

Methanol as Marine Fuel Strategic View

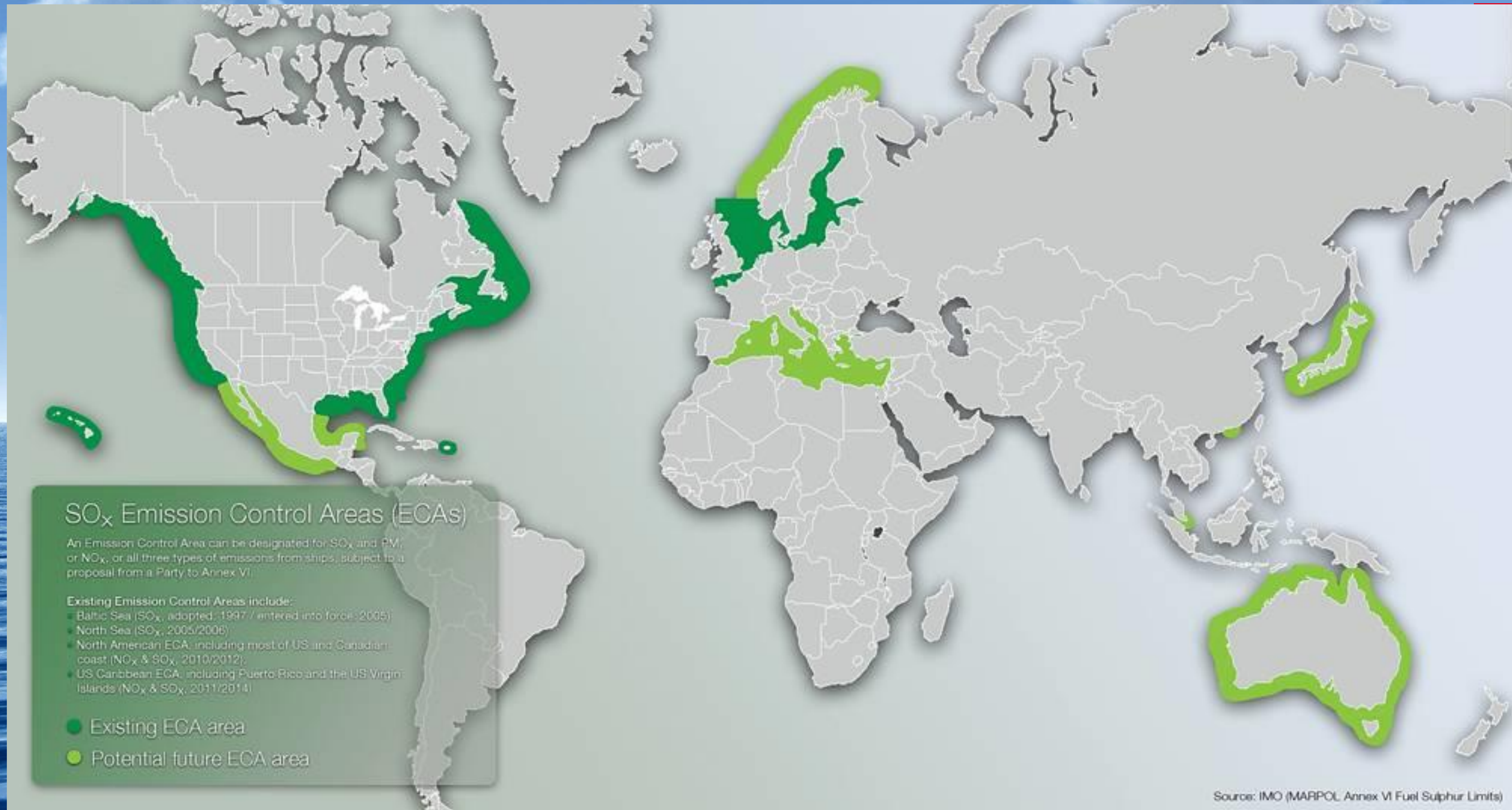
2015 European Methanol Policy Forum
Brussels 13 - 14 October

Per Stefenson, Stena Teknik

The Challenge - SECA Sulphur Emission Control Area



Future SECA areas



Why methanol?



