

Swedish Shipowners' Association

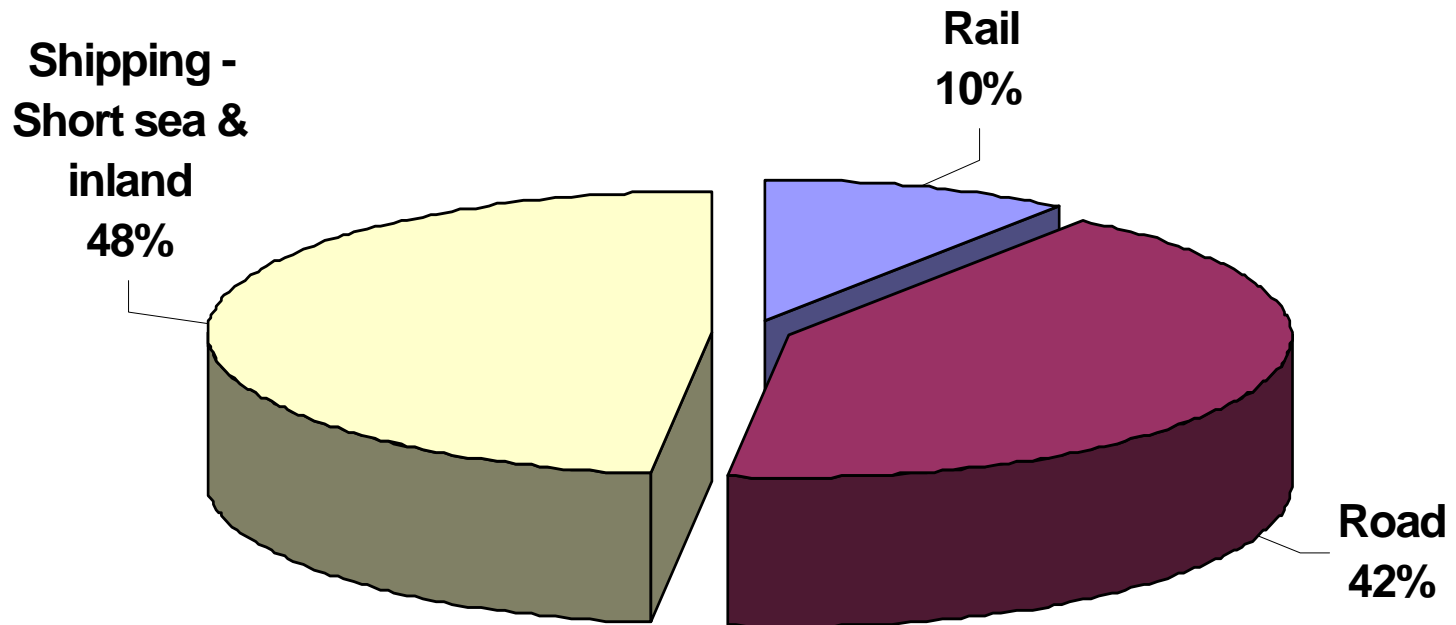
**An open NO_x & SO₂ Emissions Trading
Schemes for land based industry and
shipping in Europe
An environmental friendly and cost-
effective solution.**

