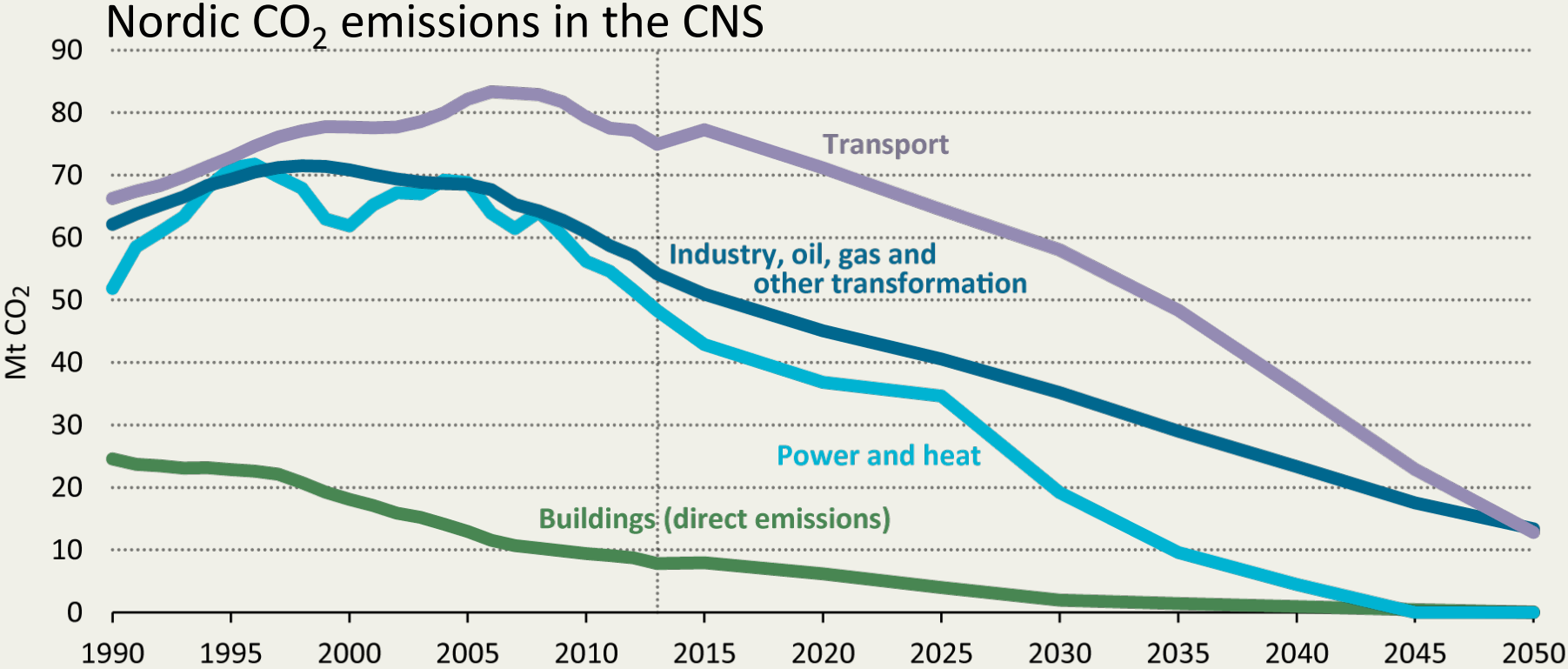


Nordic Aviation - a frontrunner?