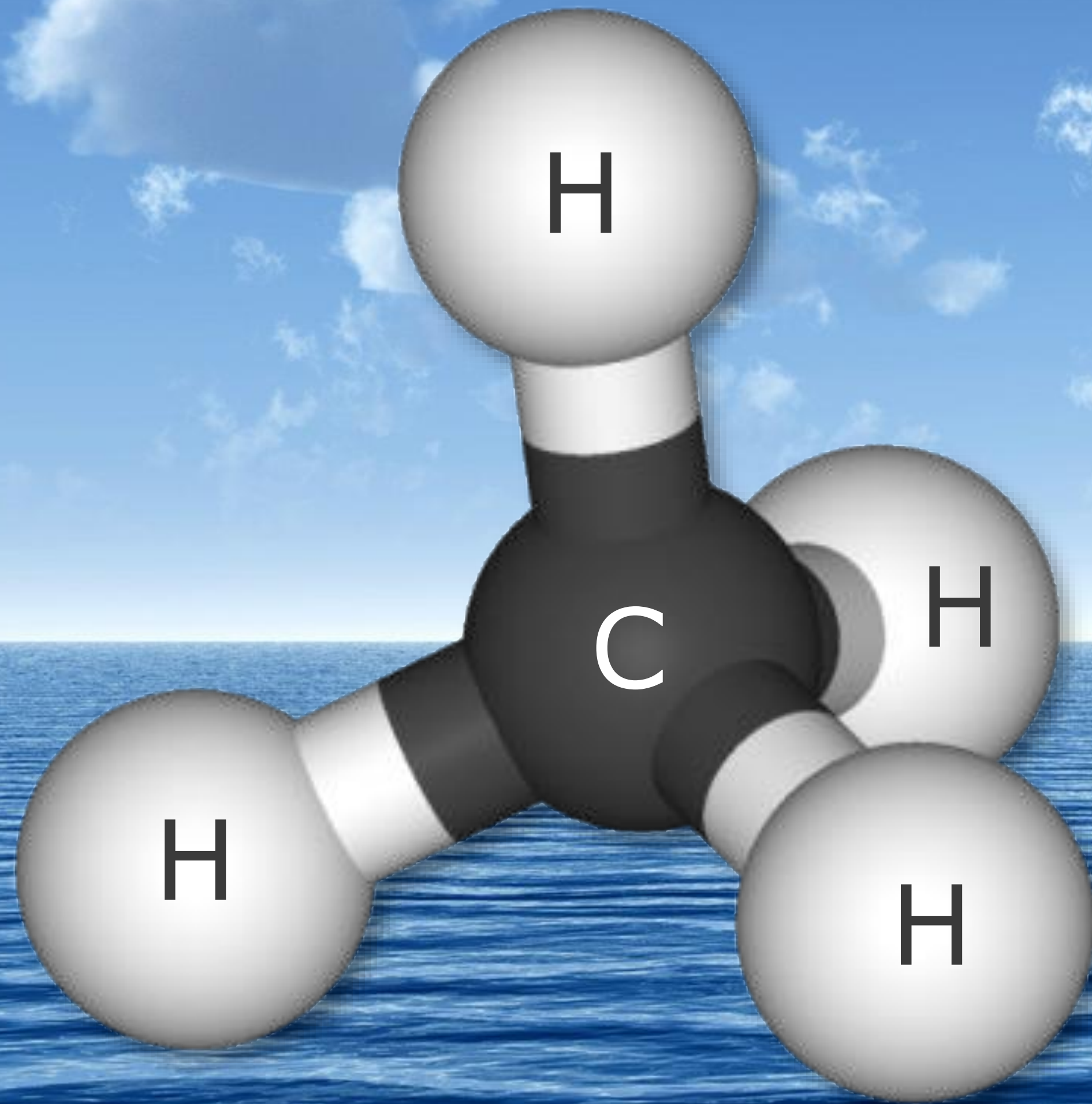
- Large commodity
- Feedstock is natural gas (Liquefied Natural Gas)
- Green methanol development (Bio- and CO2 captured methanol) leading towards zero vision
- Easy to handle (liquid)
- Economically feasible

