Methanol as Marine Fuel
Strategic View

2015 European Methanol Policy Forum
Brussels 13 - 14 October

Per Stefenson, Stena Teknik

The Challenge - SECA Sulphur Emission Control Area

Future SECA areas

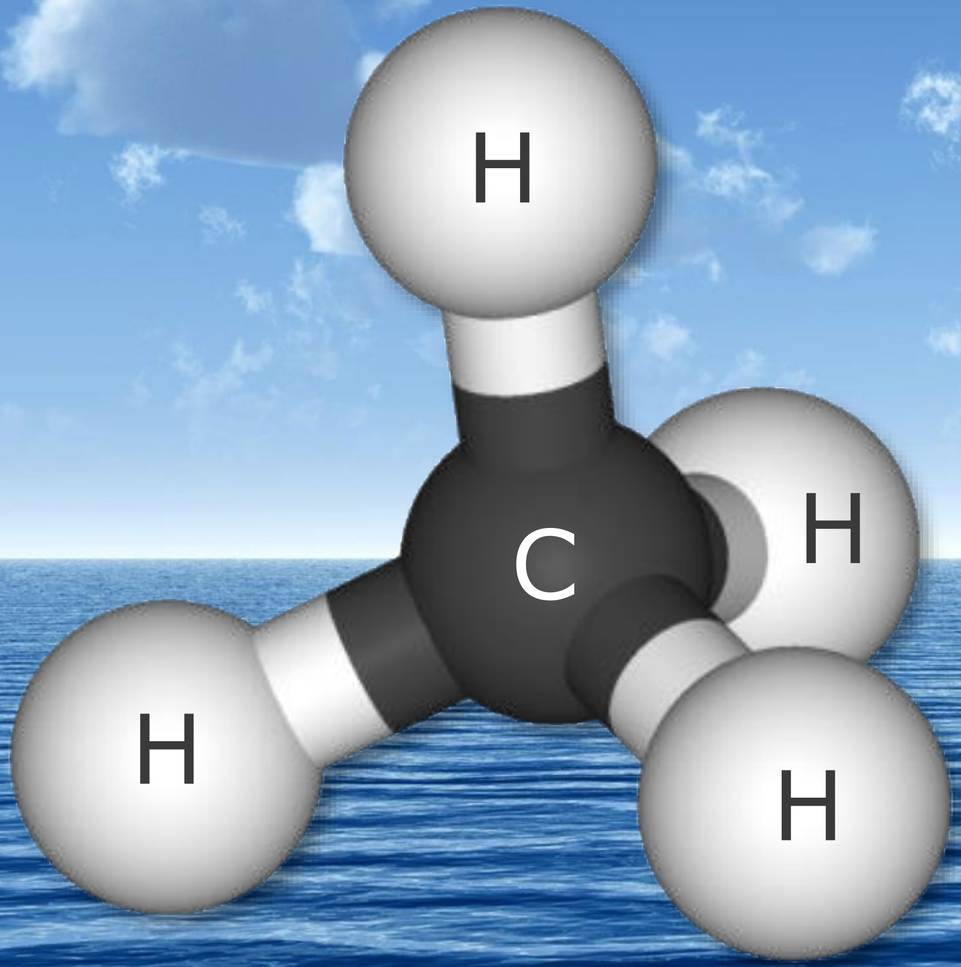
Why methanol?

- Large commodity
- Feedstock is natural gas (Liquefied Natural Gas)
- Green methanol development (Bio- and CO2 captured methanol) leading towards zero vision
- Easy to handle (liquid)
- Economically feasible

