# Norwegian Offshore Wind

Bruno Leiniö, Senior Project Manager
Innovation Norway

Norway

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# Who we are

**We contribute to sustainable growth for Norwegian industry, commerce and reputation building through capital and expertise.**

**IN is Norway`s official trade promotion agency**

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Cut greenhouse gas emissions by 55 per cent to ensure **greener industry**

- Create 300 000 new jobs to ensure a well-functioning welfare society

# Offshore Wind – Norway

- Where we are
- Why Offshore Wind
- Why O&G + OW
- Last Tender Process and Results

Offshore wind

# Areas for development

The Norwegian Water Resources and Energy Directorate (NVE) has identified 20 areas to study for potential offshore wind development.


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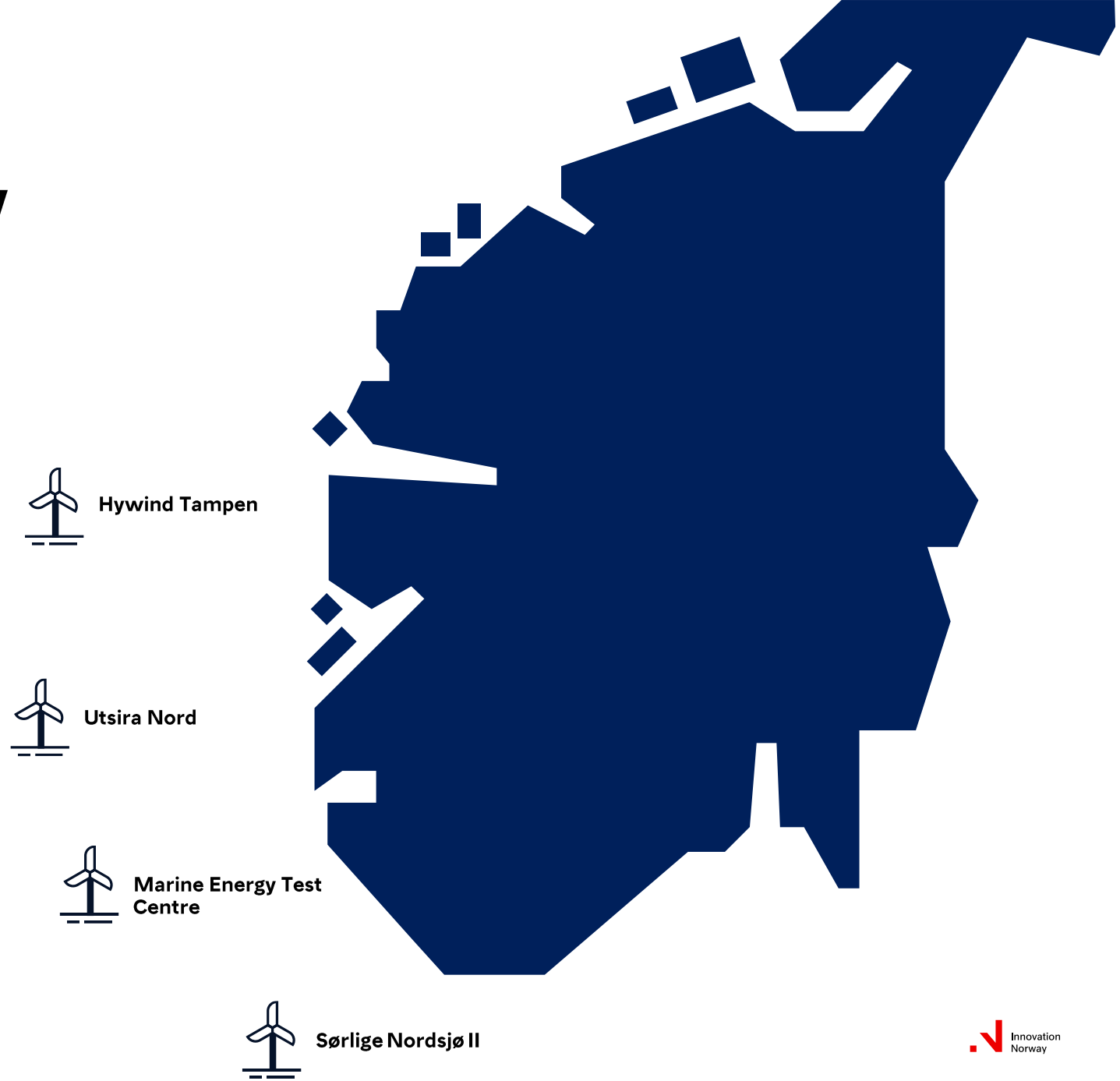
# Projects in Norway