Challenges

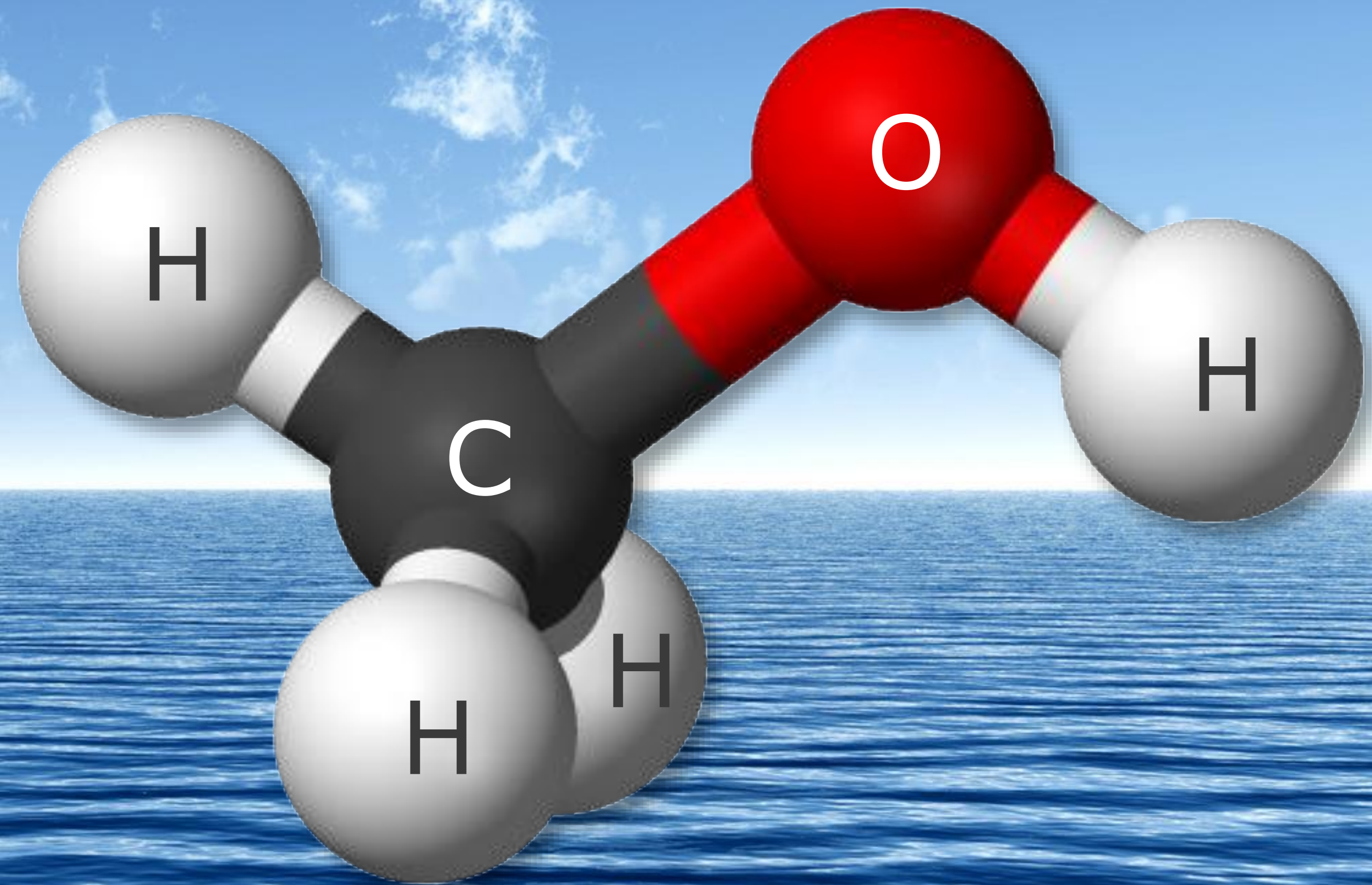


- Low flashpoint
- Toxic
- Low viscosity
- Corrosive
- Low energy content (half compared with oil)
- Fuel oil price 50% lower than last year