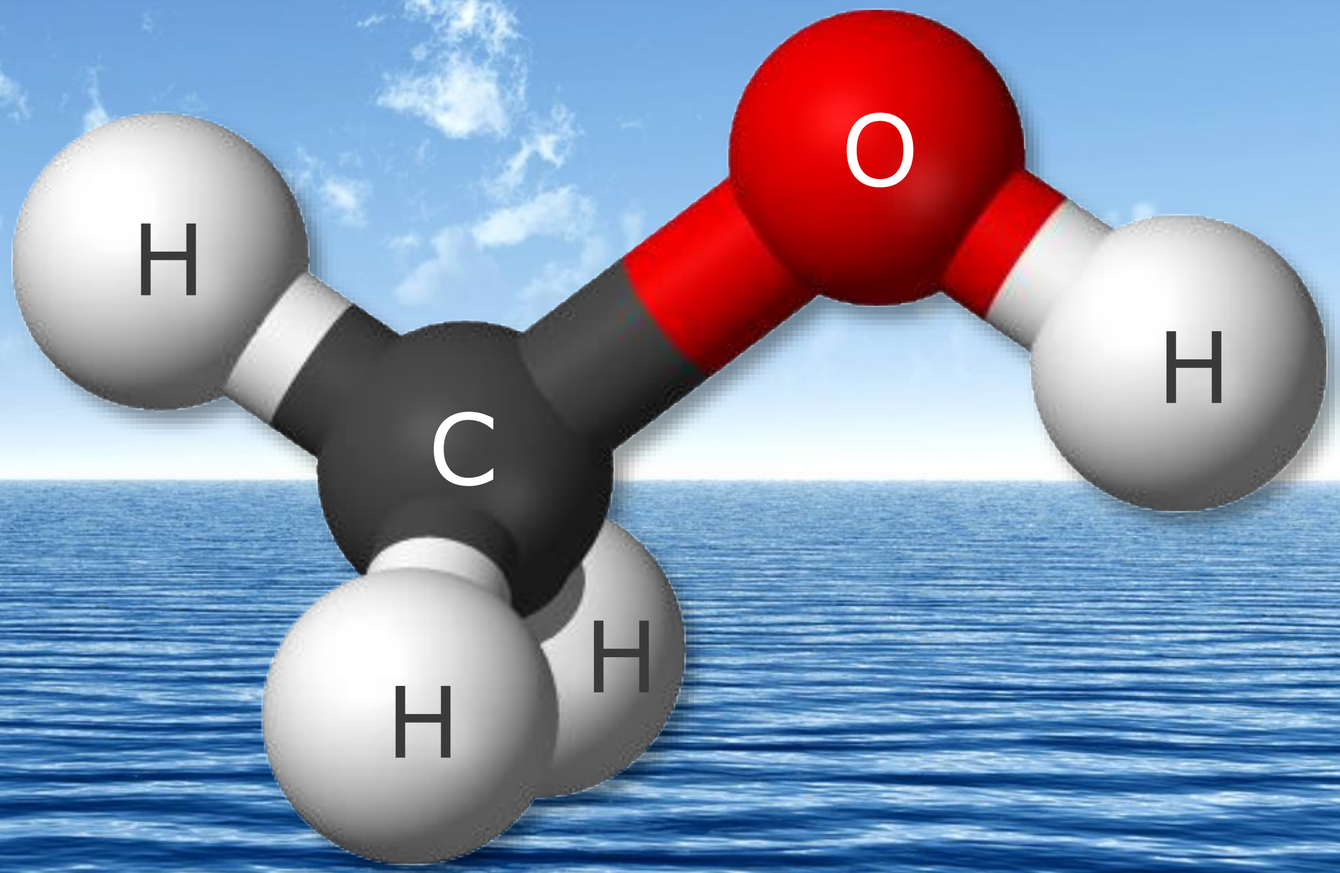
Challenges

- Low flashpoint
- Toxic
- Low viscosity
- Corrosive
- Low energy content (half compared with oil)
- Fuel oil price 50% lower than last year