- **Hywind Tampen – Floating**
  The world's largest FOW farm, with system capacity of 88 MW
- **Utsira Nord – Floating**
  An area of around 984 km² located northwest of Stavanger
- **METCentre – R&D, Floating**
  Provides locations for FOW production and testing in deep waters
- **Sørlige Nordsjø II – Bottom-fixed**
  An area of around 259 km² bordering the Danish North Sea – site awarded to developer 2024

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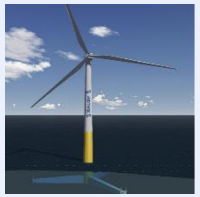

Bluewater

Company X

TBC

TetraSpar

Zephyros

Company Y

Hexicon

Flex2Power

SeaTwirl

Haugesund

Stavanger

Oslo

Mandal



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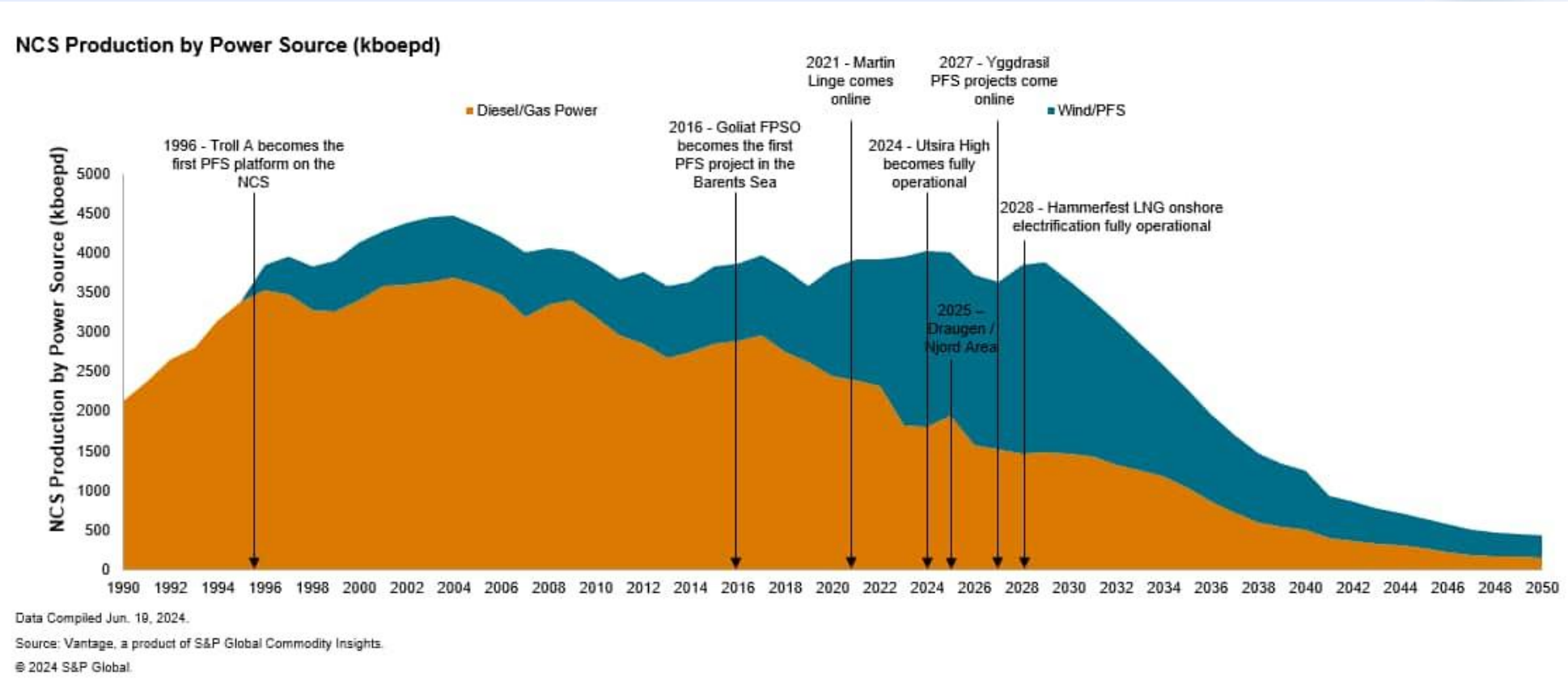
# Electrification of O&G Sector

