

EXPERIENCES FROM NORTHERN EUROPE /01

This fact sheet is a part of the EU LIFE project: LIFE4MEDECA to designate a Mediterranean Sea Emission Control Area to reduce health and climate damaging emissions of air pollution from ships.

BACKGROUND

Air pollution (SO_x and NO_x) from shipping contributes significantly to premature mortality and morbidity and to acid rain thereby damaging cultural heritage, crops and nature. NO_x causes by far most of the health effects and thereby dominates resulting damage costs.

Black carbon from shipping contributes significantly to both health effects and climate change. Regional Emission Control Areas for SO_x and NO_x minimize air pollution from ships.

NORTHERN EUROPEAN EMISSION CONTROL AREA

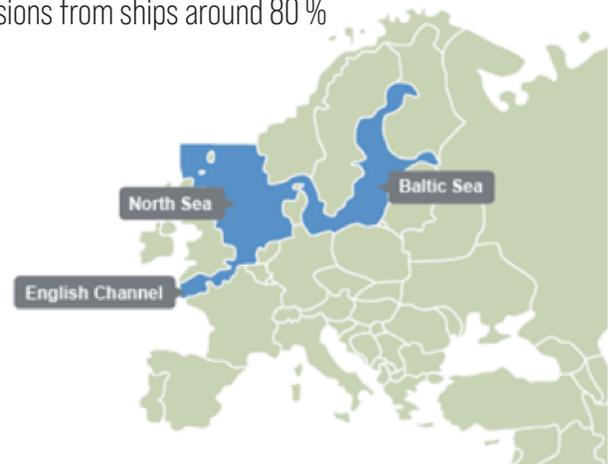
SO_x Emission Control Area enforced from 2007 with the strictest sulphur limit from 2015. NO_x Emission Control Area enforced from 2021 for all new build ships. Reduces SO_x and NO_x emissions from ships around 80 % and black carbon around 30 %.

Covers the Baltic Sea, English Channel and parts of the North Sea (Figure 1).

ENVIRONMENTAL IMPROVEMENTS

The SO_x Emission Control Area has significantly reduced air pollution (Figures 2 and 3).

The NO_x Emission Control Area causes similar NO_x reductions when fully implemented.



Source: International Maritime Organization

Figure 1: Northern European Emission Control Area limiting SO_x, NO_x and black carbon from ships.

SECA: Effects of 2015 limit on SO ₂	Anholt	Risø	Tange
Before: Mean 2011-14, 1 % S (µg S/m ³)	0.33	0.34	0.22
After: Mean 2015-16, 0.1 % S (µg S/m ³)	0.13	0.17	0.10
Reduction (µg S/m ³)	0.20	0.17	0.12
Reduction (%)	60 %	50 %	55 %

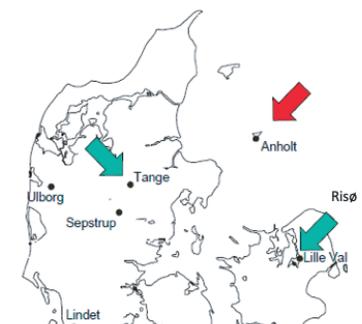


Figure 2: SO₂ levels in Denmark before and after the 2015-limit in the Emission Control Area



EXPERIENCES FROM NORTH EUROPE /02

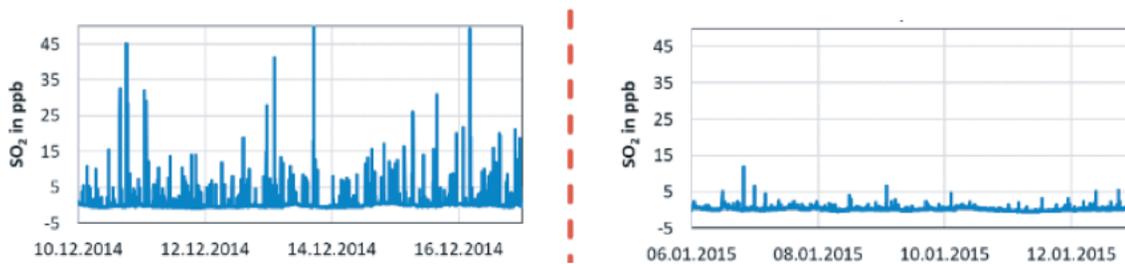


Figure 3: SO₂ levels in Northern Germany before and after the 2015-limit in the Emission Control Area

ENFORCEMENT

Fuel samples in ports and sulphur measurements under bridges and at sea by helicopters. Out of 300,000 ship passages in Danish seas only 20 cases of violations were detected. The measured drop in SO₂ concentrations indicates almost 100 % compliance.

SOCIO-ECONOMIC ASSESSMENT

The annual health benefits of the SO_x Emission Control Area: 4.4-8.0 billion euro in 2015. Saved health costs are double of added fuel costs: Earning rate of 100 %. Savings related to the NO_x Emission Control Area will be many times higher.

IMPACT ON TRANSPORT MODE

The Emission Control Area did not cause a cargo transfer from ship to road. Ship transport had a higher growth compared to road in the Emission Control Area countries. There was at no time a lack of cleaner compliant distillate ship fuel.

ECONOMIC IMPACT

The Emission Control Area did not cause notable price increases in consumer prices. The expected consumer price increase is 0.0001-0.005 %. The administrative burden for maritime authorities and ports is insignificant.

The costs for ship-owners are passed on as minute price increases.

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