

Mitigating and reversing the side-effects of environmental legislation on Ro-Ro shipping in Northern Europe

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Background

In January 2015 the new limit for the content of sulphur in marine fuels within Emission Control Areas (ECAs) was reduced to 0.1%. The anticipated increased operating costs borne by Ro-Ro operators in the North Sea and the Baltic due to the stricter regulation could result in the shutting down of some routes and a redistribution of cargo flows with land-based alternatives. The exact repercussions of the new sulphur limits are difficult to identify in the wake of the currently very low fuel prices for both low-sulphur and heavy fuel oil.

Other project participants

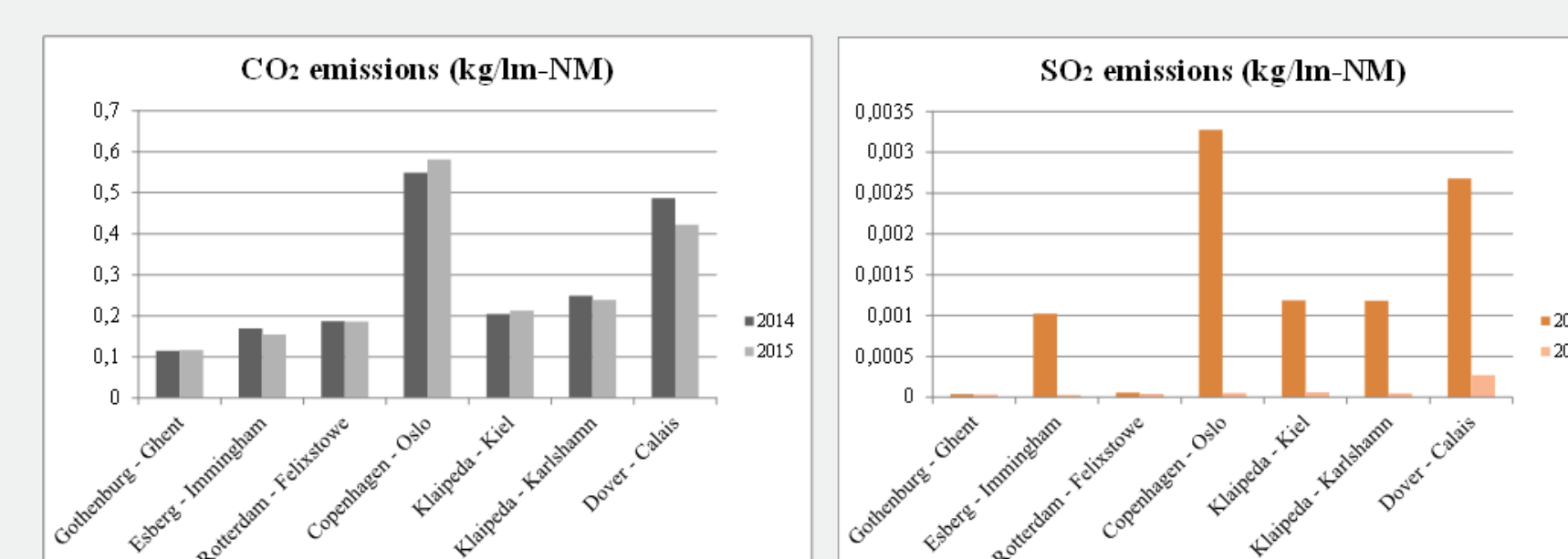
Harilaos N. Psaraftis – Professor, Principal Investigator
Jakob Kronbak – Associate Professor
Hans Otto Kristensen – Consultant
George Panagakos - Postdoc

