

An aerial photograph of the Oslo Havn port area in Norway. The image shows a large body of water with several islands and a central industrial port facility. In the background, a dense urban area is visible under a hazy sky. A semi-transparent dark blue box is overlaid on the left side of the image, containing white text.

From dock to grid: Ports crucial role in the green transition

Jens Eirik Hagen, Head of Energy Transition

Oslo Havn

Port of Oslo



Norway's largest container port



Grain and salt storage



Import terminal for fuel



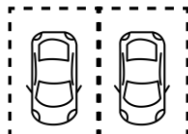
Building materials / concrete



Cement Import



Container transshipment terminal



Car Import



Intermediate storage for future CO2 plant

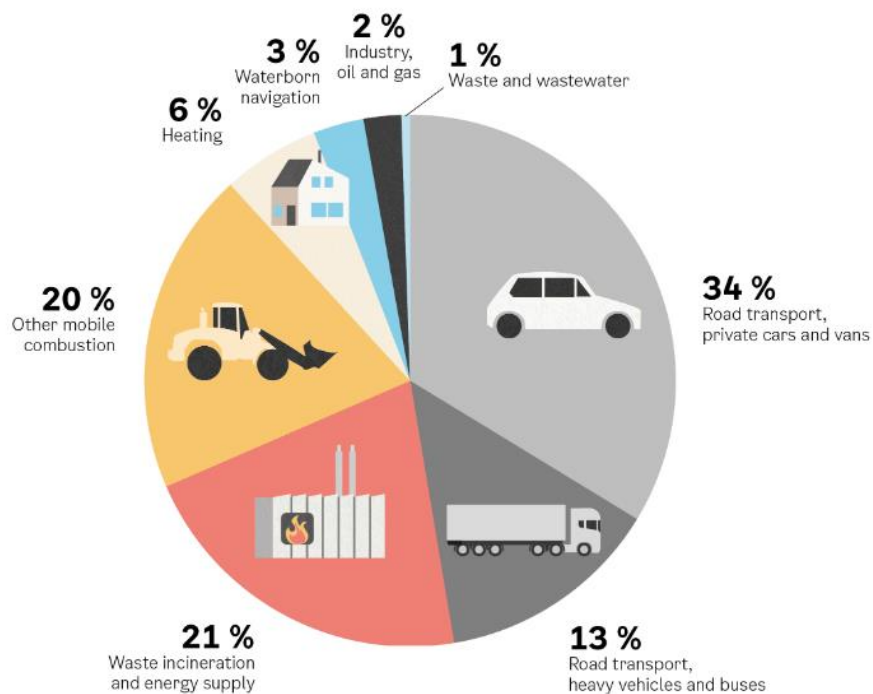


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City and Port with common Action Plan –
Same data, same goal and same strategy