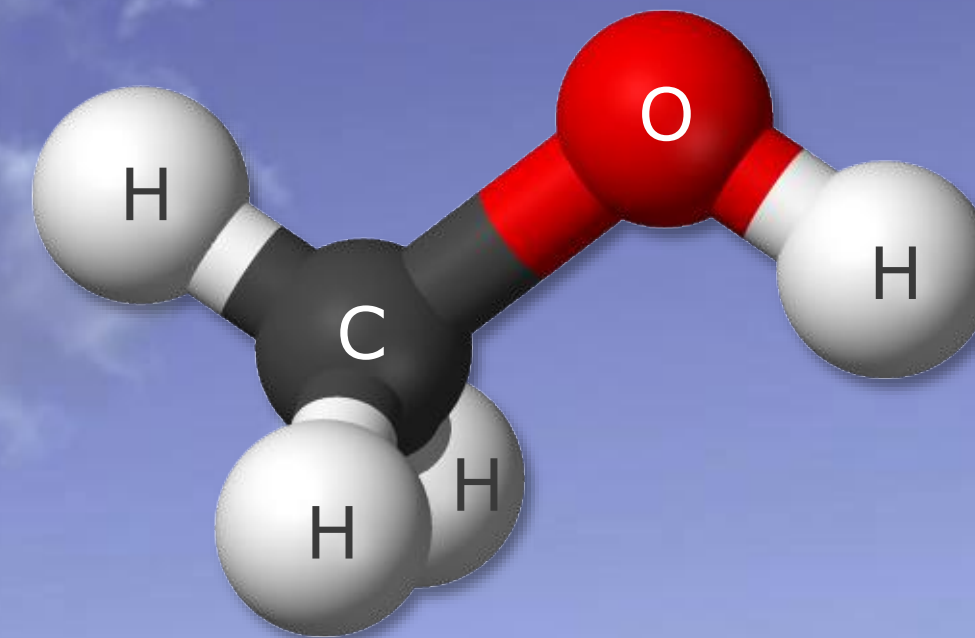
Methanol is liquefied natural gas



Methane CH_4



Methanol CH_3OH



Methanol

The marine fuel of the future

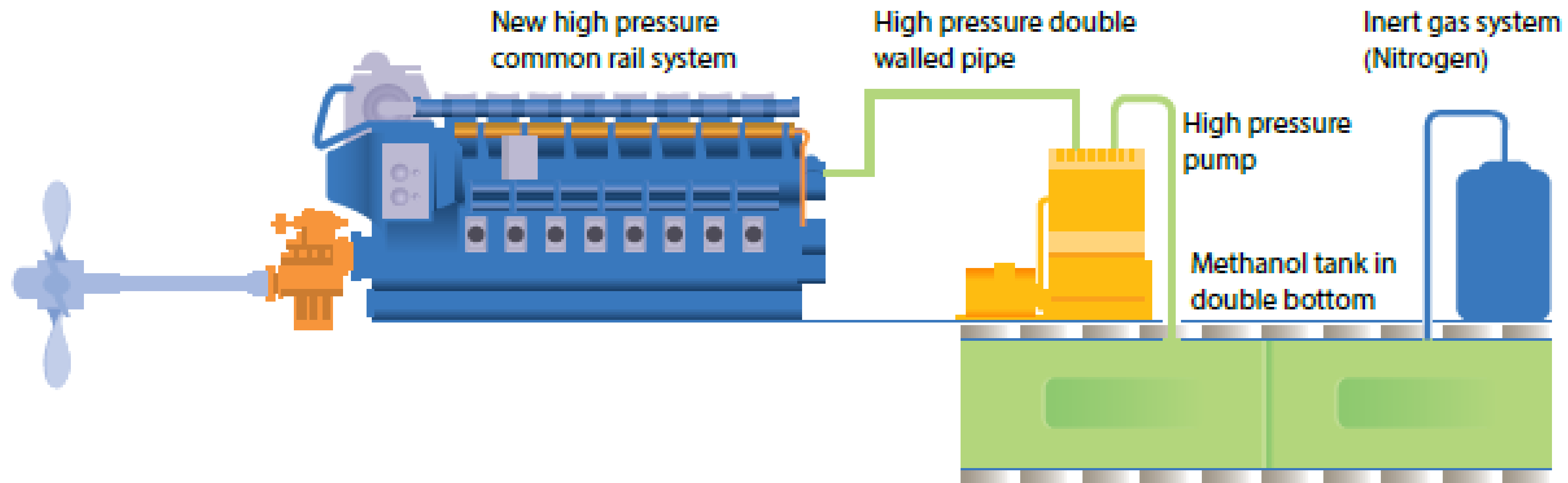


Stena Germanica conversion of the main propulsion machinery, 4 x Wärtsilä 8ZAL40S Totally 24.000 kW at Remontowa shipyard, Gdansk, March 2015



