

A photograph of an offshore wind turbine in the North Sea, Norway. The turbine is white with three blades, and its shadow is cast on the dark, choppy water. In the background, other turbines are visible under a cloudy, overcast sky. A semi-transparent blue horizontal band is overlaid across the middle of the image, containing the title text.

# Norseman Wind AS: Offshore wind in Norway – the big picture

May 2022



# Strong consortium backing Norseman Wind AS



Reputable power companies and industry partners with substantial financial muscles



## EnBW:

Main owner in Norseman Wind AS.  
One of Europe's leading companies in offshore wind



## NorgesGruppen / Asko Fornybar:

Will build offshore wind to cover its own power requirements

**GREENSTAT**

## Greenstat:

Norwegian energy company focusing on green hydrogen, solar and wind power, as well as maritime zero-emission solutions



## Norseman Wind:

The project company that will apply for a licence in SNII



## Hitachi Energy:

Global leader of HVDC technology



## Aker Solutions:

Will deliver foundations, the platform for offshore HVDC transformer stations and installation



## National Oilwell Varco:

Globally leading supplier of solutions and technology for the installation and maintenance of wind turbines as well as digital solutions for offshore installations



## Seafront Group:

Will develop logistics, warehouse and port solutions based in Agder, Norway



## Energy Innovation:

Caera AS is responsible for supplying technical personnel and service support



## OSM AS:

Will contribute with shipping and offshore crews, including leader training for offshore

# We are a BIG industry project

**35 billion NOK  
CAPEX**



**At least 50% to norwegian  
supply chain**



**600 – 800 mill. NOK  
Yearly O&M budget**





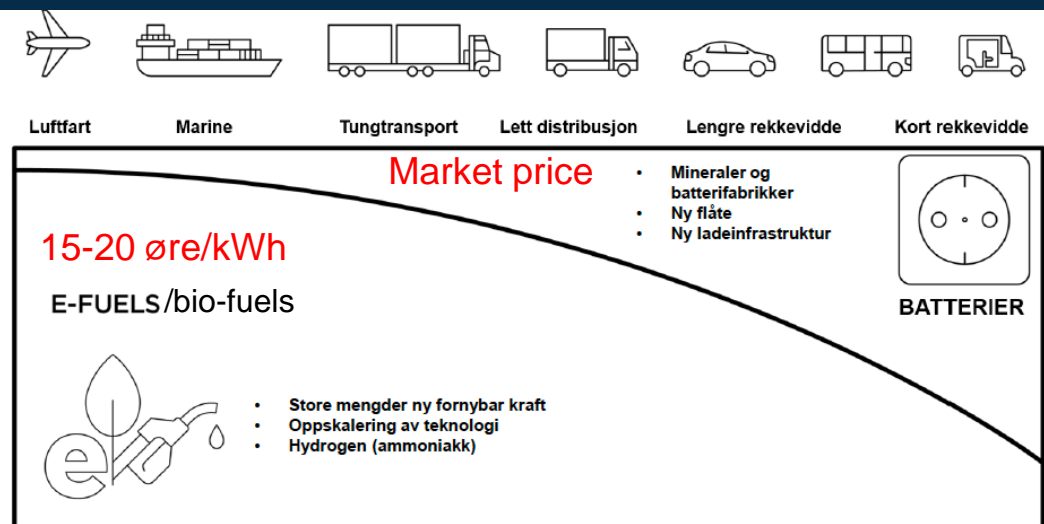
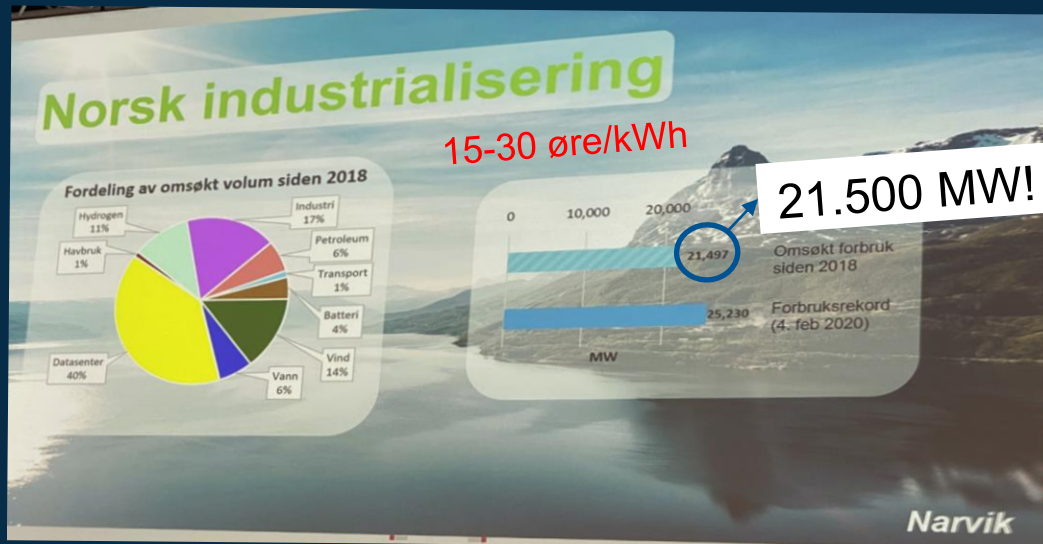
# De-carbonisation equals electrification