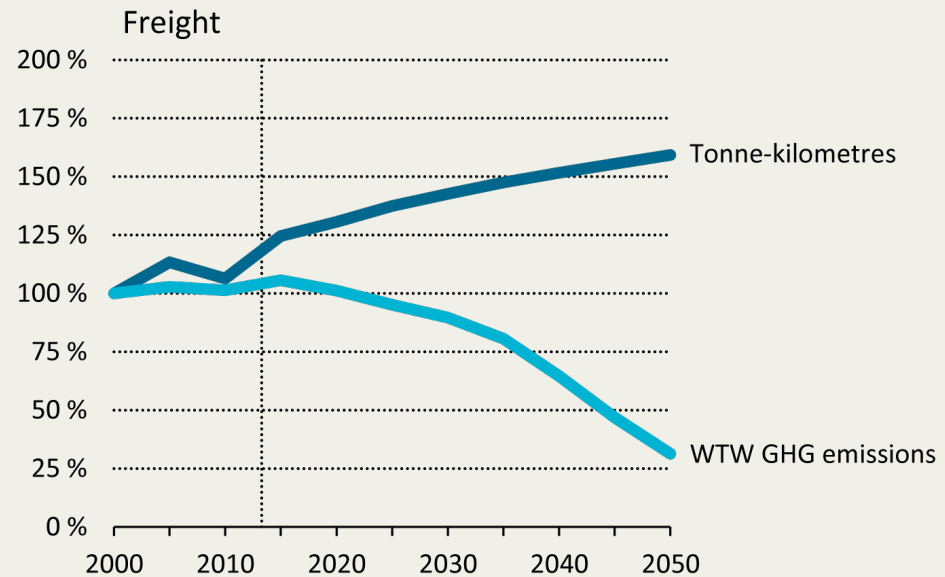
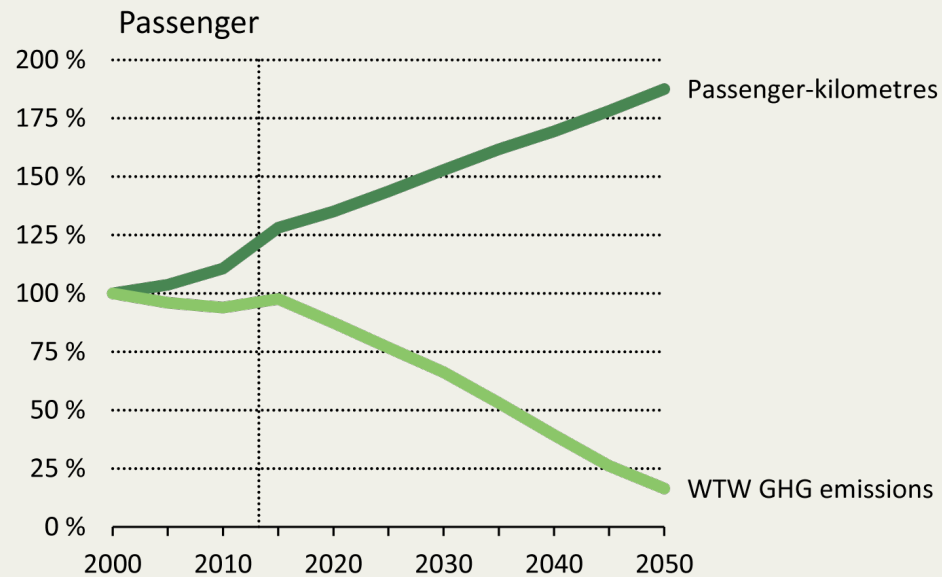
Svend Søyland,
Senior Adviser
Nordic Energy Research