Stena







Engine conversion to dual fuel



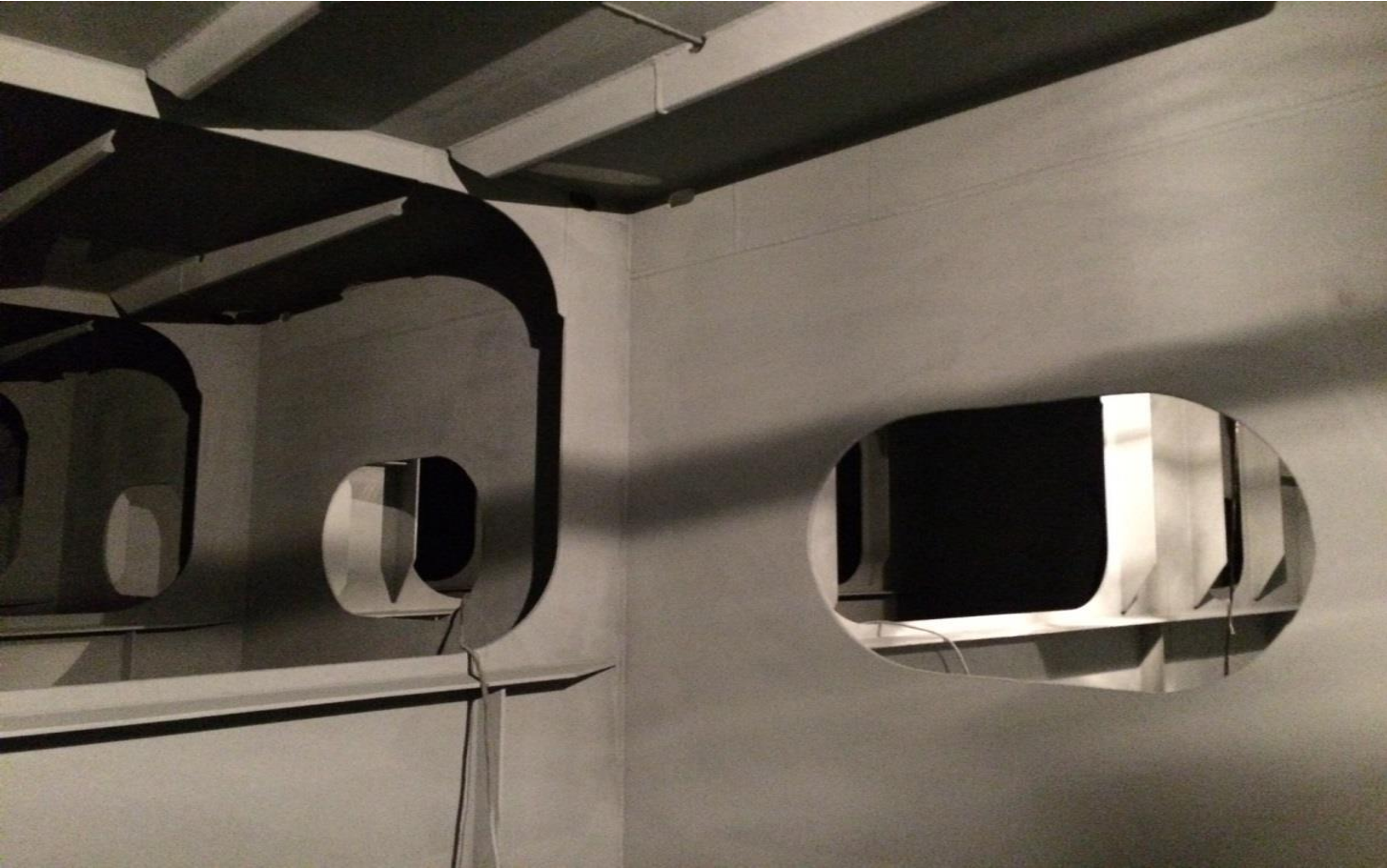
High pressure pipes