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Oslo kommune

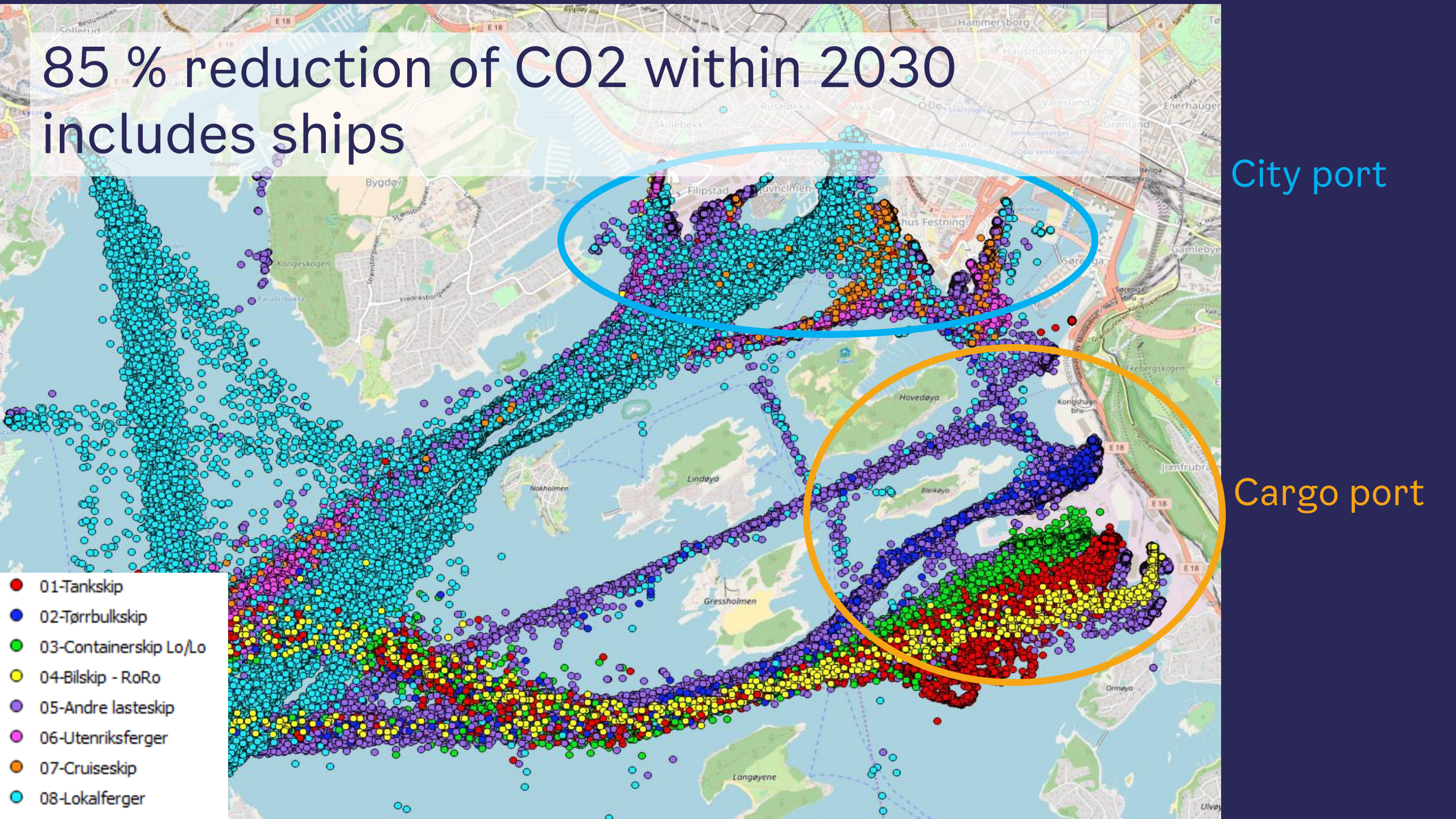
OSLO HAVN SOM NULLUTSLIPPSHAVN

Handlingsplan, juni 2018

Byrådsavdeling for næring og eierskap



85 % reduction of CO2 within 2030 includes ships