Methanol is liquefied natural gas

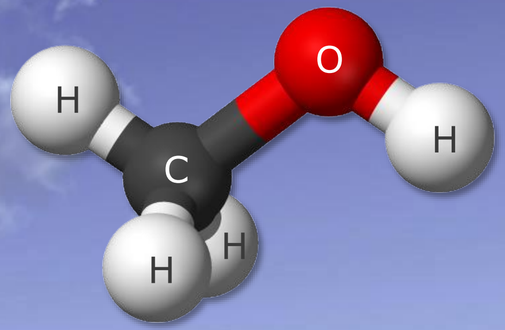


Methane CH_4



Methanol CH_3OH

European Commission



Methanol

The marine fuel of the future

Stena

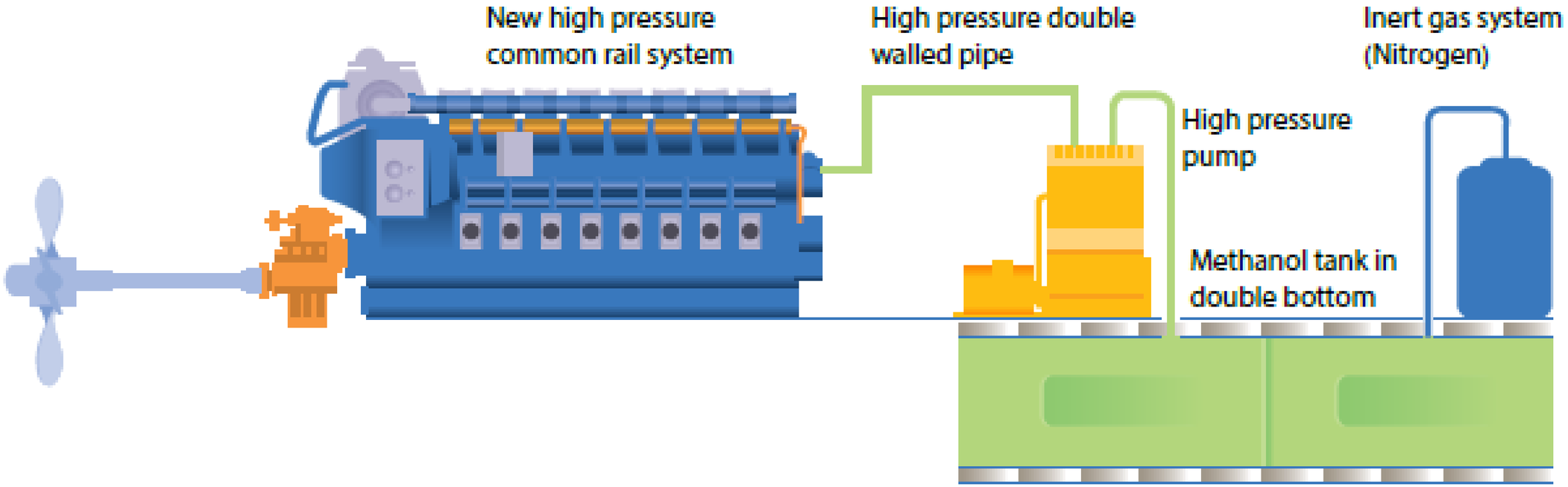
WÄRTSILÄ

STENA OIL

PORT OF GOTHENBURG

PORT OF KIEL

Stena Germanica conversion of the main propulsion machinery, 4 x Wärtsilä 8ZAL40S Totally 24.000 kW at Remontowa shipyard, Gdansk, March 2015

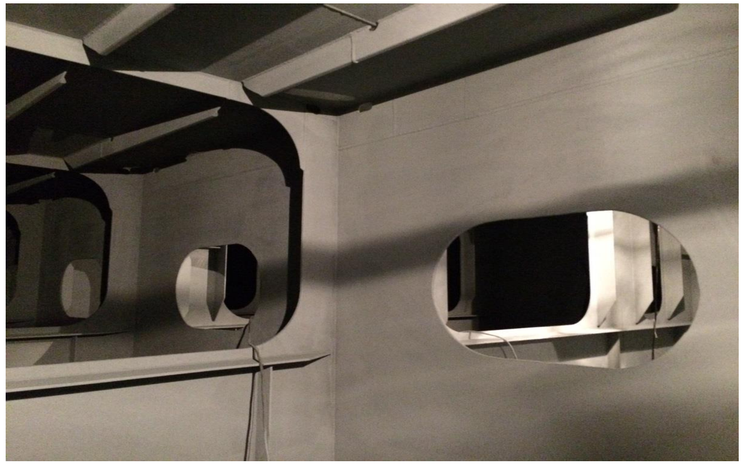

New high pressure
common rail system
High pressure double
walled pipe
Inert gas system
(Nitrogen)
High pressure
pump
Methanol tank in
double bottom