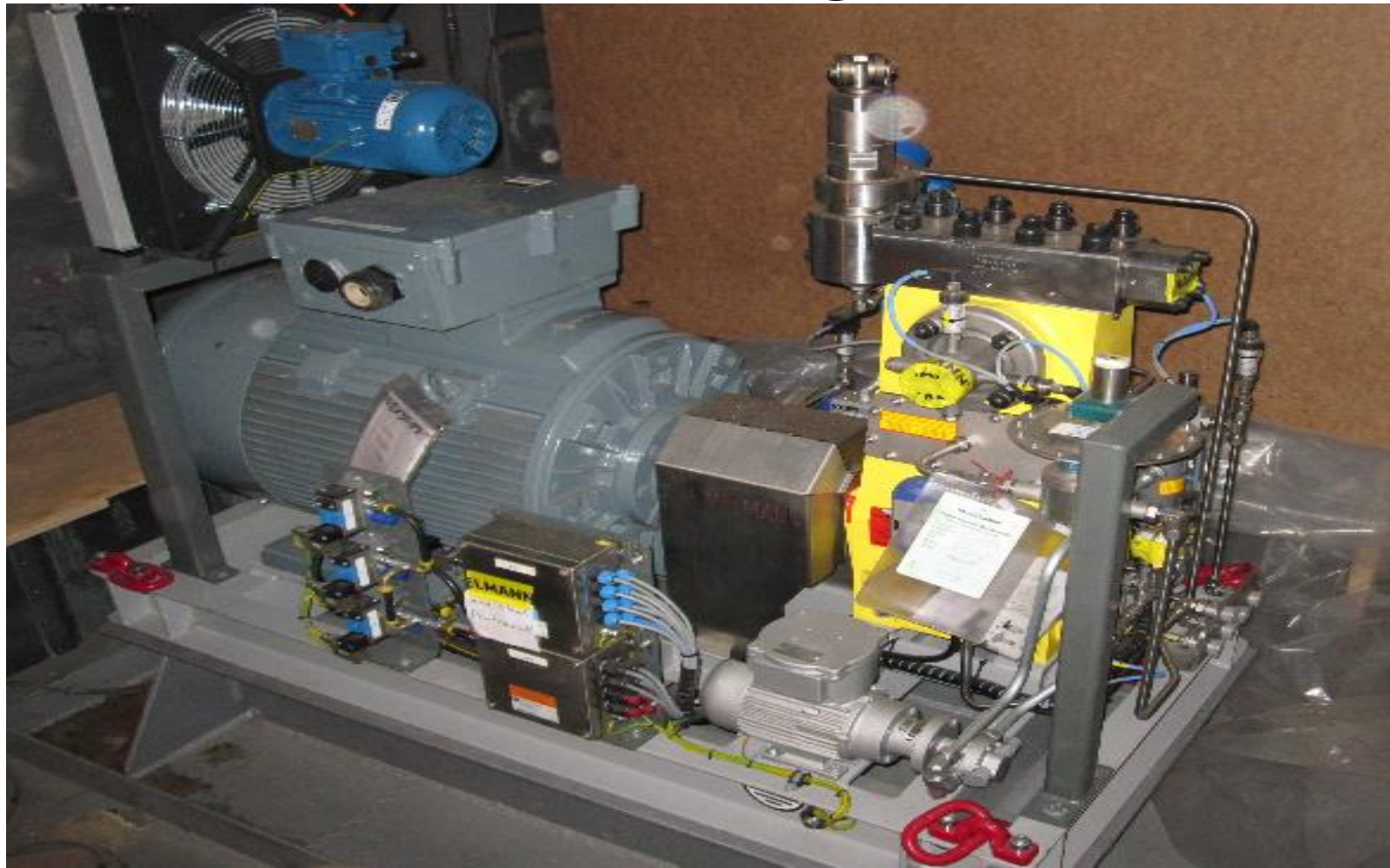
New engine control system for all four engines