Norway will implement 55% emission reductions in 2030 and become climate neutral in 2050

Norway has big ambitions for a green shift, 160,000 oil jobs with associated value creation must be replaced over time

Volume, power price mix, and timing is important to succeed

Air capture: 20-30 øre/kWh  
Point capture: market price



## Need for speed

We need an estimated:

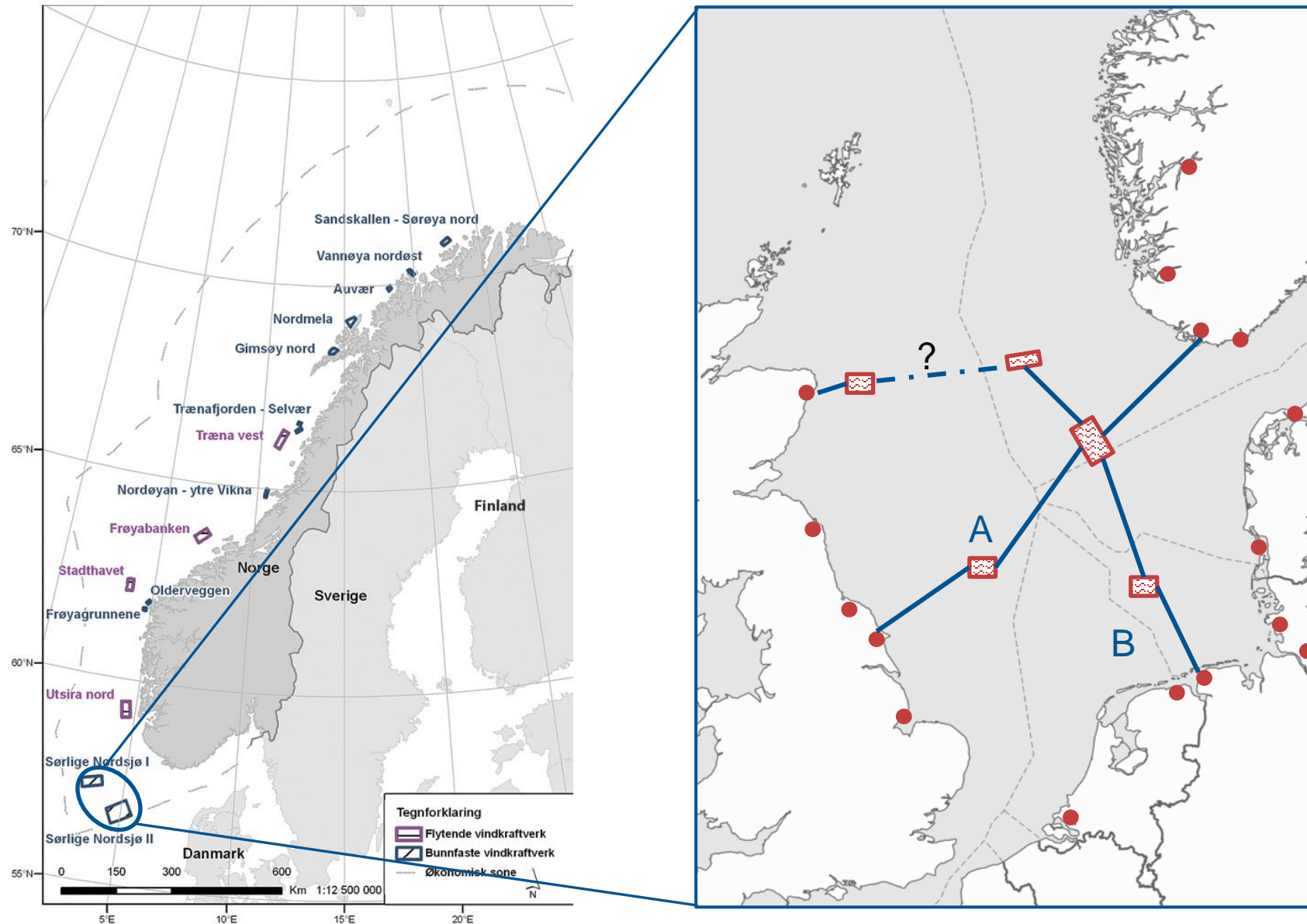
- 60 TWh (15 GW) inshore wind by 2030,
- 80 TWh (20 GW) of offshore wind