Objectives of the Project

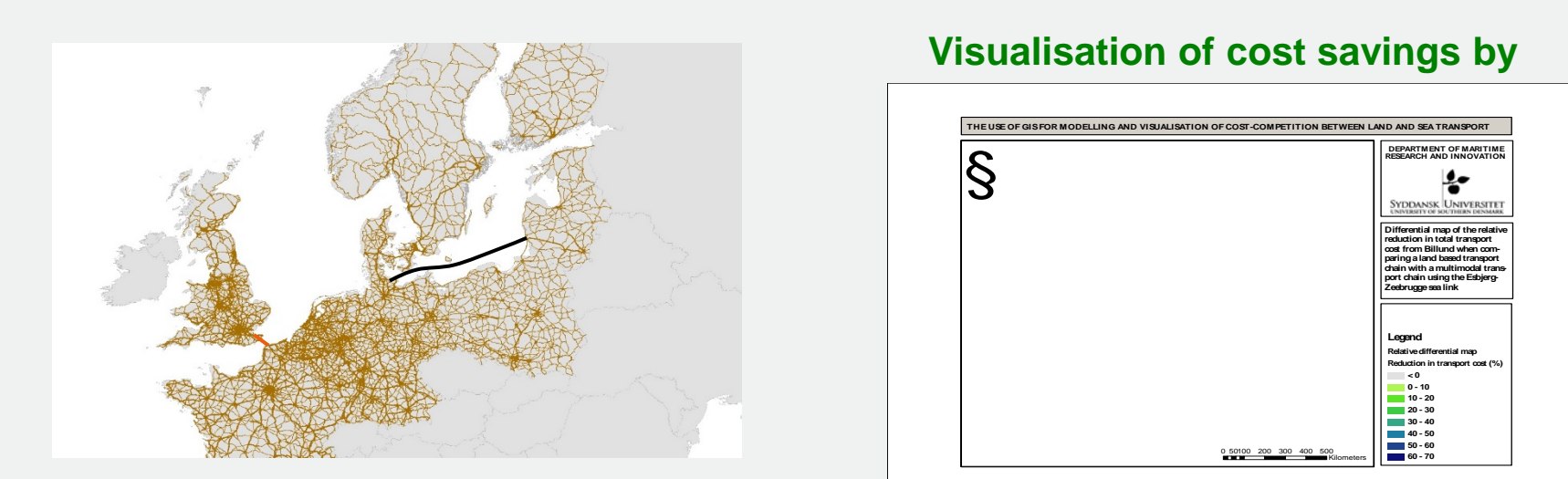
The main objective of the RoRoSECA project is to identify and assess possible technical, operational, regulatory and financial measures for the mitigation and reversal of the negative repercussions of environmental legislation to the market shares of RoRo shipping in Northern Europe. The project team is working closely with DFDS Seaways, a leading Ro-Ro operator that offers services within Emission Control Areas.

Methodology

An enhanced modal split model is calibrated to estimate modal shifts attributed to changes in the generalized cost of transport of competing modes. The model is then used to estimate the implications of the low-sulphur requirements on modal choice, the environmental balance of the system, as well as the profitability of the examined Ro-Ro service.



2014 vs 2015 Comparison of emissions per transported ton-NM for the examined routes



