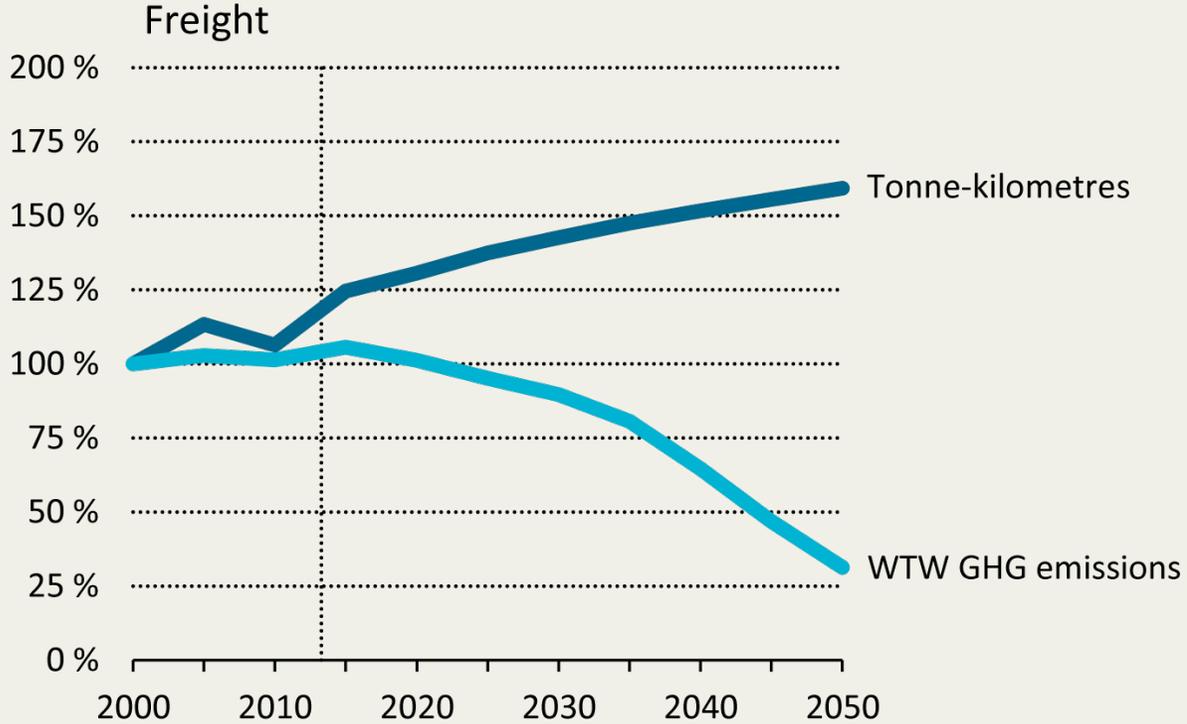
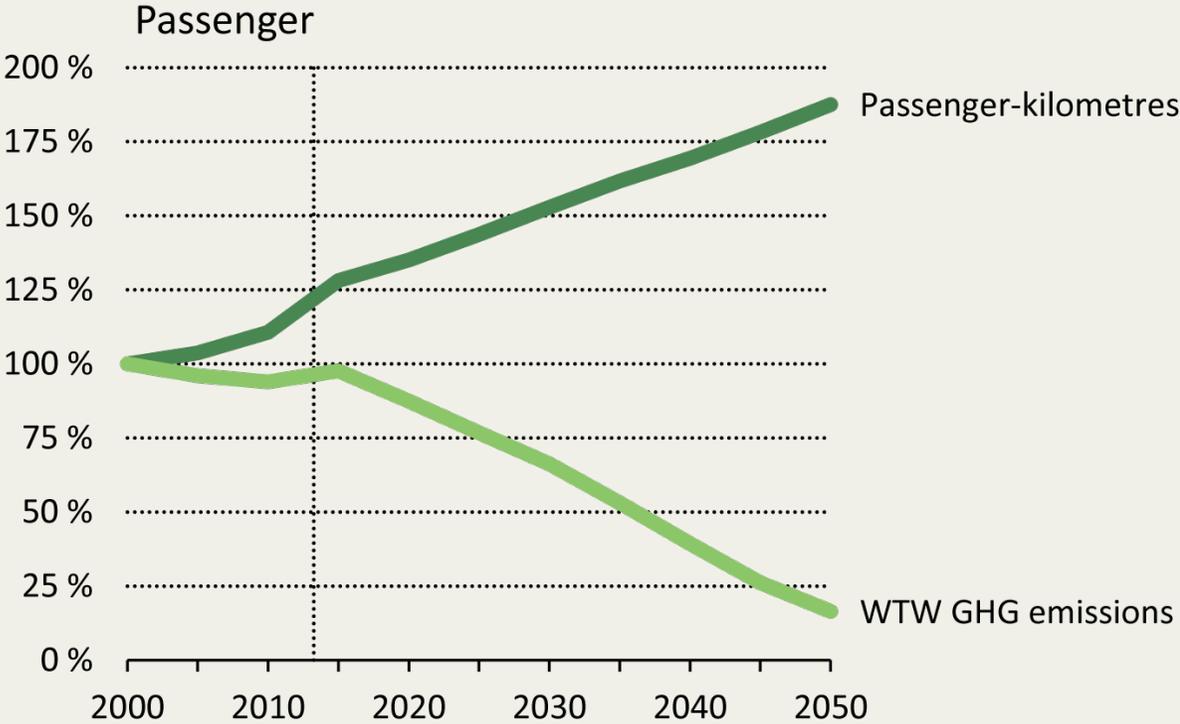