Decarbonization has become a critical objective for the global energy sector. Norway is taking a leading role by replacing traditional gas and diesel-powered generators at offshore oil and gas platforms with cleaner onshore electricity,

Hywind Tampen – the world's largest floating offshore wind farm, and the world's first floating offshore wind farm built to power offshore oil and gas installations




Data Compiled Jun. 19, 2024.

Source: Vantage, a product of S&P Global Commodity Insights.



# Where we are

- **Target:** the Government set the target to open areas for **30 GW** offshore wind power production in Norway. This is equivalent to almost Norway's total power production today and will increase the number of wind turbines to 1500.
- 10% of the global market share on OW value chain.
- Despite having offshore wind installations since 2009, the OW farm was turned into operation just in 2023. The first area tender also happened in 2023.

- **Why did it take so long for deployment of larger OW projects in Norway?**

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# Why Offshore Wind
## - And why it took so long

- Almost 40 GW of Installed Capacity. Largest hydropower capacity in Europe.
- 99% of the electricity Matrix is Renewable
  - 90% Hydro
  - 10% Wind
- Relevant surplus of electricity for many years. Net electricity exports - **11.5% of 2023 total electricity production**.
- Norway is a major exporter of oil and natural gas, and is the world's fifth largest oil exporter and third largest natural gas exporter.

**Some of the same questions that Brazil is facing today!**

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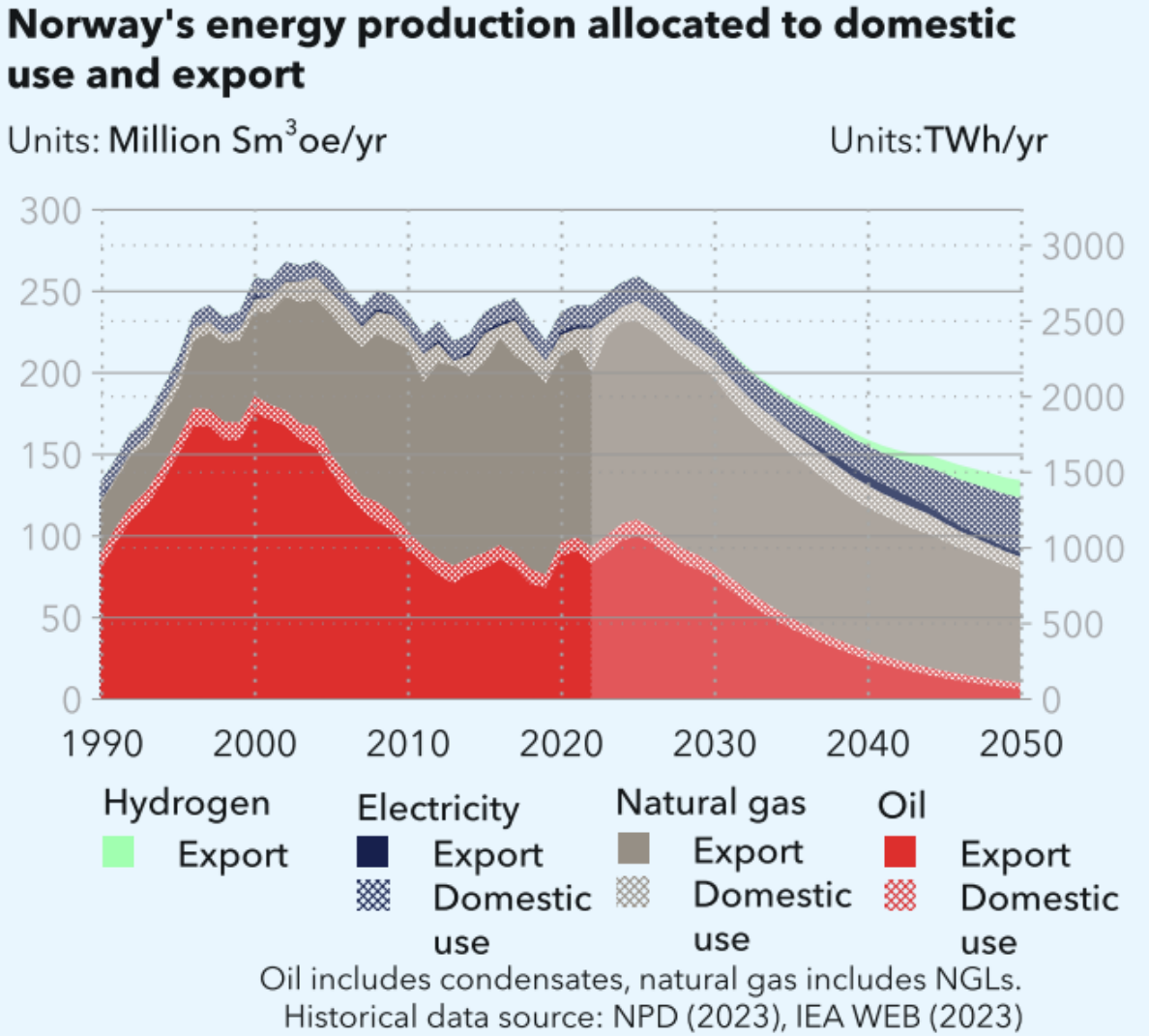
# Why Offshore Wind – The Need for Change