Bertil Arvidsson

Swedish Shipowners' Association

Transports conducted by shipping

Modal Split (tkm) in Total Intra-EU Transport

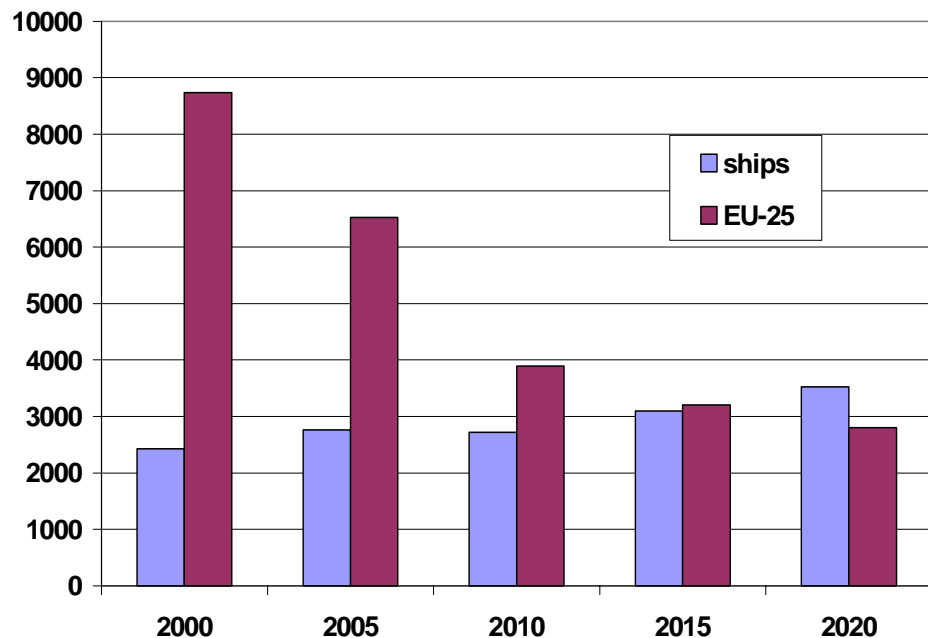


Reference: DG Environment

Model calculation of future emissions.

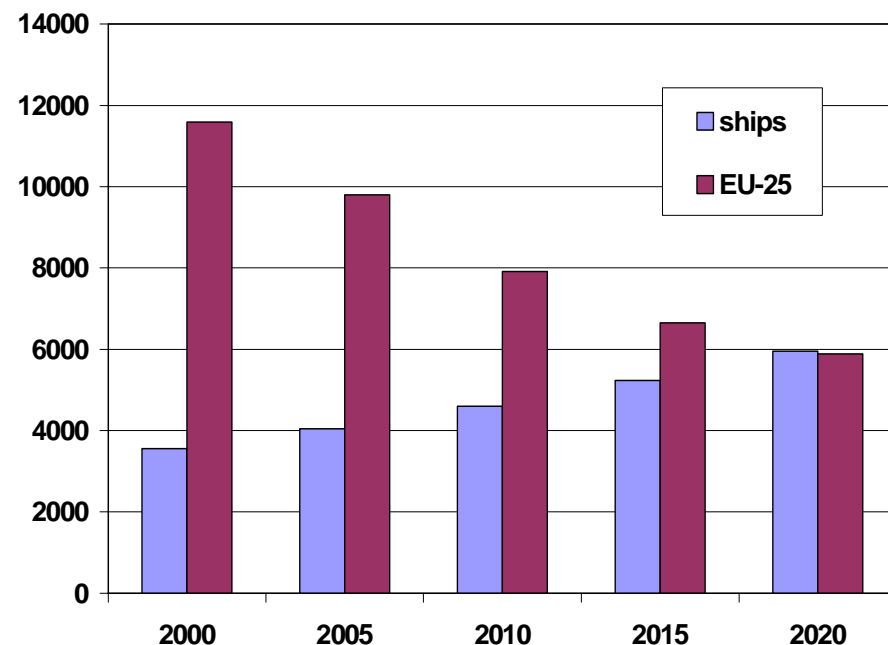
SO₂

ktonnes



NO_x

ktonnes



Assumptions in model (RAINS):

- Tightened regulations and corresponding reductions for land- based sectors
- No incentives and no reductions for waterborne transport