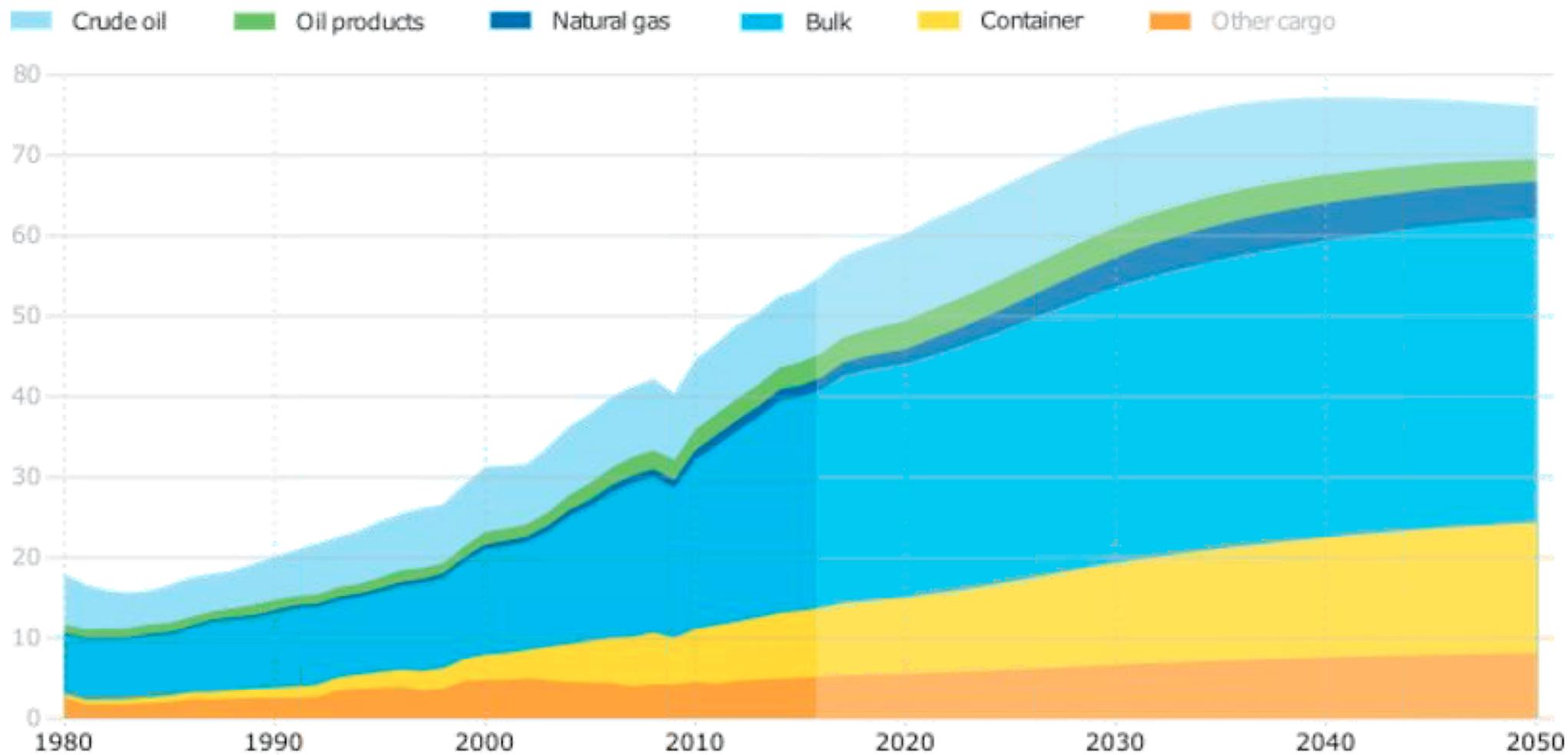