Source: DNV

- **6%** of the Norwegian workforce in O&G
- The service and supply industry is Norway's **second-largest industry** in terms of turnover, only surpassed by the **sale of oil and gas**, and consists of around 2000 companies. The Norwegian-based service and supply industry had a total turnover of NOK 374 billion in 2020, of which about 30 % in international markets.
- Norway is a main maritime offshore nations and has been a major player in shipping and shipbuilding for more than 150 years.
- The world's **4th largest merchant fleet**, by value (the United States ranks 5th).

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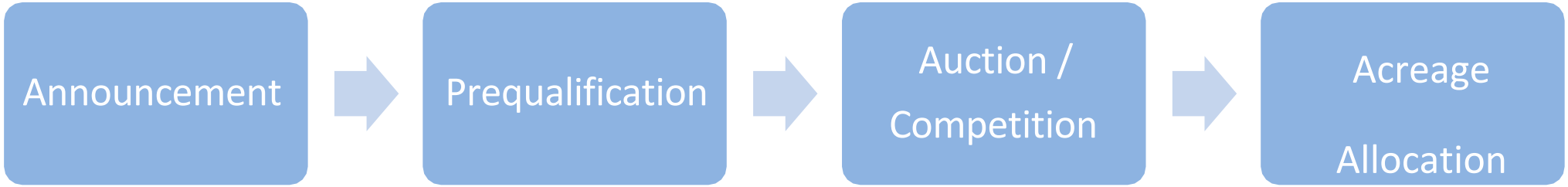
# Concession Process

**The Regulations to the Offshore Energy Act (Royal Decree on 12 June 2020)and additions in 2021 and 2023 provides detailed regulation of the administration of offshore resources, including a more detailed description of the licensing process.**