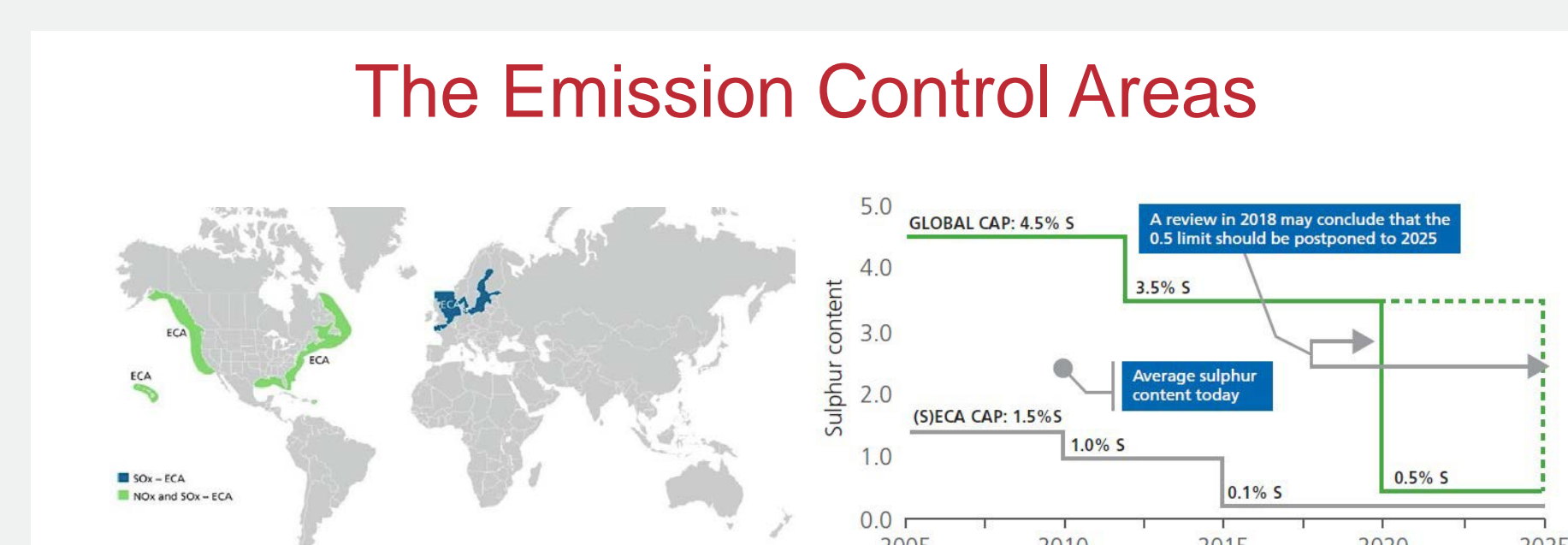
The Road network model used to estimate the transport costs for the land-based options

Mitigation measures

Due to the very low fuel prices, the short-sea shipping operators have had a very positive year in 2015 and 2016. However, project results indicate that should fuel prices increase, certain routes may face significant threats due to losses of cargo. A set of operational and policy measures are examined as options that include:

- Speed reduction
- Alteration of service frequency
- Investments in abatement technologies
- Provision of subsidies to ship operators
- Internalization of external costs
- Easing of bunker adjustment factor (BAF) surcharges to shippers
- Additional taxation on land-based options
- ECO-Bonus like systems

Simulation is used for the evaluation of each measure, while comprehensive emissions inventories are constructed for all competing modes. The project will provide recommendations to all key stakeholders