before 2050 to cover Norway's energy need!

	2030	2050	Estimated consumption
De-Carbonisation	44 TWh	80 TWh	
Re-Industrialisation	30 TWh	70 TWh	
Sum	74 TWh	150 TWh	
Buffer	6 TWh	30 TWh	
<b>Total</b>	<b>80 TWh</b>	<b>180 TWh</b>	

	2030	2050	Estimated increased production
Energy efficiency	13 TWh	15 TWh	
Sunpower	2 TWh	5 TWh	
Hydro power	5 TWh	20 TWh	
Offshore wind	0 TWh	80 TWh	
Onshore wind	60 TWh	60	
<b>Total</b>	<b>80 TWh</b>	<b>180 TWh</b>	

# 20 GW - a robust offshore wind development strategy



Norwegian offshore wind will be determined by two interlinked factors:

- Capacity at european landing points
- Domestic need

Landing points will probably be at offshore wind hubs

These could be designed for domestic offshore wind capacities only

Inteconnected to utilize residual capacities

# Export success requires that we develop a comprehensive value chain with stable access to projects

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Most projects in Europe over the next 10-15 years will be bottom fixed

It is important that we use Søndre Nordsjø II to establish competitive norwegian supply chain

A supply chain that will also be important for a future floating wind market that needs maturation

**Sørlige Nordsjø II:  
bottom fixed**



**Utsira Nord:  
floating**



Europe is a 450 GW market, 10-15% floaters



- It is important to get started with the auction this year enabling the fastest possible development
- Annual announcements towards a 30 GW target to secure a maximum norwegian content. Not fewer and bigger announcements (as indicated by the Government). This is due to limited capacity in the supply chain.
- This year, the authorities should define where the 30 GW will be located. Statnett needs a guiding signal to prepare network solutions, both radials hybrids and network reinforcements in the existing grid.
- The auction (not the pre-qualification) should include:
  - Quantitative part (CfD or similar)
  - Qualitative part:
    - Execution ability
    - Norwegian content
    - Climate footprint in connection with development and operation



# Diversity in supply chain and business models

Group	Applicants	Areas applied
Norwegian E&P backed	Equinor / Hydro REIN / RWE	Sørlige Nordsjø II
	Equinor / Vårgrønn (Eni & Hitech Vision)	Utsira Nord
	Vårgrønn / Agder Energi/GIG	Sørlige Nordsjø II
	Aker Offshore Wind / Statkraft / BP	Sørlige Nordsjø II
	Aker Offshore Wind	Utsira Nord
Norwegian non-E&P backed	Fred Olsen Renewables / Hafslund Eco / Orsted	Both
	Norseman Wind (ASKO Fornybar & EnBW)	Sørlige Nordsjø II
	Shell / Lyse / BKK	Both
	NorSea / Parkwind	Both
	Deep Wind Offshore (Knutsen/Haugland Kraft/SKL)	Both
	Seagust (Arendals Fossekompani & Ferd)	Both
	Magnora Offshore Wind (Magnora & Technip FMC)	Utsira Nord
	Kvitebjørn Havvind	Utsira Nord
	RWE/NTE/Havfram	Utsira Nord

No company should be awarded more than one area

This will enable:

- Supply chain diversity
- Business model diversity
- Most players will be given a development opportunity
- Robust by fall outs



**Norseman**  
**Wind as**

Thank you