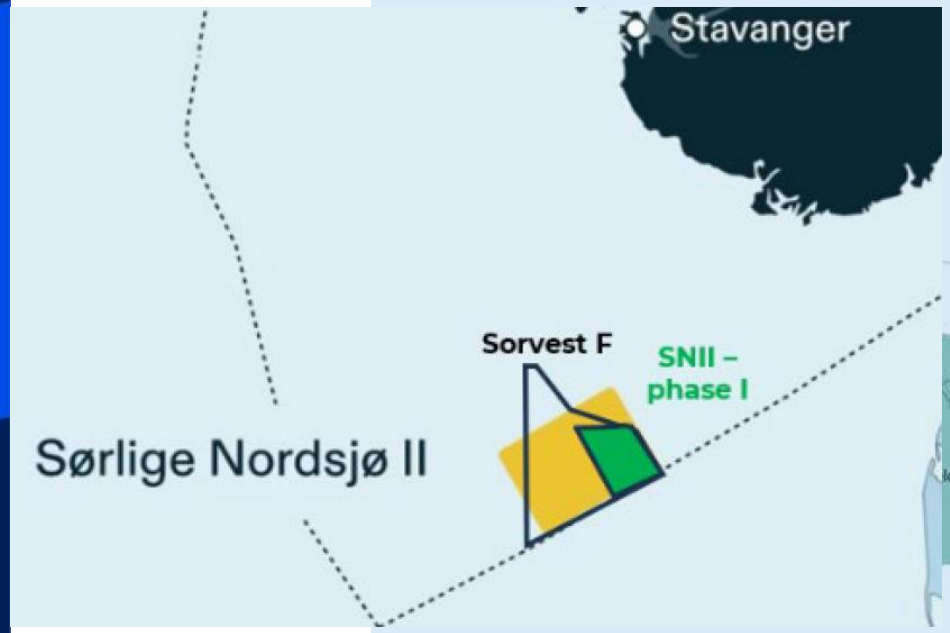


# Sørlige Nordsjø II (“SNII”)

# Sørlige Nordsjø II

**Process Announced in March 2023**

The area borders the Danish exclusive economic zone in the North Sea and is suitable for bottom-fixed wind power. A time limited exclusive right to the project area will be awarded to one project with **minimum 1,400 MW and maximum 1,500 MW** capacity. The Norwegian Parliament decided the limit for state support in **NOK 23 billion (EUR 2 billion).**





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# Prequalification Process

The prequalification process used the criteria on the participants with regards to

1) **Execution capabilities (60%),**
2) **Sustainability (20%) and**
3) **Local ripple effects (20%)**

- The applicant must prove:
  - **> NOK 40 billion** each of the last three years and a solidity (equity capital / total capital) of at least 20% over the same period or a credit rating of minimum BBB- (S&P) / BBB- (Fitch) / Baa3 (Moody's).
  - The financing plan must reflect that the equity capital in the project company is at least 20% of the total investment cost.
  - **Experience and competence to complete the project**, and must as a minimum have experience comprising the construction of a full-scale offshore wind project of minimum **300MW capacity** that is fully operational.
  - Weighted positively in case of O&G electrification and the applicants are required to document measures to promote "**SMEs**".

# Auction Model

- The auction model for SNII was set to be a monetary auction between the pre-qualified participants.
- The auction model was held as an open auction process where the lowest offered CfD contract strike price wins.

# Sørlige Nordsjø II - Results

- **Prequalification:** 16th of February 2024:
  - Aker Offshore Wind, BP og Statkraft
  - Equinor og RWE
  - Norseman Wind (Energie Baden-Württemberg AG)
  - Shell, Lyse og Eviny
  - Ventyr (Parkwind og Ingka)

- **Auction:** 20th March 2024:
  - **Ventyr SN II AS**, owned by Parkwind and Ingka-group will be the first to develop offshore wind in Sørlige Nordsjø II. The winning bid in the auction was 115 øre/kWh (0,10 EUR/kWh).