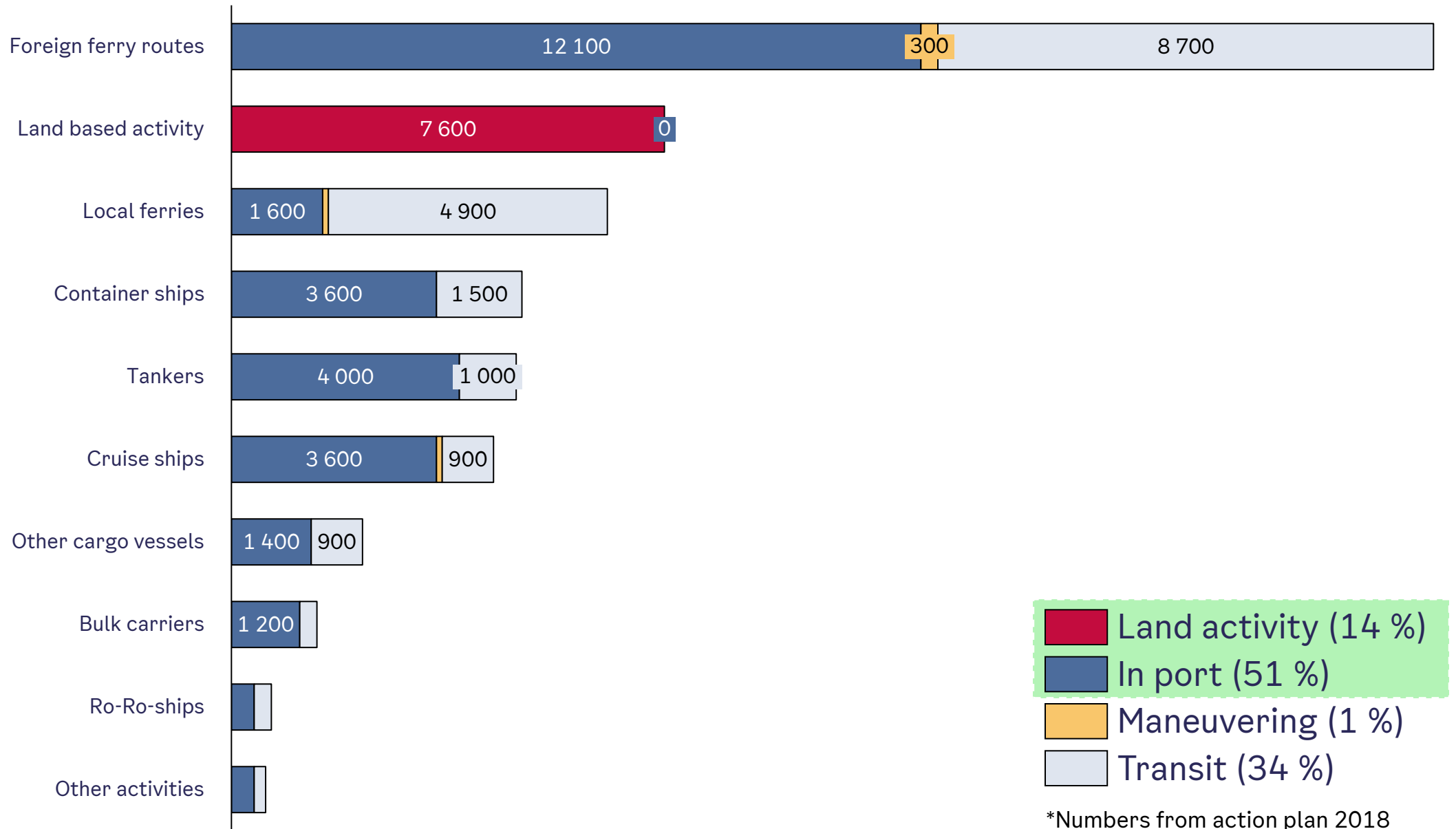


City port

Cargo port

- 01-Tankskip
- 02-Tørrbulkskip
- 03-Containerskip Lo/Lo
- 04-Bilskip - RoRo
- 05-Andre lasteskip
- 06-Utenriksferger
- 07-Cruiseskip
- 08-Lokalferger