Electrifying maritime transport – can it make a difference?

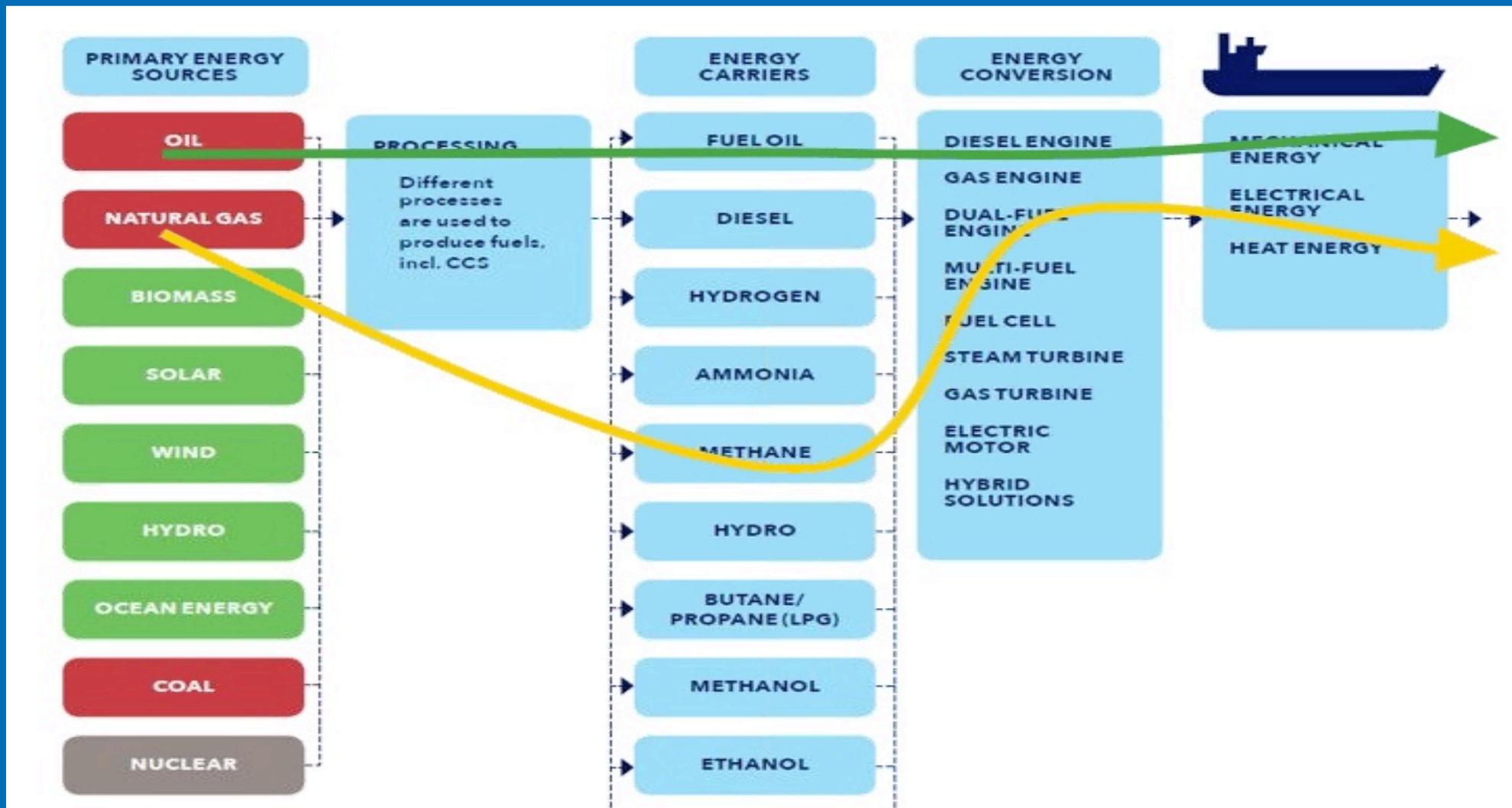
Svend Søyland,
Senior Adviser
Nordic Energy Research