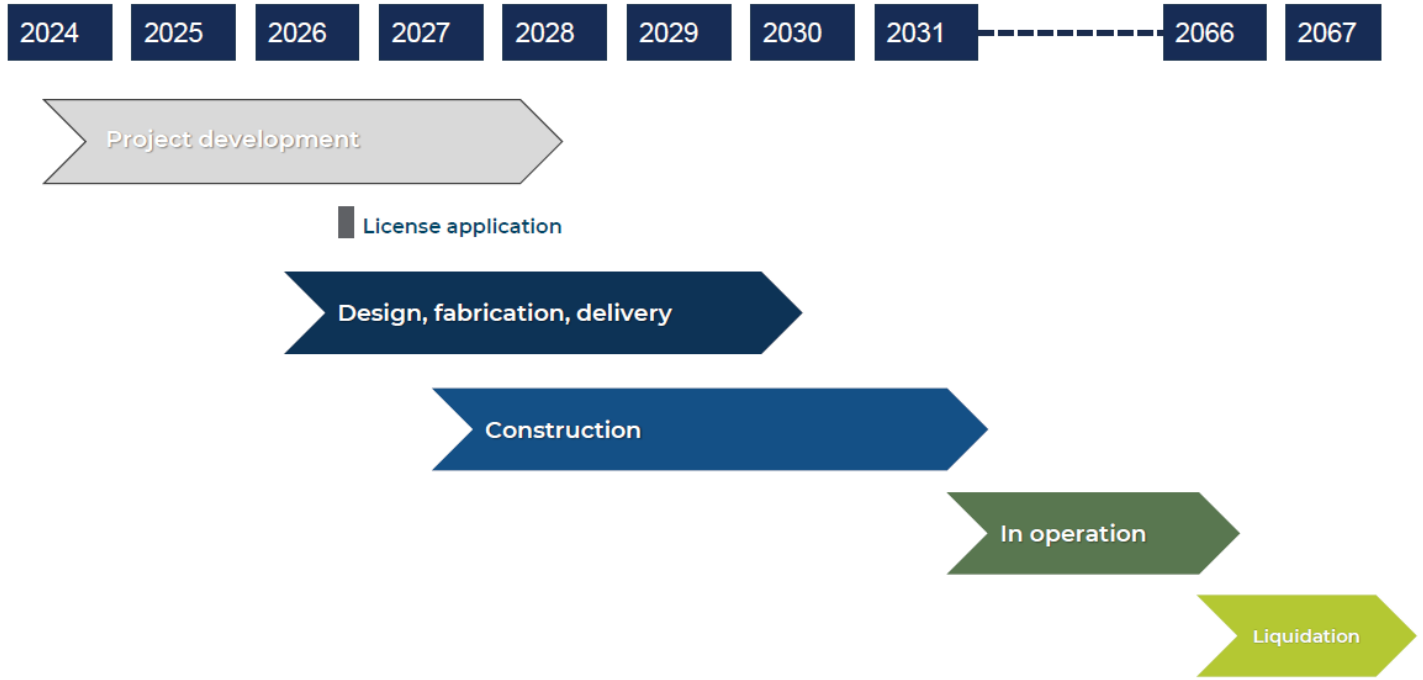
## Complementary alliance

PARK WIND
JERA GROUP

INGKA™
INVESTMENTS

| SN II – Phase I | |
|---|---|
| Capacity | 1,500 MW |
| Size (km²) | 520 km² |
| Distance to shore | 200 km (within Norwegian EEZ) |
| Waterdepth | Average of 60m water depth across the site |
| Connection to land | Windfarm to be connected to an onshore High Voltage substation |
| Lifetime | >25 years in operation |
| Power generation | Over 500.000 Norwegian households will be energized |