Knowing and understanding your emission data guides future actions

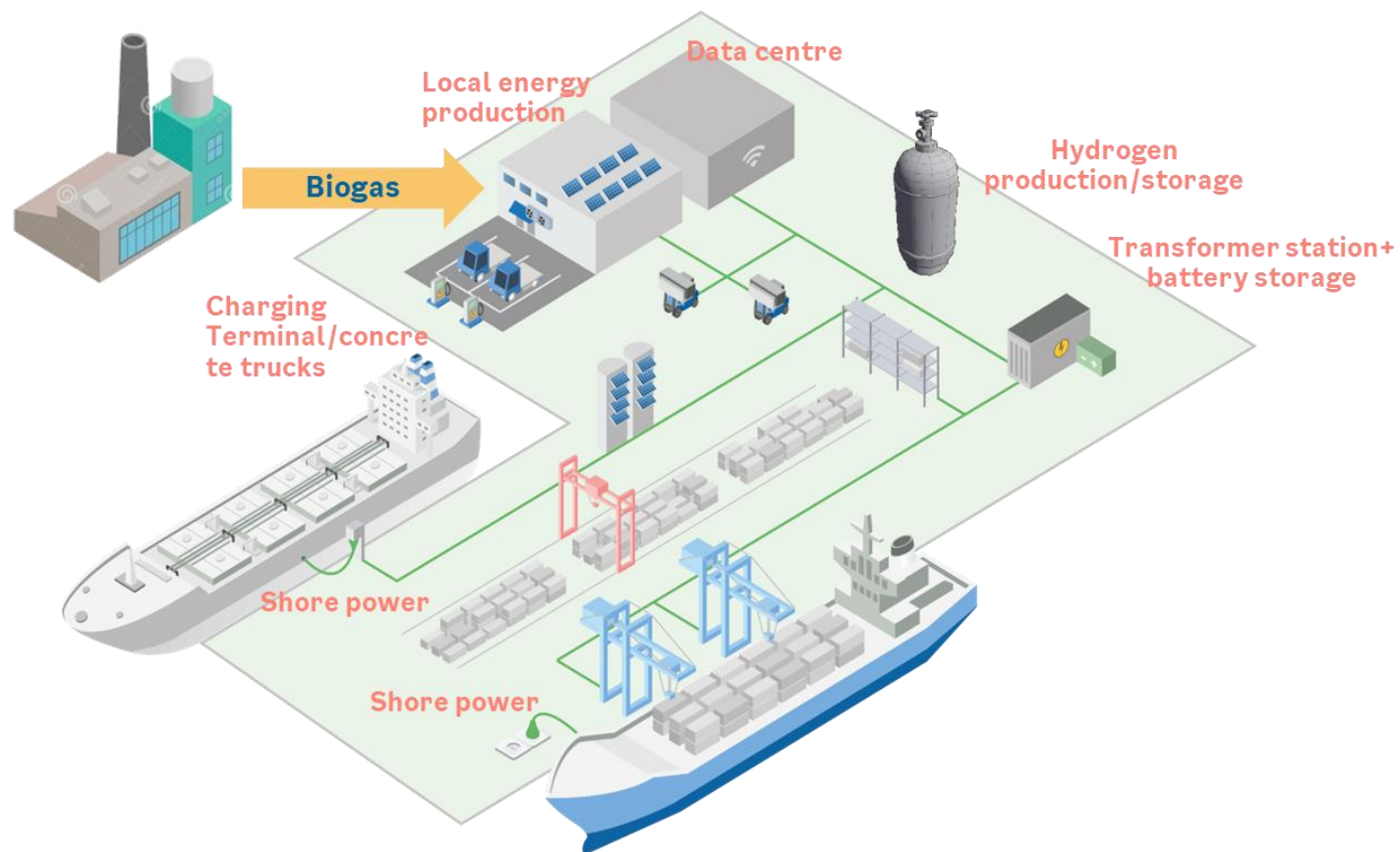


Krise: Fullt strømnnett frem til 2035



Energy strategy to reduce risk of running out of grid capacity

1. Grid capacity - reinforce
2. Save energy
3. Produce more energy
4. Sharing of charging and energy flexibility
5. Cooperation with ambitious partners



Port as a flexible energy hub

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Existing and future (flexible) shore connections in Oslo



