

Korsnäs Offshore Wind Farm

Energiarannikko

**Project Director Klaus Nissen
Technical Project Manager Anders Thomsen
18th November 2024**



VATTENFALL

Agenda

**Why
Korsnäs
Offshore
Wind Farm?**

**Who is
Vattenfall?**

Project Facts

**Technical
Development**

**What's
Next?**

Why Korsnäs Offshore Wind Farm

Finland's Government has a goal to

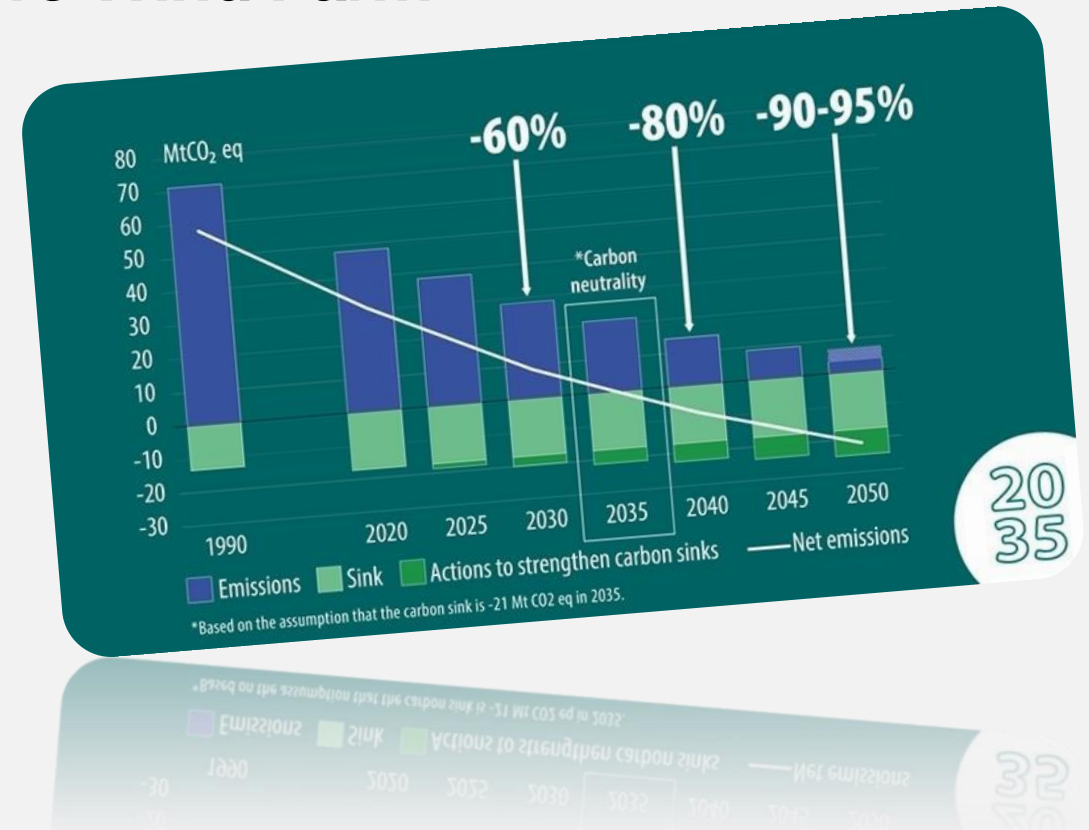
- ❑ the world's first fossil-free welfare society
- ❑ carbon-neutral in 2035
- ❑ 6.5GW offshore wind power by the end 2030's

History of Korsnäs Offshore Wind Farm

- Korsnäs wind farm zoning initiative confirmed in 2020.
- Metsähallitus development activities for Korsnäs project started Q4/2020
- Korsnäs JV partner selection process started Q4/2021
- Vattenfall have been awarded "Seabed Rights" by signing Right of Use Agreement with Metsähallitus December 2022.



Korsnäs Offshore Wind Farm has an important role in achieving this goal

- ❑ first commercial-scaled Offshore Wind Farm
- ❑ adding up to 2.5GW of clean energy to the country.