## SN II overall timeline

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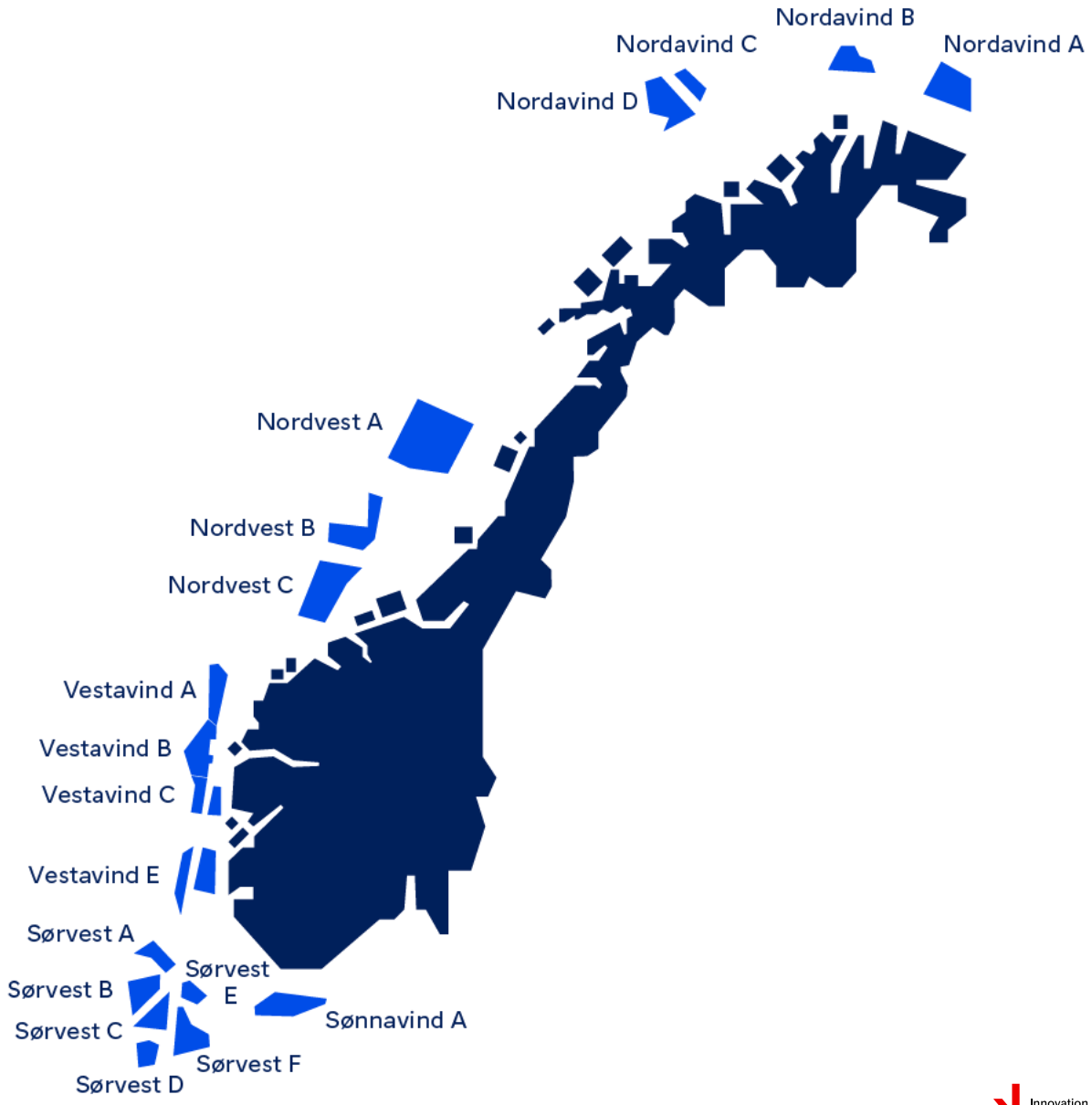
# The Norwegian Ministry of Energy plans to keep sequential tender for development of the selected areas until 2040.

# Adjustments might be necessary.



# References:


Ventyr SN II AS won the auction for the allocation of a project area for offshore wind in Sørlige Nordsjø II - regjeringen.no

veileder-for-arealtildeling-konsesjonsprosess-og-soknader-for-vindkraft-til-havs-l1244319.pdf (regjeringen.no)

Employment in the petroleum industry - Norwegianpetroleum.no (norskpetroleum.no)

https://www.regjeringen.no/no/aktuelt/regjeringa-styrkjer-satsinga-pa-havvind/id2996988/

https://www.regjeringen.no/no/tema/energi/vindkraft-til-havs/id2873850/

https://www.regjeringen.no/no/aktuelt/kraftfull-satsing-pa-havvind/id2912297/

https://www.regjeringen.no/en/aktuelt/ambitious-offshore-wind-power-initiative/id2912297/

Offshore wind development and regulation in Norway | DLA Piper

A responsible approach to floating offshore wind - regjeringen.no

BREAKING: Parkwind Consortium Wins Norway's First Offshore Wind Tender | Offshore Wind

Norway's inaugural offshore wind auction continues Tuesday | Reuters

Norway's first offshore wind tender sees bidders drop out | Montel News – English

https://www.nve.no/nytt-fra-nve/nyheter-energi/foreslaar-aa-utrede-disse-20-omraadene-for-havvind/

Decarbonization on the Norwegian Continental Shelf - Martin Linge case study | S&P Global (spglobal.com)