Reference: DG Environment

95 % NO_x reduction is feasible

SCR Converter system for Obbola & Östrand



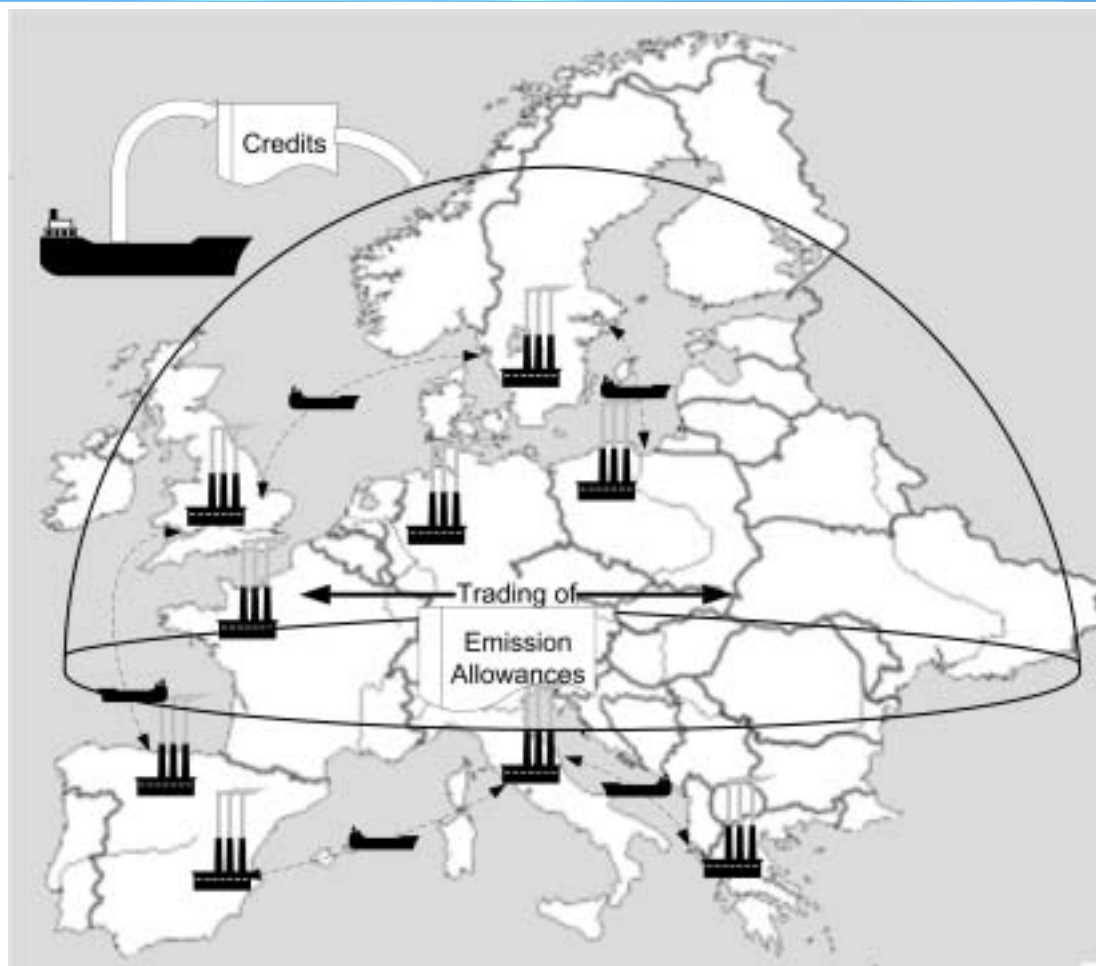
Retrofit installation in 2004

Main engines: 2 x 4.1 MW

Auxiliary engines: 3 x 0.6 MW

NO_x Reduction Certificate: 1.0 g/kWh (≈95% reduction)