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**Hybrid ships
with 1 MWh
batteries
using shore
power**



**Fully electric
tug
Battery
capacity of
1,72 MWh**



**Shared
charging for
better use of
grid capacity**

2023:
First public
charging station
for heavy duty
trucks
- 6 chargers

2024:
26 additional
chargers

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Testing of new technologies to enhance efficiency and reduce charging time



Foto: Elonroad



Foto: Elonroad

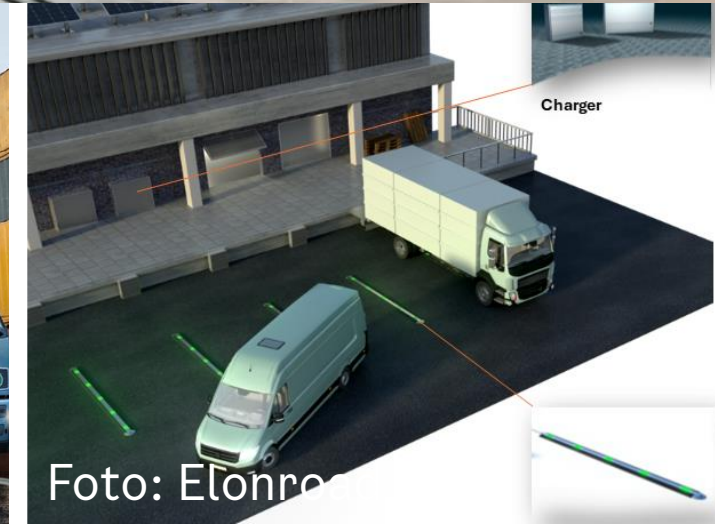
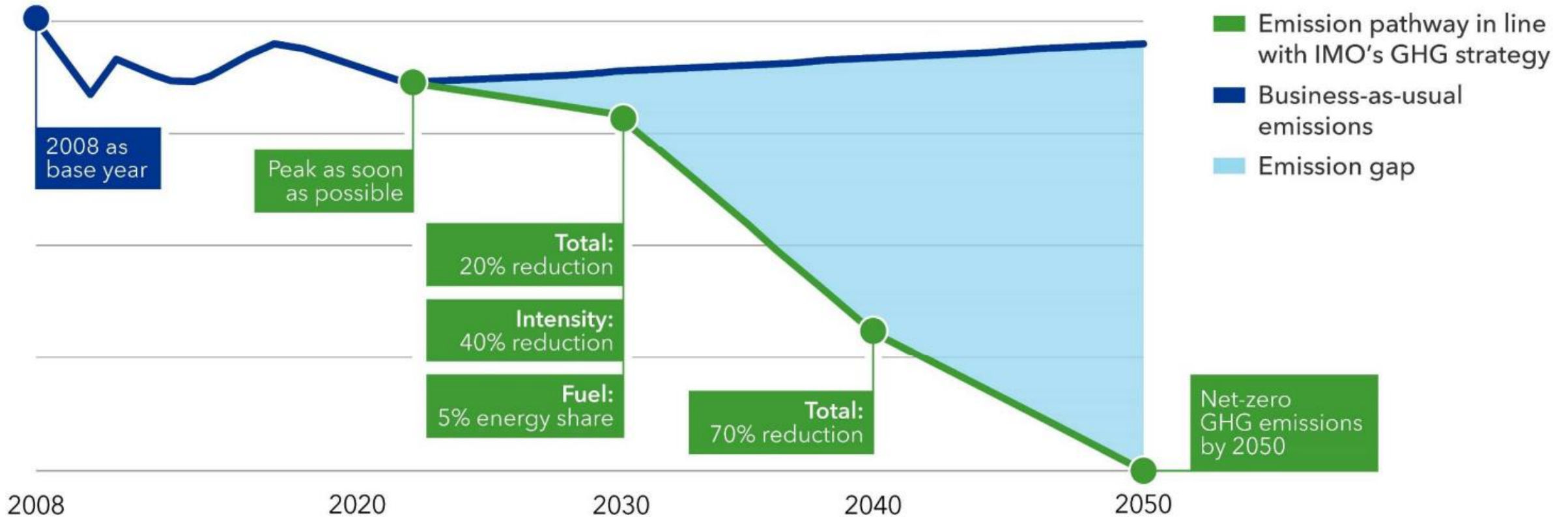