Decoupling transport activity from emissions





Sources: forecast - DNV GL; historical data - Clarkson Research, 2017



Keeping all transportation fuels on the table!

- Energy Efficiency - the least expensive!
- Sustainable fuels from biomass
- Electrofuels from renewables
- Hydrogen/fuel cells
- Electrification

Public Procurement of electric/hybrid ferries

- Requirement for zero emission / climate neutral fuel
- Identify suitable voyages
- Energy needs, speed requirement, size
- Can the grid deliver charging ?



Ampere – First electric ferry (2015)



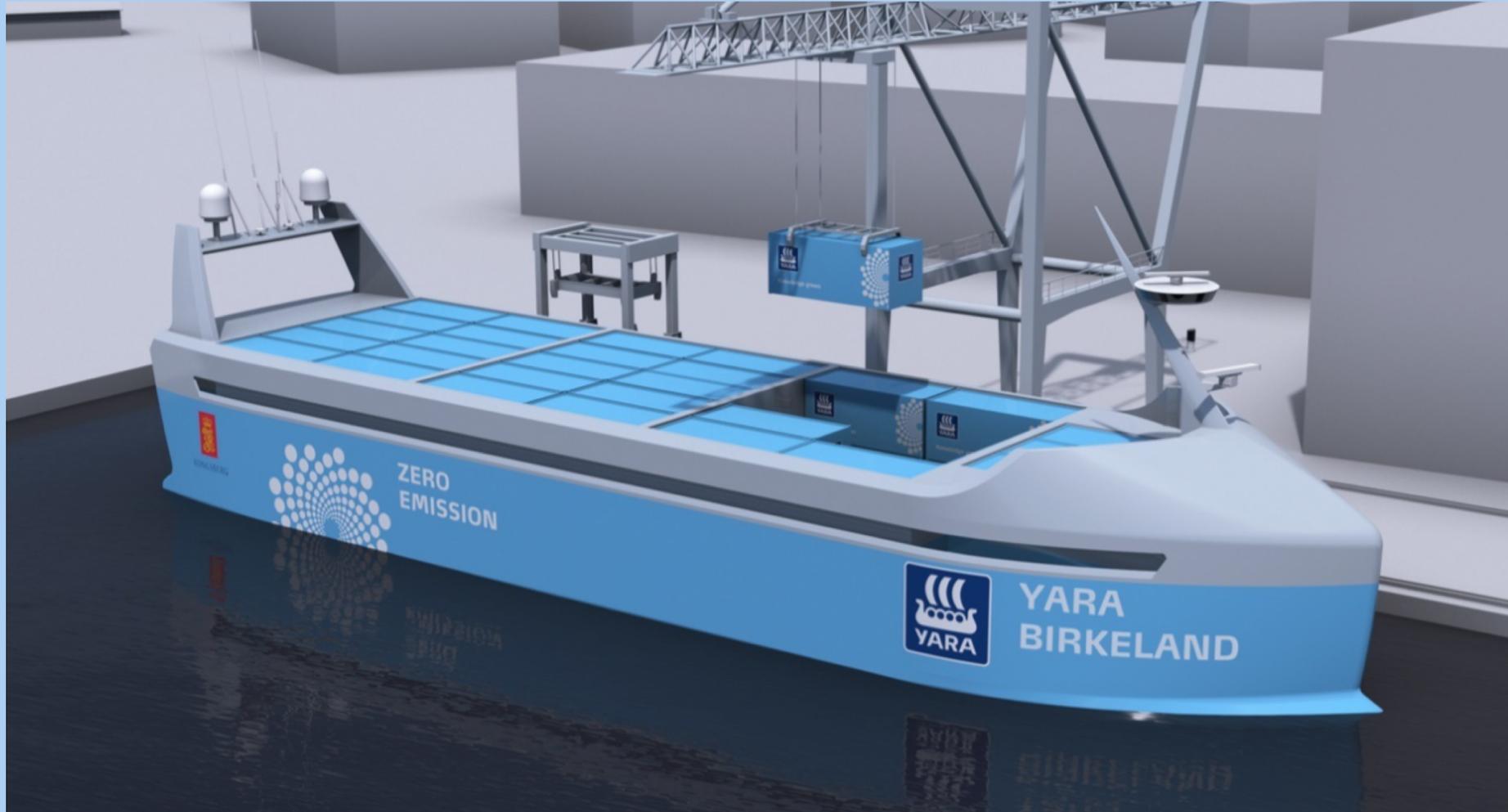
50 more to come!