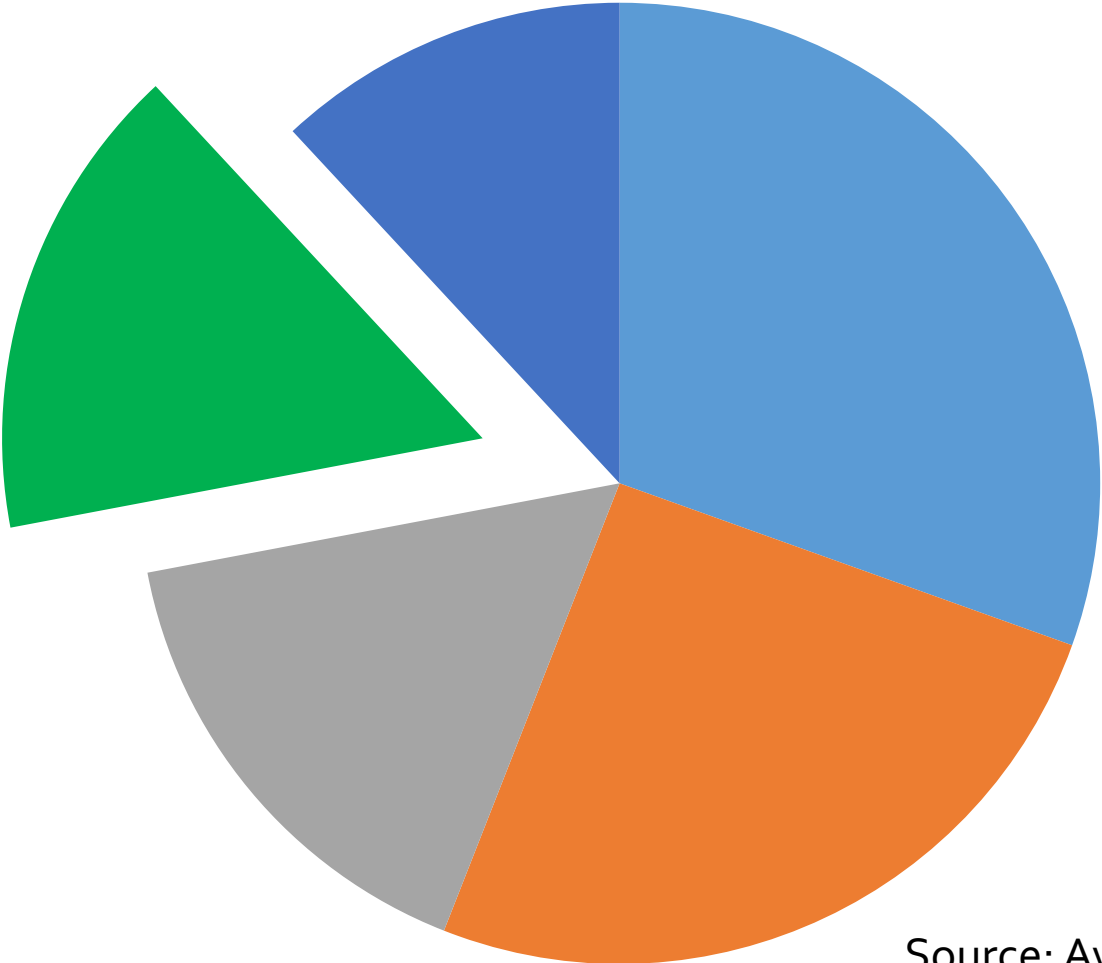
Demand sectors most challenging



Decoupling transport activity from emissions



AVIATION IN NORWAY 2016



- Passenger cars
- Lorries and trucks
- Maritime (domestic) and Fisheries
- Aviation (domestic and international)
- Other mobile sources