Foto: Elonroad

Strengthened IMO strategy on GHG reductions

Units: GHG emissions



Total: Well-to-wake GHG emissions; **Intensity:** CO₂ emitted per transport work; **Fuel:** Uptake of zero or near-zero GHG technologies, fuels and/or energy sources

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How can ports and shipping cooperate to reduce emissions?

- Onshore Power Supply
- Short and efficient port stays
- Safe and efficient bunkering of low carbon / zero emission fuels
- Incentives promoting sustainable shipping
- Support for the optimization of port calls including facilitation of just-in-time arrival of ships.



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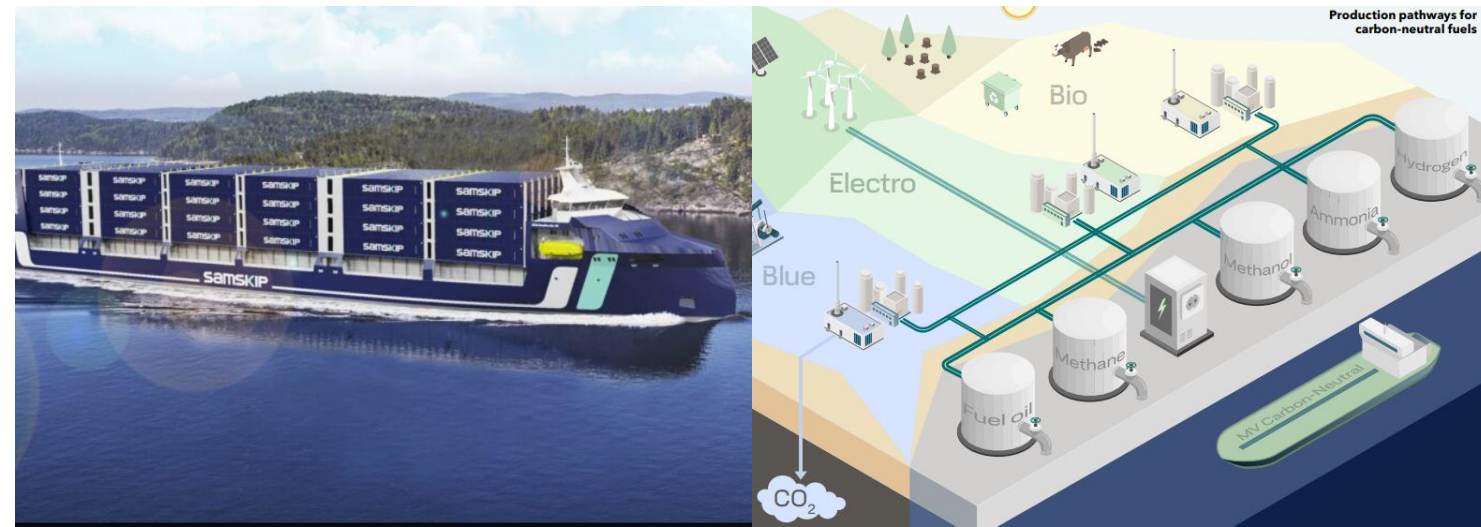
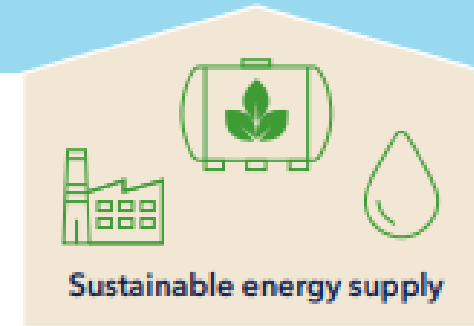
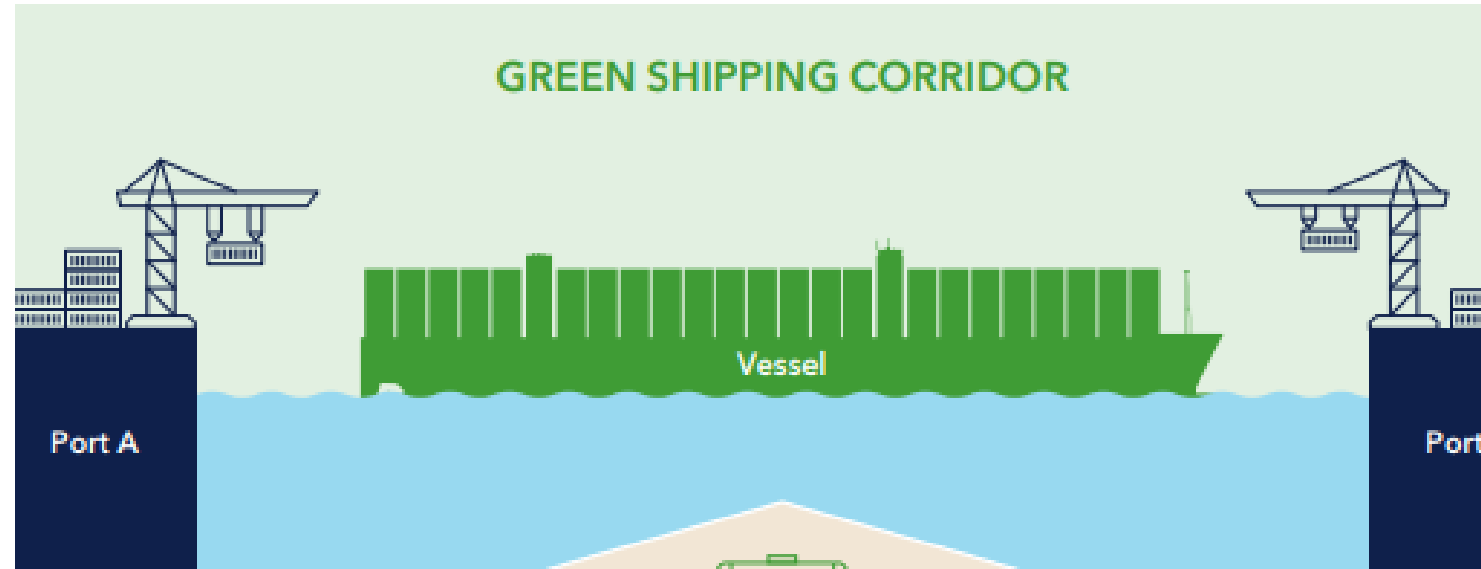


Foto: Colourbox

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Cooperation between ports, cities and shipping companies

- “Emission free Oslofjord”
 - 8 ports in the Oslofjord
 - Same standards and same routines
- MoU green corridor between Oslo and Rotterdam (Samskip)
- Study - port readiness level:
 - Safe and efficient bunkering of liquid hydrogen



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Thank you!

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17 PARTNERSHIPS FOR THE GOALS



Cooperation to succeed

13 CLIMATE ACTION



Future zero-emission port

7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Energy-efficient port

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Sustainable urban port

14 LIFE BELOW WATER



15 LIFE ON LAND



Zero-emission operations