Engine conversion to dual fuel

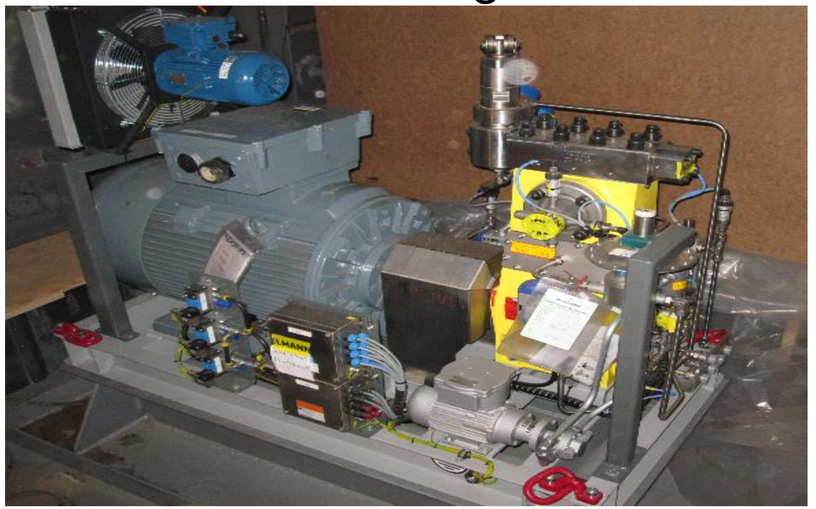
High pressure pipes

New engine control system for all four engines

13 km new cables



Methanol storage tank painted with zinc silicate