Source: Avinor 2018



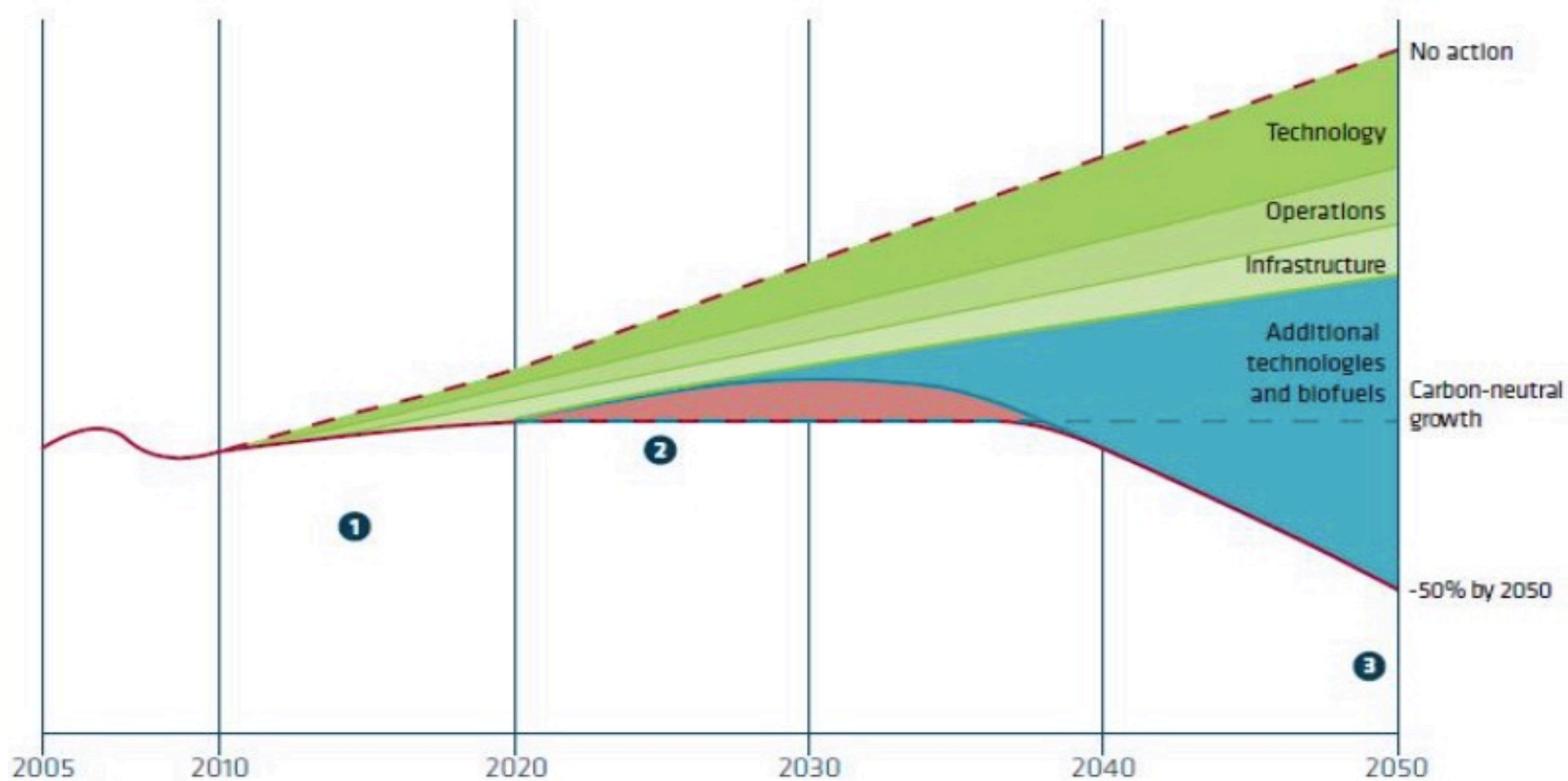
Aviation in 2040



- Passenger cars
- Lorries and trucks
- Maritime (domestic) and Fisheries
- Aviation (domestic and international)

Source: Avinor 2018

CORSIA – carbonneutral growth



Source: ATAG



The White Paper «National Transport Plan 2018-2029»:
*«Drop-in requirement of 1 % sustainable aviation biofuel
from 2019 with a target of 30 % in 2030.»*

In addition to policy measures:

- *CO₂ tax,*
- *ETS,*
- *CORSIA*
- *Passenger duty*

Challenges:

- **Cost**
- **Availability**
- **Other competing users**



Emerging SAF-production (2018)