Press-releases after the drop in oil prices

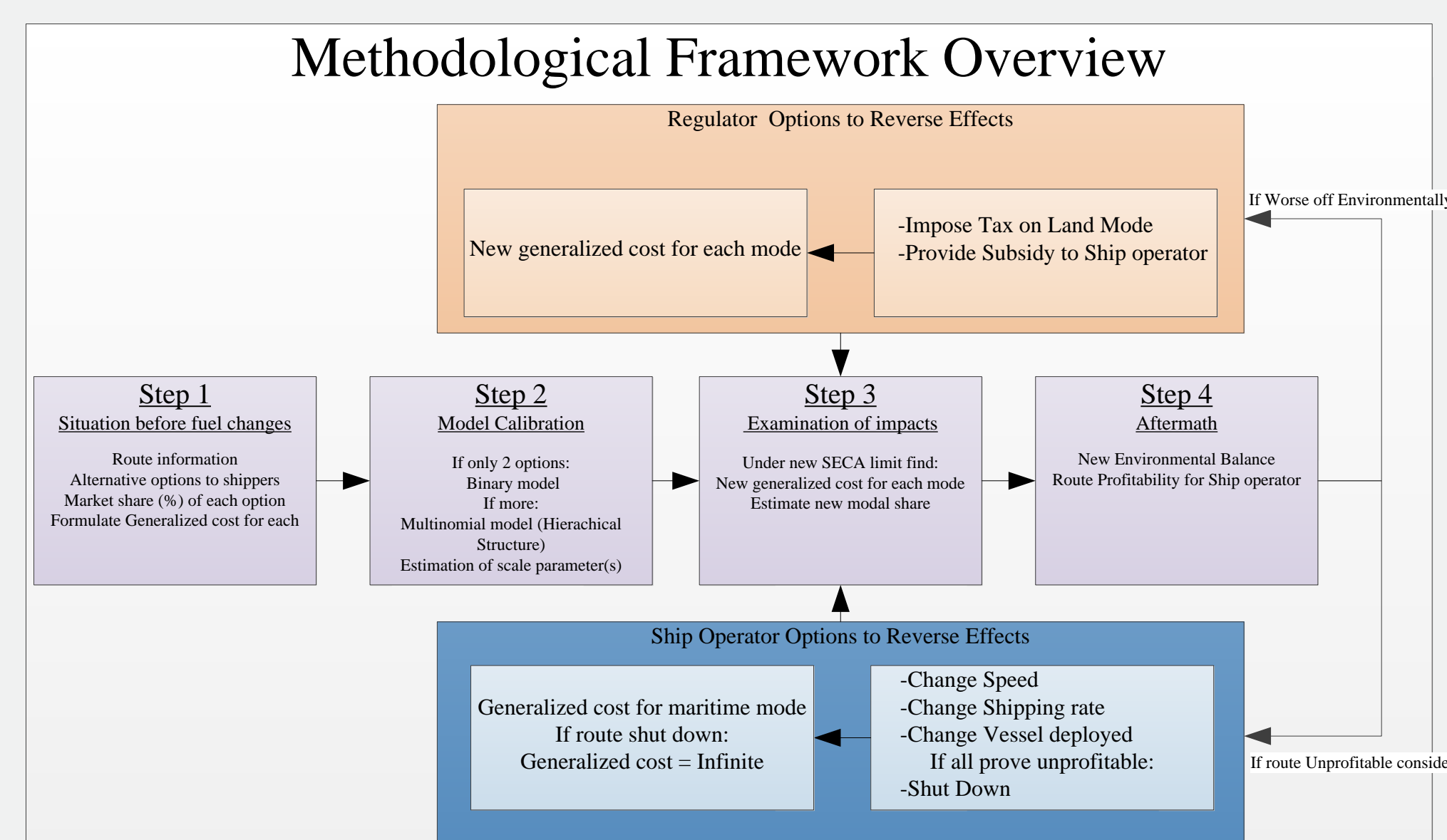
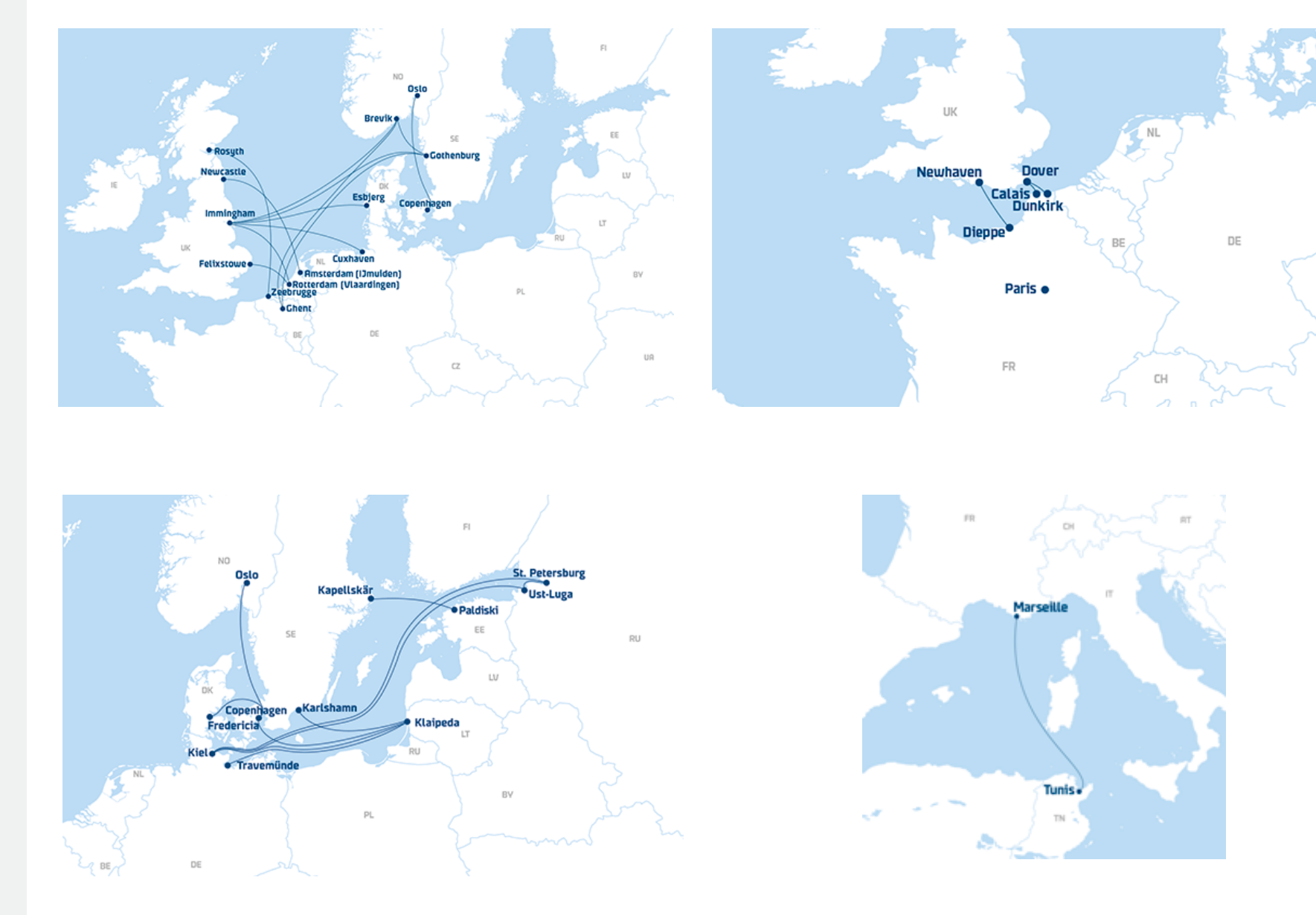
DFDS Wraps Up Record Year, Expects Higher Revenue in 2016

Danish shipping and logistics company DFDS posted a profit of DKK 1.07bn (USD 151m), up by 89% when compared to last year's DKK 571 million. For the full year 2015, the group reported revenue increase of 5% to DKK 13.5bn. Organic revenue growth, adjusted for route closures and acquisitions, was 7% mainly driven by 7% higher freight shipping volumes and the more passengers in the fourth quarter, organic revenue growth was 10%.

Stena Line records 16% yearly growth on North Sea route

Stena Line has recorded the 16% growth on the North Sea route. The company's revenue on the route increased from DKK 1.1bn in 2014 to DKK 1.27bn in 2015. The growth was driven by a 16% increase in freight shipping volumes and a 10% increase in passenger revenue.

The DFDS Network



Overview of the Developed methodological framework

Funded by:



Collaborating Partners:



Interested in the RoRoSECA project?

Join our final Workshop. June 6, 10:00-16:00
DTU, Anker Engelunds Vej 1, Building 101, Room S9

June 6 2017, 10:00-16:00

Register here:

<http://www.roroseca.transport.dtu.dk/News/Final-WS>