Vision Future of the Fjords

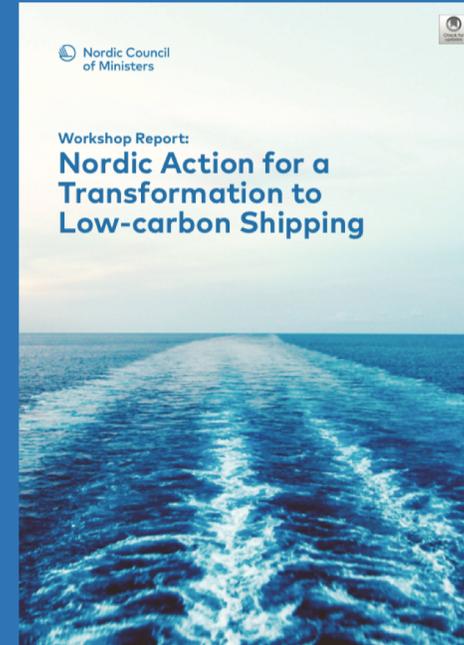
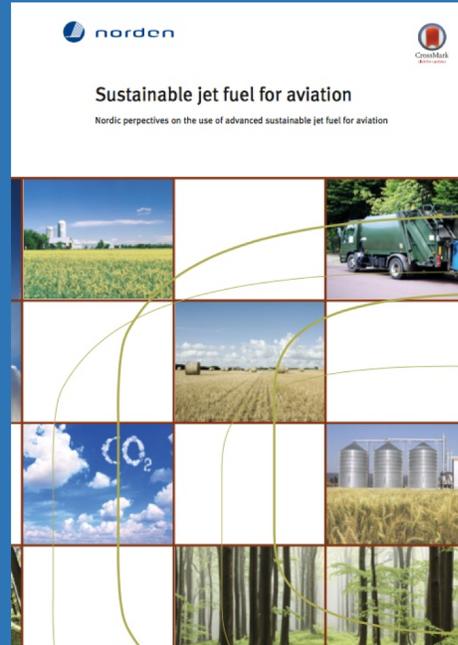


2019: Maritime Autonomy



NER and Maritime transportation

- “Energy and Transport programme” 2010-2014 -Electrofuels – methanol
- “Reducing maritime emissions “ Nordic Marina (Icelandic NCM presidency 2014)
- “Nordic Action for transformation to low-carbon shipping” NCM/NOAK 2017



New IMO – strategy April 2018