Sustainable Aviation Fuels – pathways

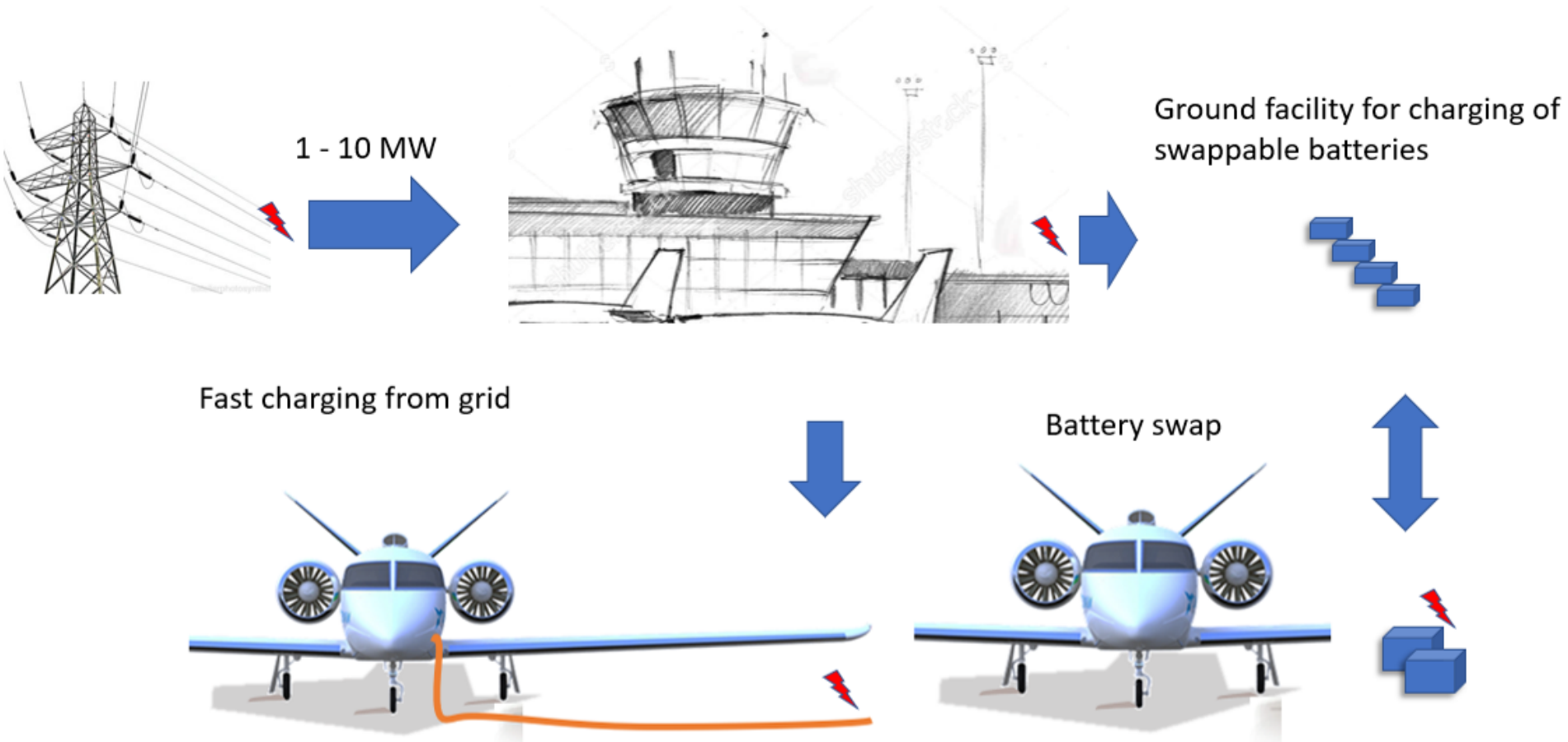
- Catalytic hydro pyrolysis
- Biomass gasification
- Electrofuels/RE-Fuels/Power to X
- Bio-refining and Biomanufacturing
- Biobutanol