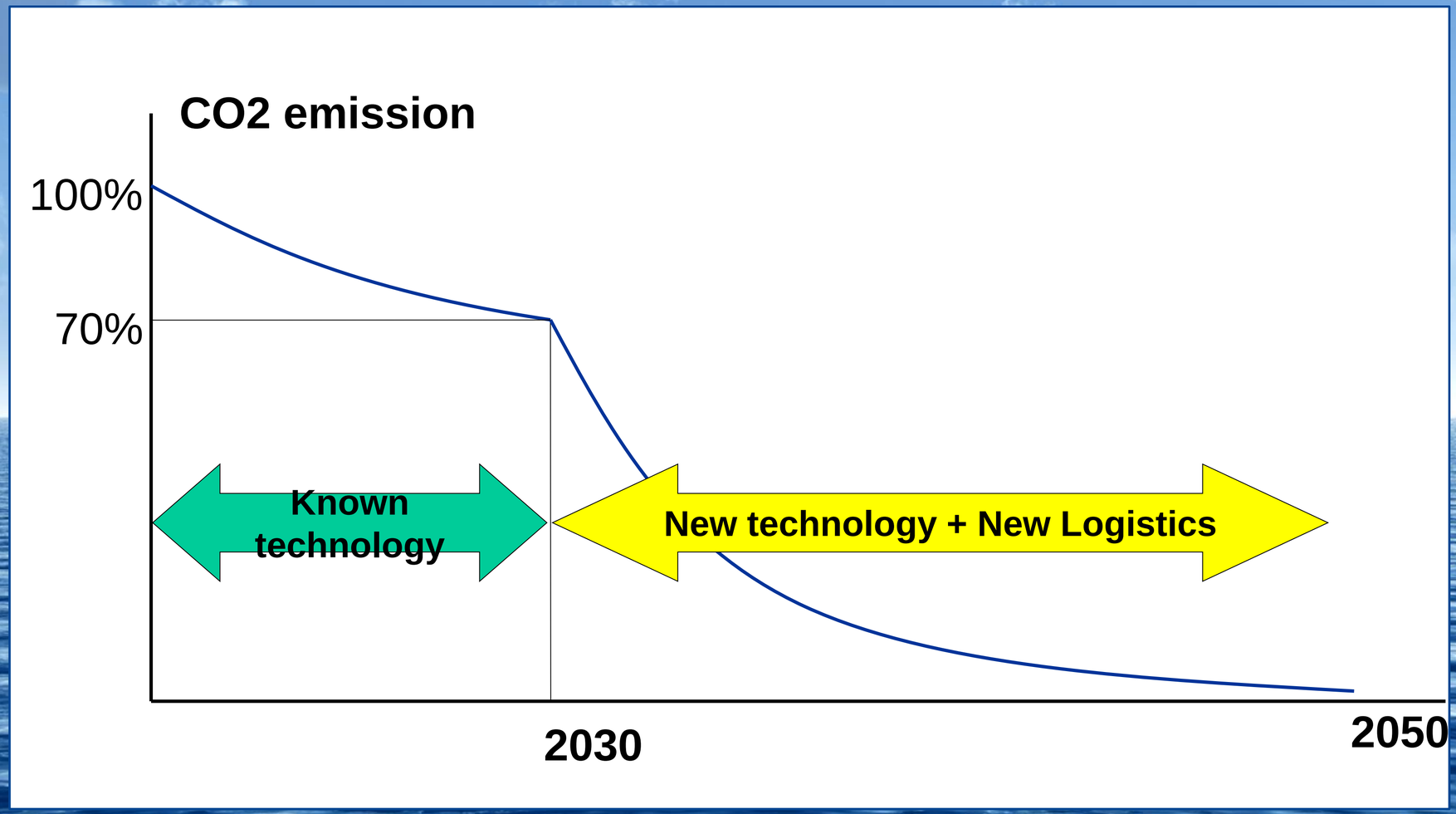


High pressure pumps

Engine before and after conversion


SÜPERGREEN
Sustainable Shipping

Methanol leads towards the zero vision