13 km new cables



Methanol storage tank painted with zinc silicate



High pressure pumps

Engine before and after conversion

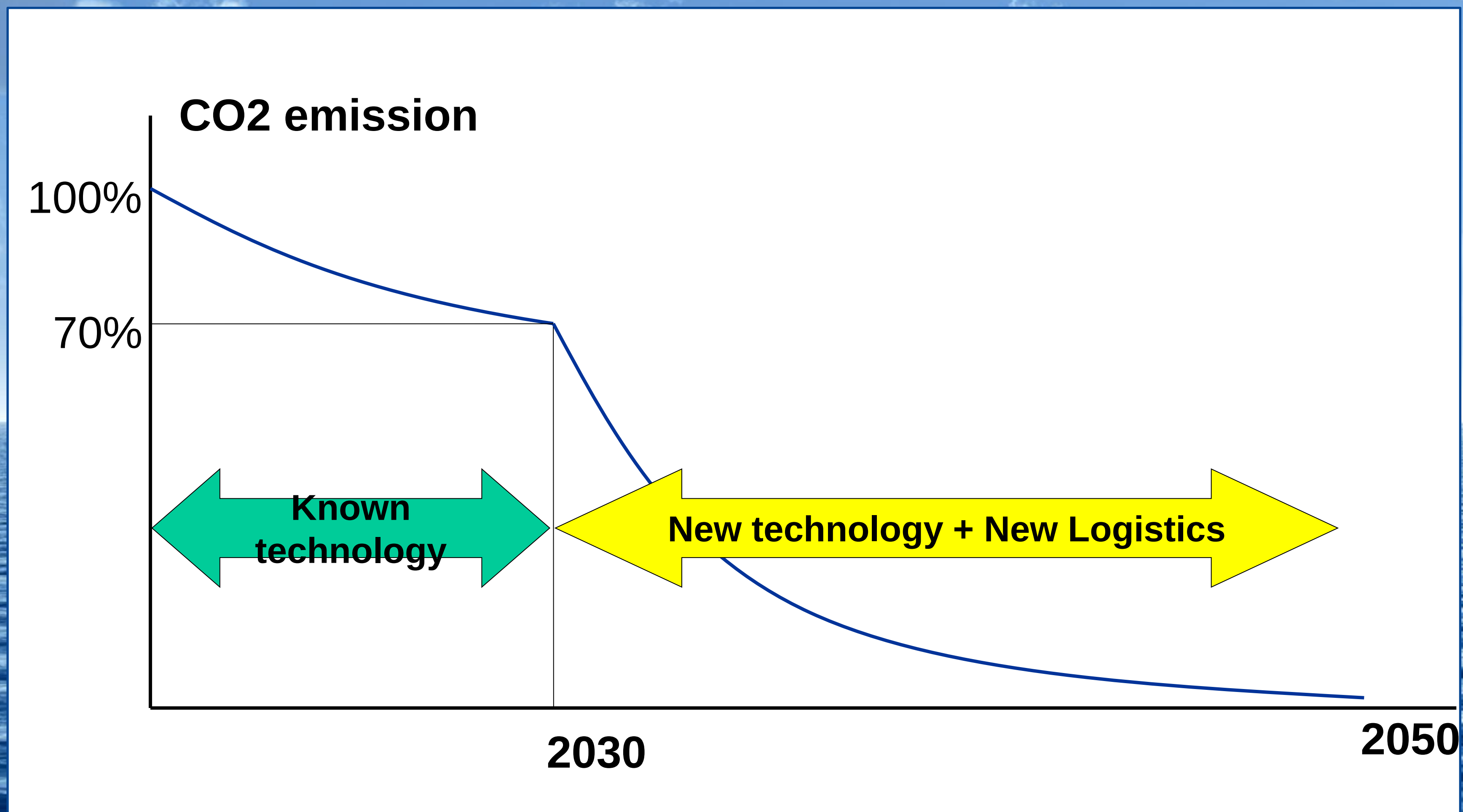




SUPERGREEN
Sustainable Shipping



Methanol leads towards the zero vision



Green Methanol