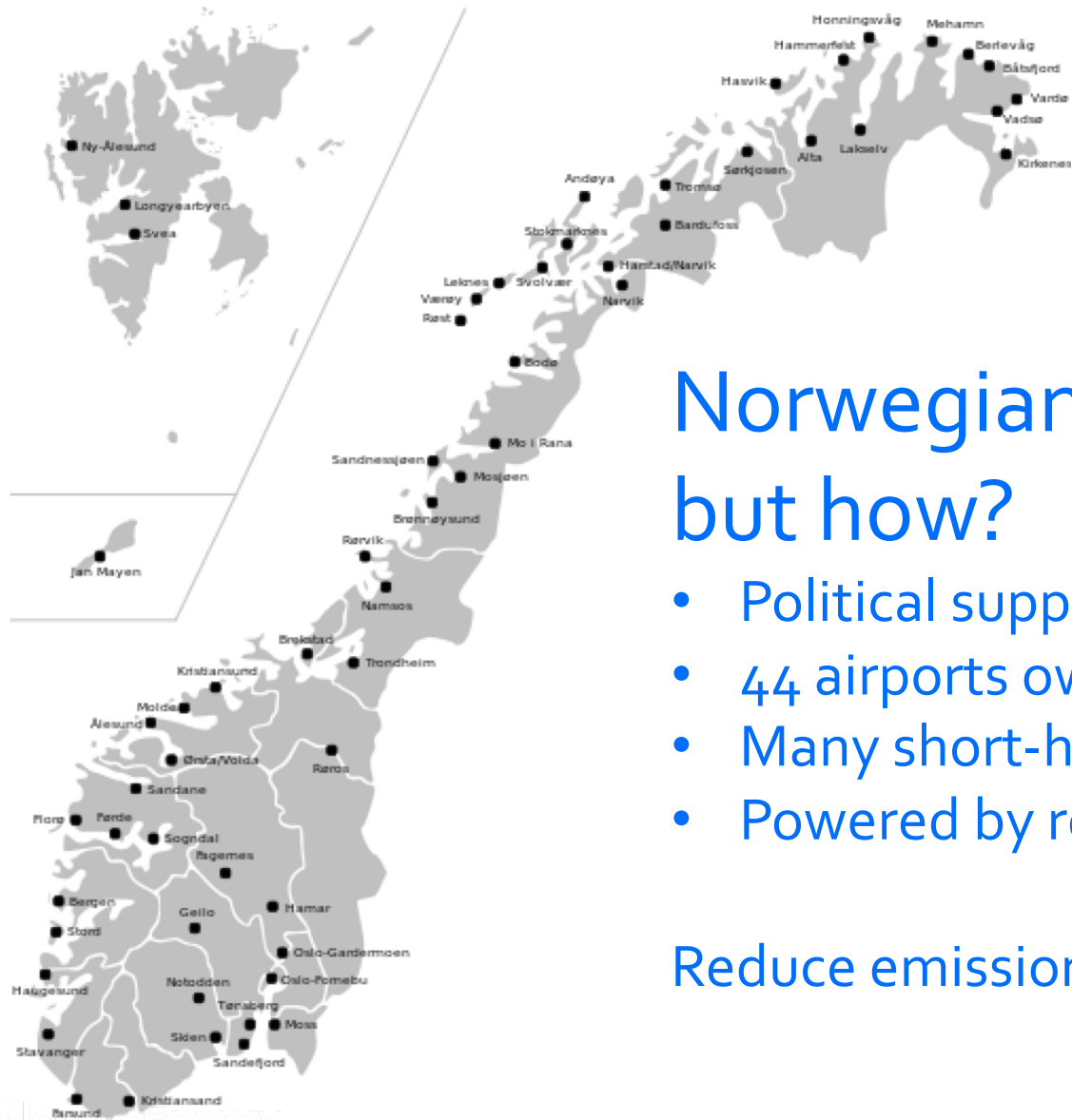
<http://www.nordicenergy.org/article/nordic-leadership-in-sustainable-aviation-fuels-policies-technology-options-research-needs-and-markets/>

ELECTRIC AIRCRAFT



Electrify aviation in Norway?



