

# Electric Ship Traffic

# EleST

# 06/12

## ABOUT THE PROJECT

Ship traffic serves 90 % of global trade and emits twice the greenhouse gases of air traffic. To target this sector, EleST analyses the possibilities for electric ships. By modelling the energy behaviour functions of different ship traffic segments, the project identifies, specifies and simulates the most promising energy carrier, conversion and supply chain options for maritime traffic.

## THE OBJECTIVE

The objective is to identify promising paths for integrating renewable energy sources and technologies into ship traffic environment. A scenario analysis will outline necessary invest-

ments by ship owners to 2020. Here, the objective is to conceive a temporal techno-economical evolution of promising integration paths.

## THE RESULTS

Results show that in 2012, onboard electrical energy generation systems can compete with the high-cost reference energy systems, and by 2020, they can compete even with the most affordable reference energy systems. However, in most cases the need for additional energy storage will eliminate the commercial feasibility of onboard energy generation systems.

In general, energy efficiency improvements are still the easiest and most cost effective way to cut emissions.

Different hybrid solutions are promising, as their market maturity may be greater than with completely new energy systems that do not utilise traditional technologies. Integration of on-board energy systems would probably be more economical due to existence of additional energy storage capacity. Biofuel possibilities are challenging, as biomass volumes are probably too low to be able to secure totally fossil-free energy supply chains for larger shipping activities.

## PROJECT PARTNERS

Aalto University (FI), Technical University of Denmark (DK), Chalmers University of Technology (SE) and Prototech AS (NO).