The Scheme proposed by SSA



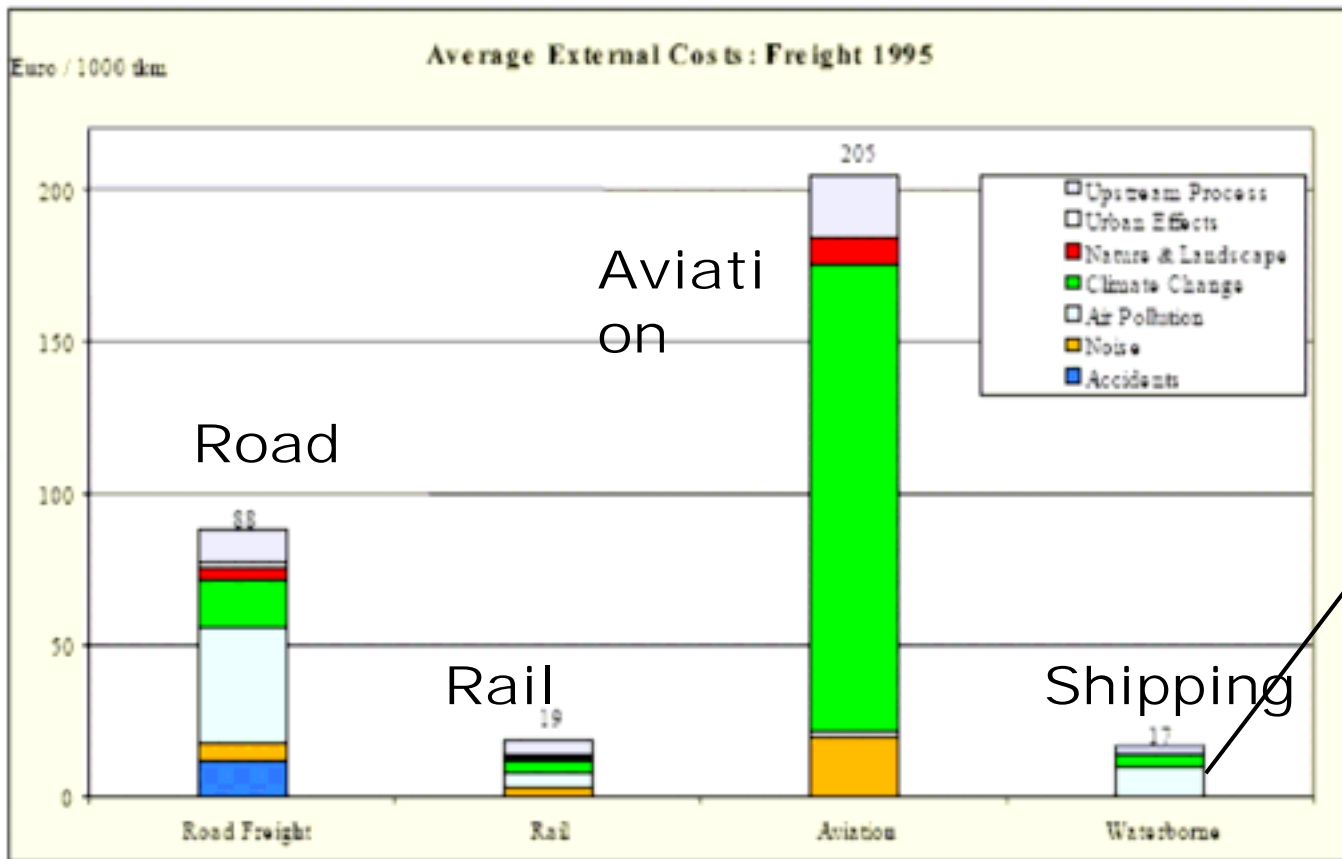
EU-wide Emission Trading Scheme for NO_x & SO₂ including Shipping

- The scope of the proposed scheme is to create :
 - emission reductions to the lowest economic cost for society as a whole
 - financial incentives for the shipping sector to reduce their emissions

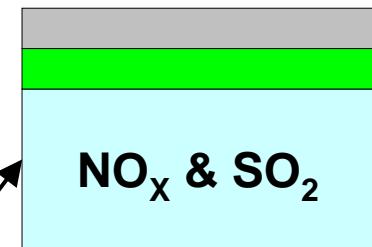
Major benefits and opportunities of the proposed scheme

- Fast emission reductions created
- Huge potential for cost-efficient reductions for:
 - Land-based installations
 - Shipping (when included as a provider of credits)
- Great opportunities for enhanced competitiveness:
 - Companies operating energy or industry installations
 - Ship owners with ships plying the European waters
 - EU as whole

Waterborne has the lowest external costs of the freight transport modes



NO_x & SO₂ from shipping can be reduced significantly!



Reference: DG Energy & Transport, White paper 2001

Summary

An EU Emission trading scheme;

- No increased cost-burden of waterborne transports
- Comply with International maritime law (UNCLOS)
- Reduce emissions in the most cost-effective way
 - Documentation; www.sweship.se; “Mind the gap”