Green Methanol

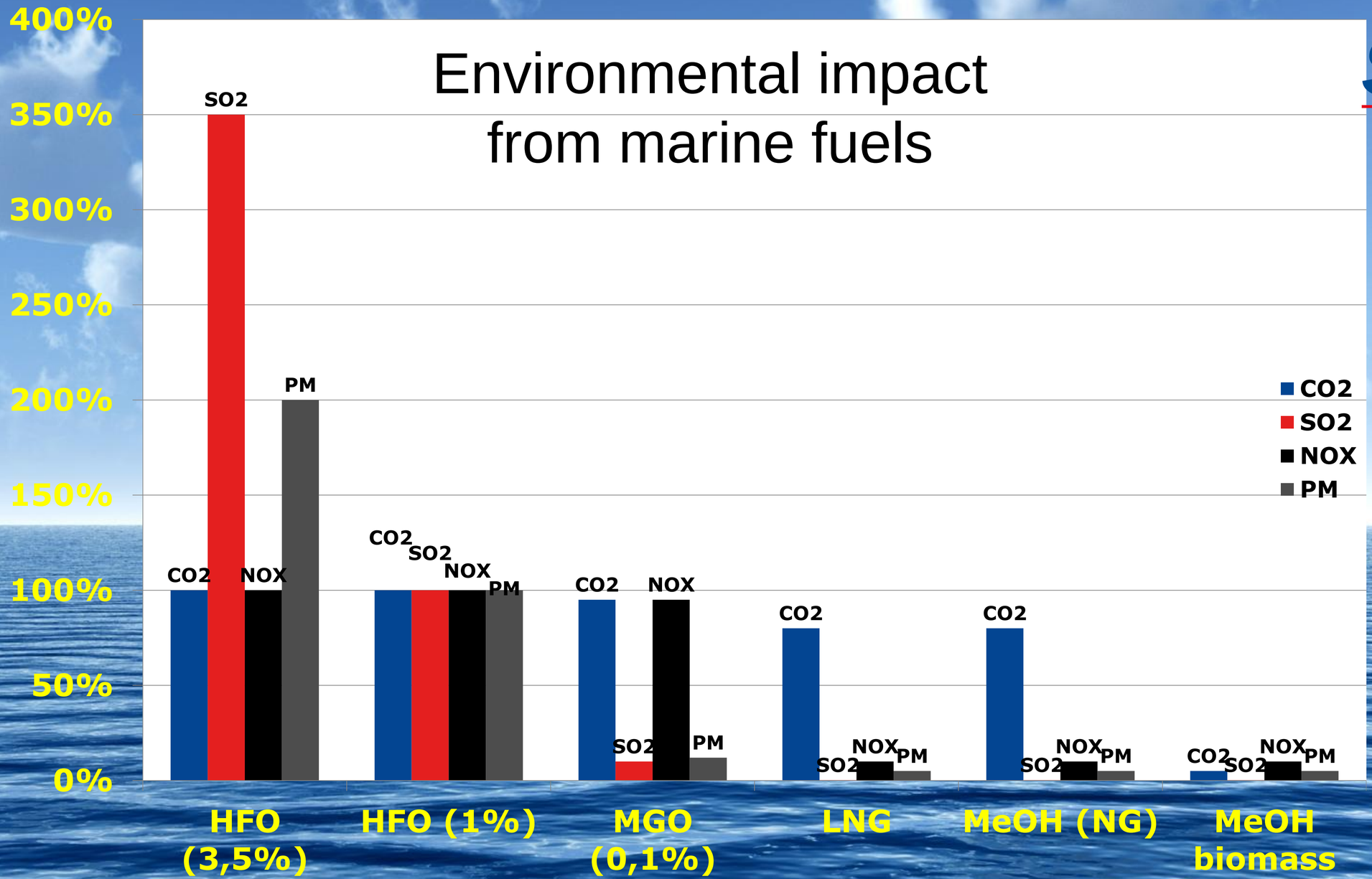
Papermill, Piteå, SWE

Svartsengi, ISL

Enerchem, Edmonton, CAN

BioMCN, Delfzijl, NLD

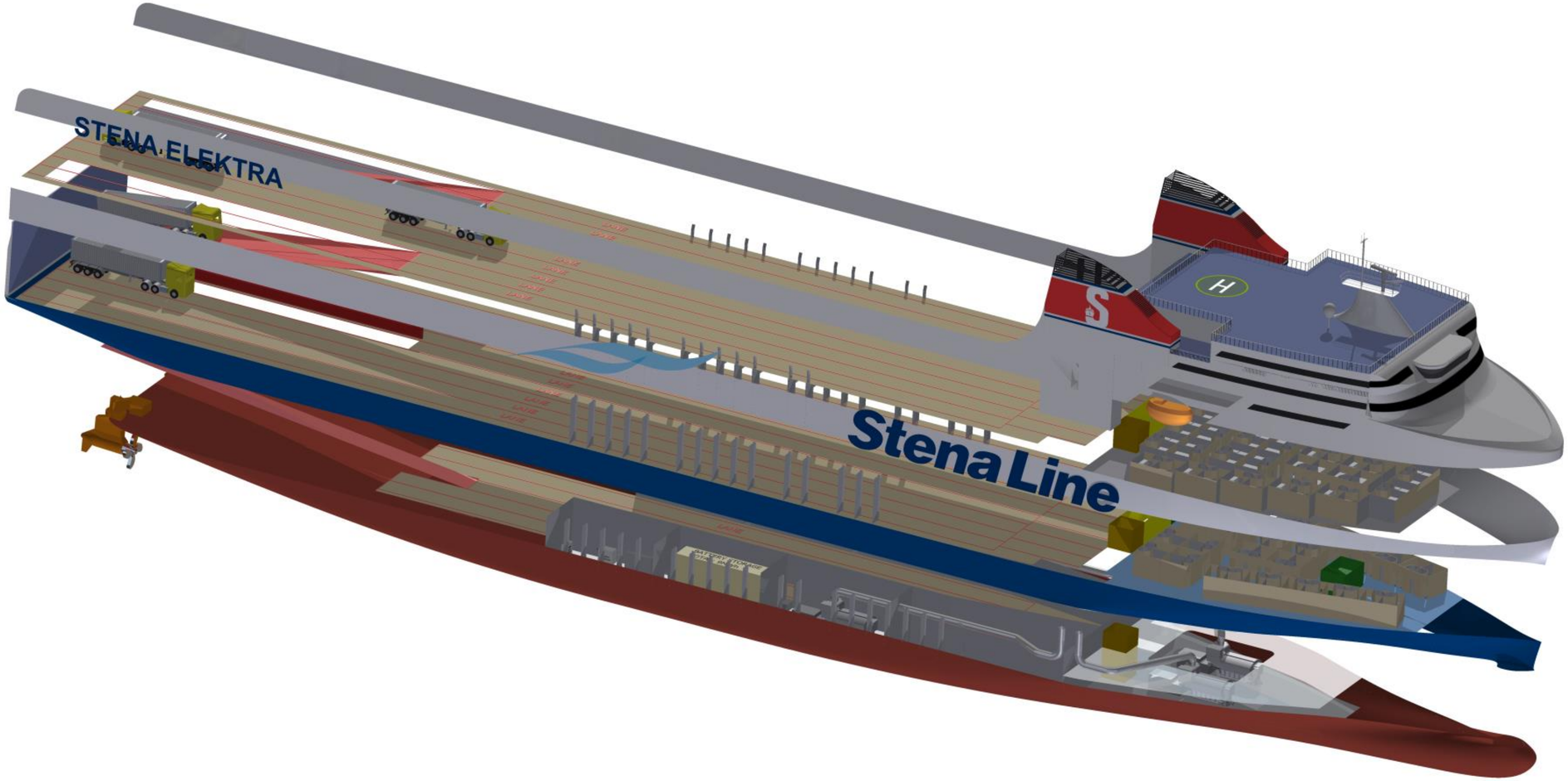