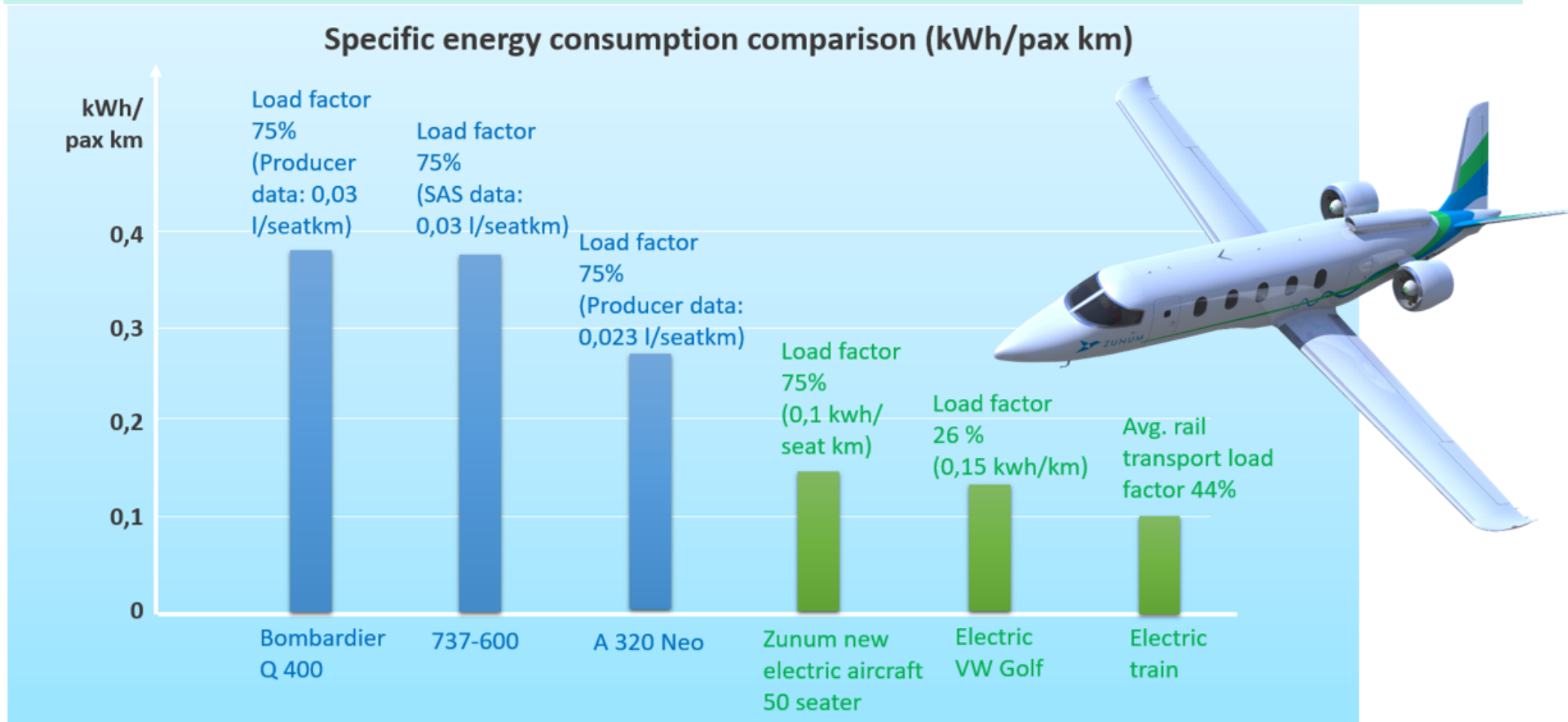


Norwegians will continue to fly, but how?

- Political support
- 44 airports owned by Avinor
- Many short-haul flights
- Powered by renewable energy

Reduce emissions by 50 percent by 2022

Electric aircraft - specific energy consumption



Source: Jan Otto Reimers, Green Futures



NCM and Aviation

- “Sustainable jet fuel for aviation” - Report and conference – Oslo, 2016
- “Aviation workshop” – Nordens Hus 2017
- “Nordic leadership in aviation reductions” – CPH 2017
- “Electrification of Aviation” Almedalen” 2018
- “Sustainable Aviation Fuel Workshop” Nordens Hus 2018
- “Aviation side-event” Nordic Pavilion at COP-24 2018 Katowice