Papermill, Piteå, SWE



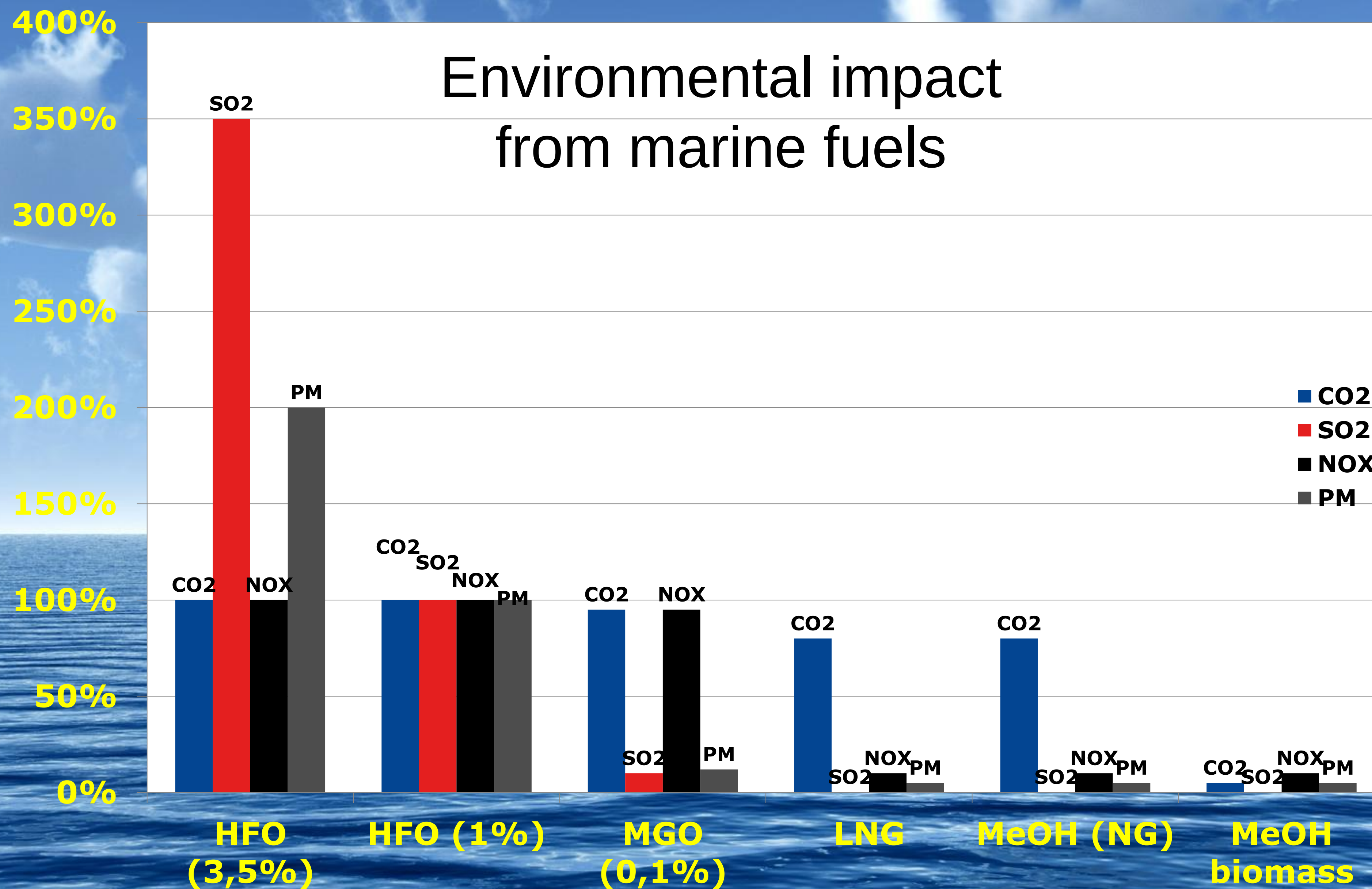
Svartsengi, ISL



Enerchem, Edmonton,
CAN



BioMCN, Delfzijl, NLD

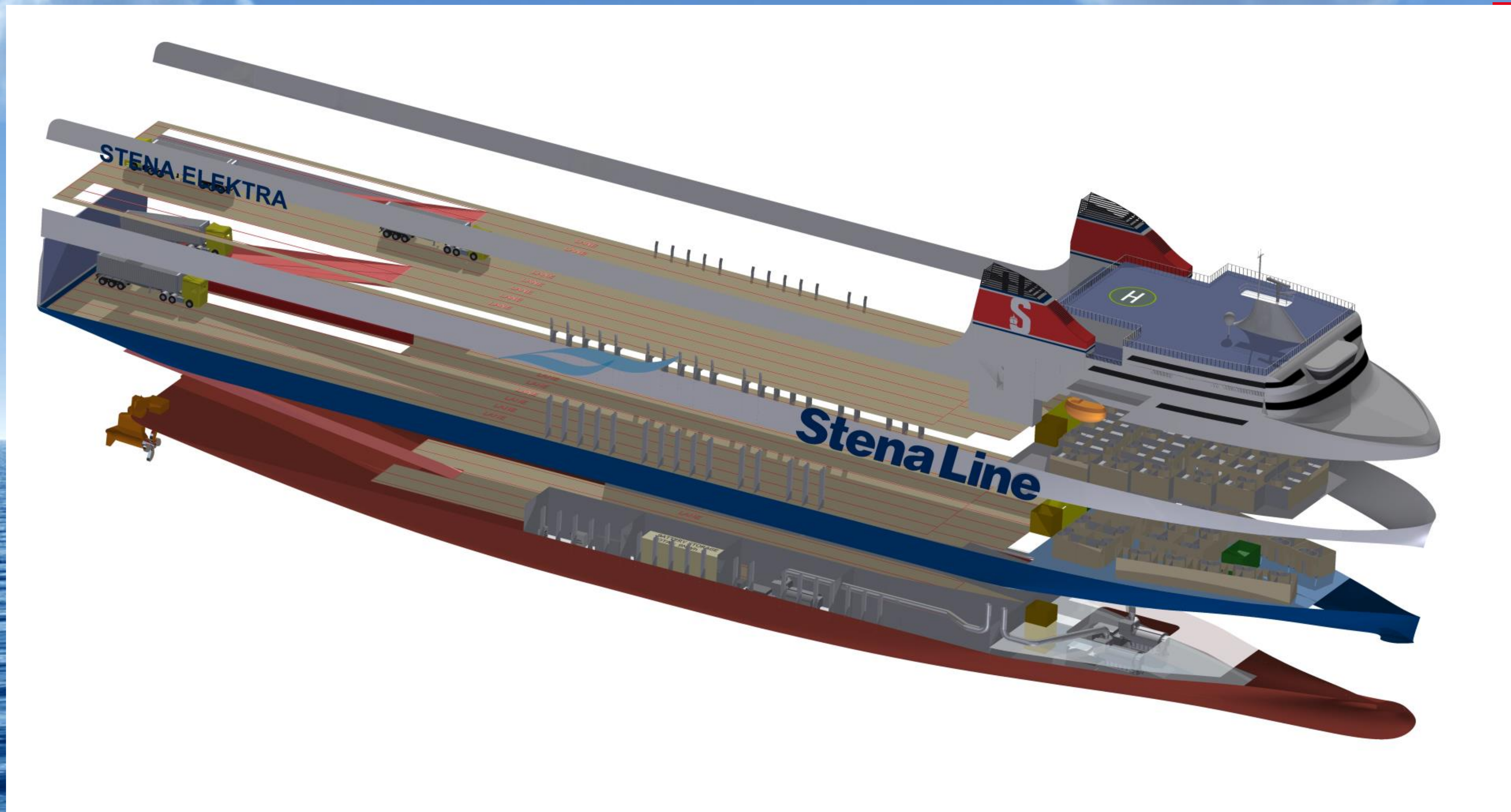


Zero Vision

Methanol/Electric Hybrid



Towards the Zero Vision



CO_2

H_2O