Environmental impact from marine fuels

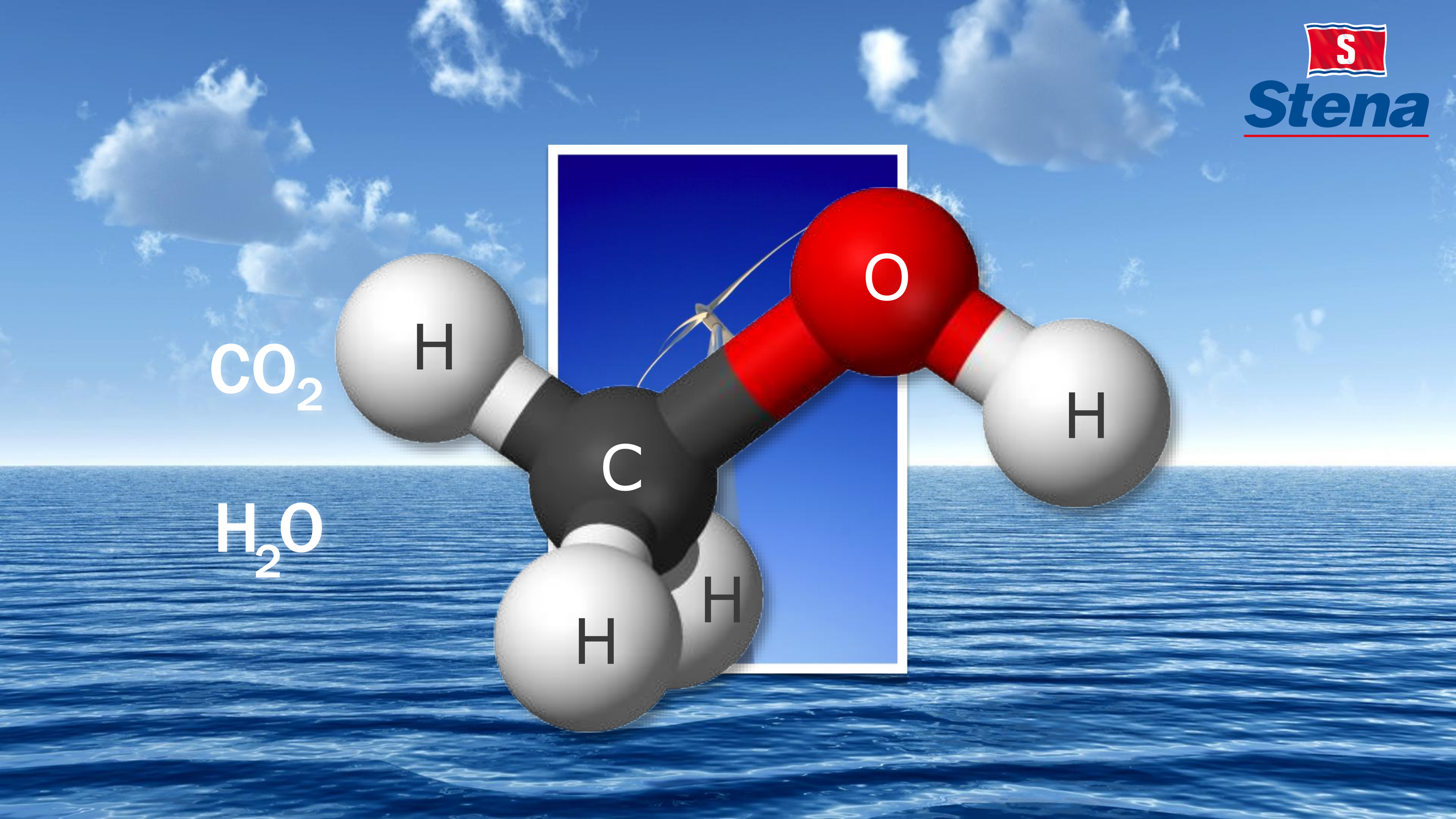


Zero Vision

Methanol/Electric Hybrid

Towards the Zero Vision


STENA ELEKTRA
Stena Line


Stena
CO_2
H_2O
H
O
H
C
H
H