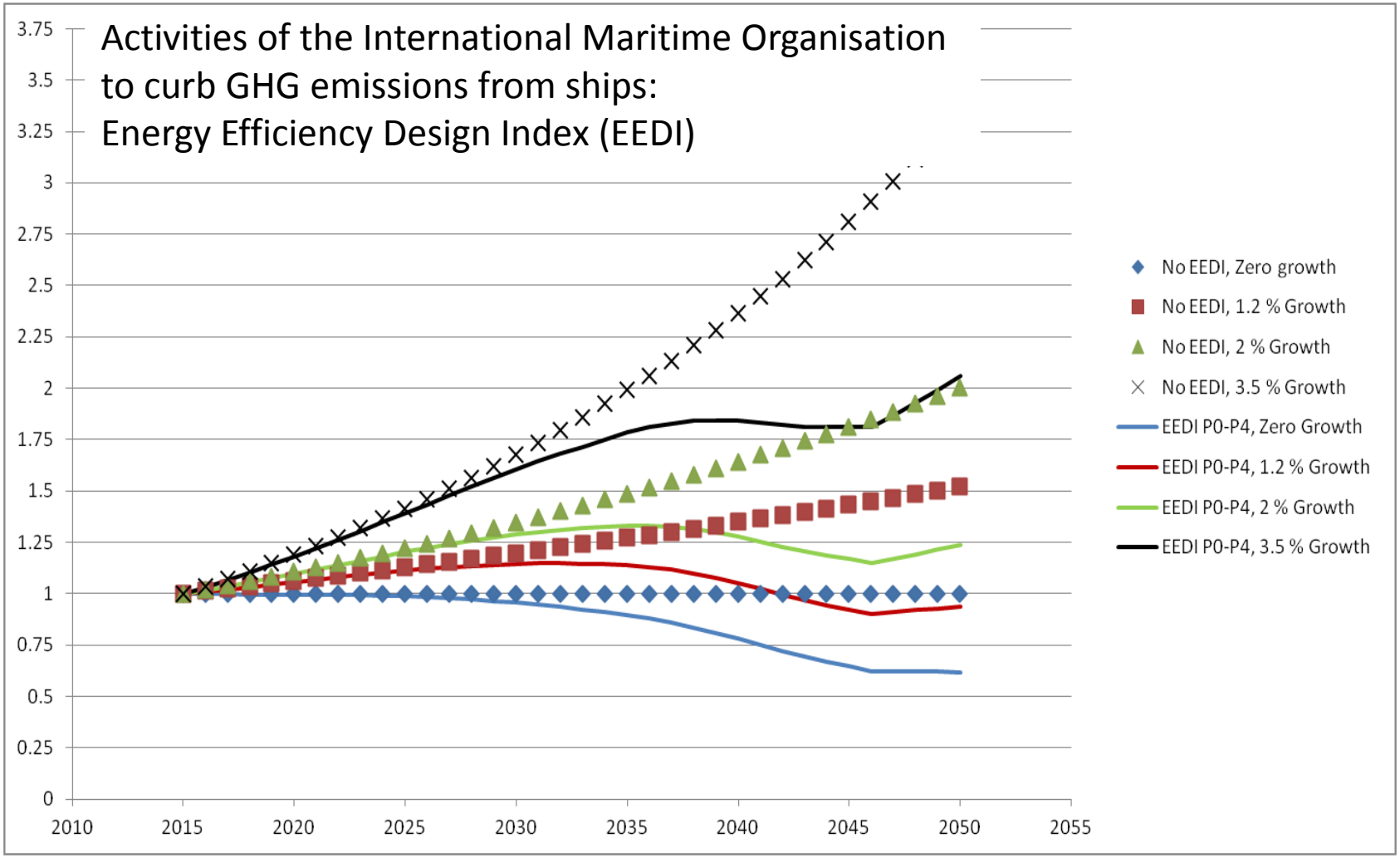
Testing compliance monitoring approaches

Measurements from
- Land
- Sea
- Air
- (Space)

Ship channel of Gothenburg



Challenges; GHG emissions from global shipping



Key messages

- **EEDI is not enough; too little too late**
  - If growth is over 1.4% per year, no reduction in 2050
- **Gaps in knowledge, which EnviSuM will target**
  - Release of unburnt methane to air (LNG)
  - Black Carbon (BC) emissions, different fuels
  - Impact of SOx scrubbing on BC
- **Contribution of ships to air quality in cities**
  - For Helsinki, this was 2-3% of small particles
  - How about other cities?

Thank you

For further information, please contact
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