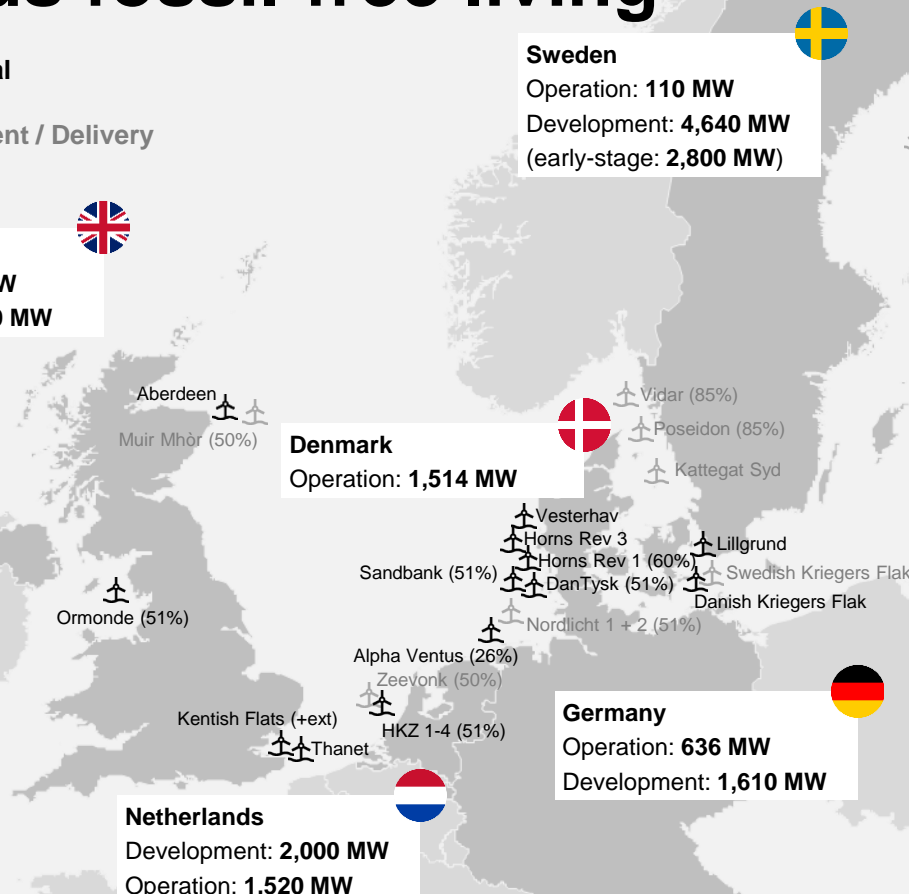


Vattenfall – Business Unit Offshore Wind

European offshore wind market | A European offshore wind leader supporting Finland towards fossil-free living

 Operational
 Development / Delivery

United Kingdom
Operation: 686 MW
Development: 800 MW



As of September 2024

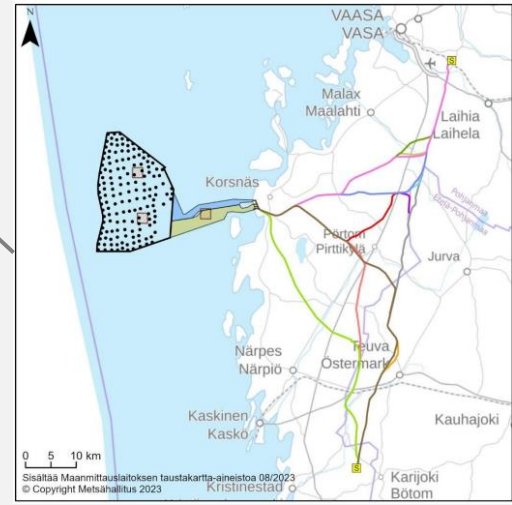


Klaus Nissen
Project Director
Korsnäs OWF
Vattenfall



Anders Thomsen
Technical Project Manager
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Korsnäs | Finland’s first commercial-scale offshore wind farm



¹Including 2,800 MW early-stage development projects in Sweden, which have not received site exclusivity yet. Development of Swedish Kriegers Flak is paused.

Korsnäs | Finland's first commercial-scale offshore wind farm

A partnership with shared culture and complementary skill set to successfully build large-scale offshore in Finland

Project Key Data:

1.3-2,5

GW total capacity

5-7

TWh annual production

2032/34

commercial operation date

2-3

billion EUR investment

Max 150

wind turbine generators

~100,000

EUR property tax per turbine

~250,000

one-family houses powered per year



Stakeholder engagement



Permitting



Technical expertise



Commercial expertise

Developed in partnership between:



Foundation



Environmental protection



Culturally close



Reliability

The future of Wind farms: Navigation Technological Challenges

Product configuration of a Windfarm

- Wind farms consists of a lot of products that are linked to each other – if one changes it will impact the others

Challenges

- Korsnäs will be operational in approx. 10years

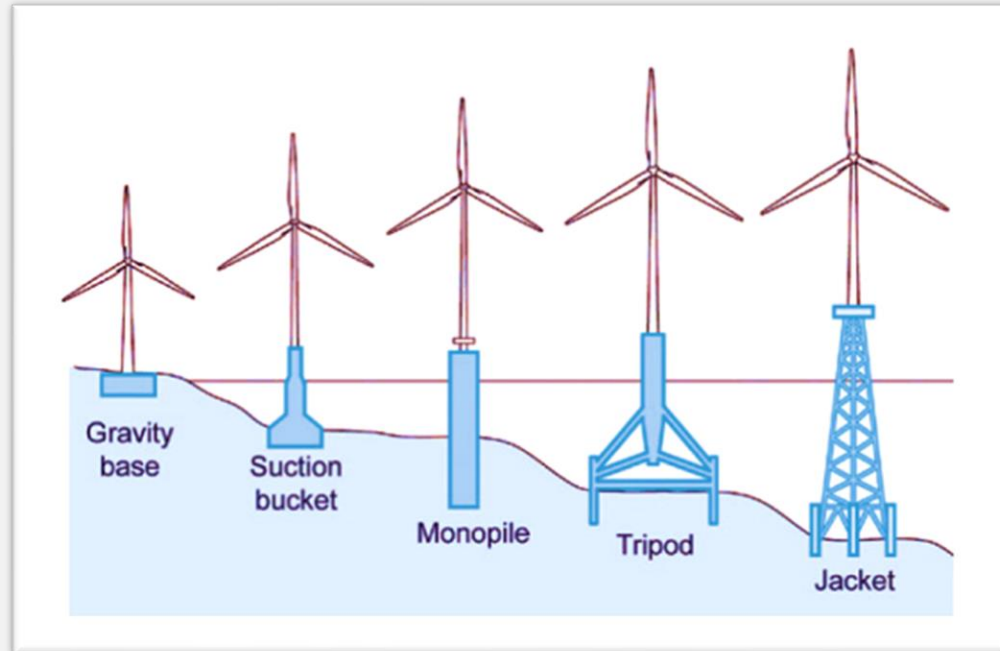
The task:

1. Define the products that are not suitable for the site
2. Close collaboration with the industry to understand which products will be available during construction



Define the products that are not suitable for the site

Case “Foundation”



Project characteristics:

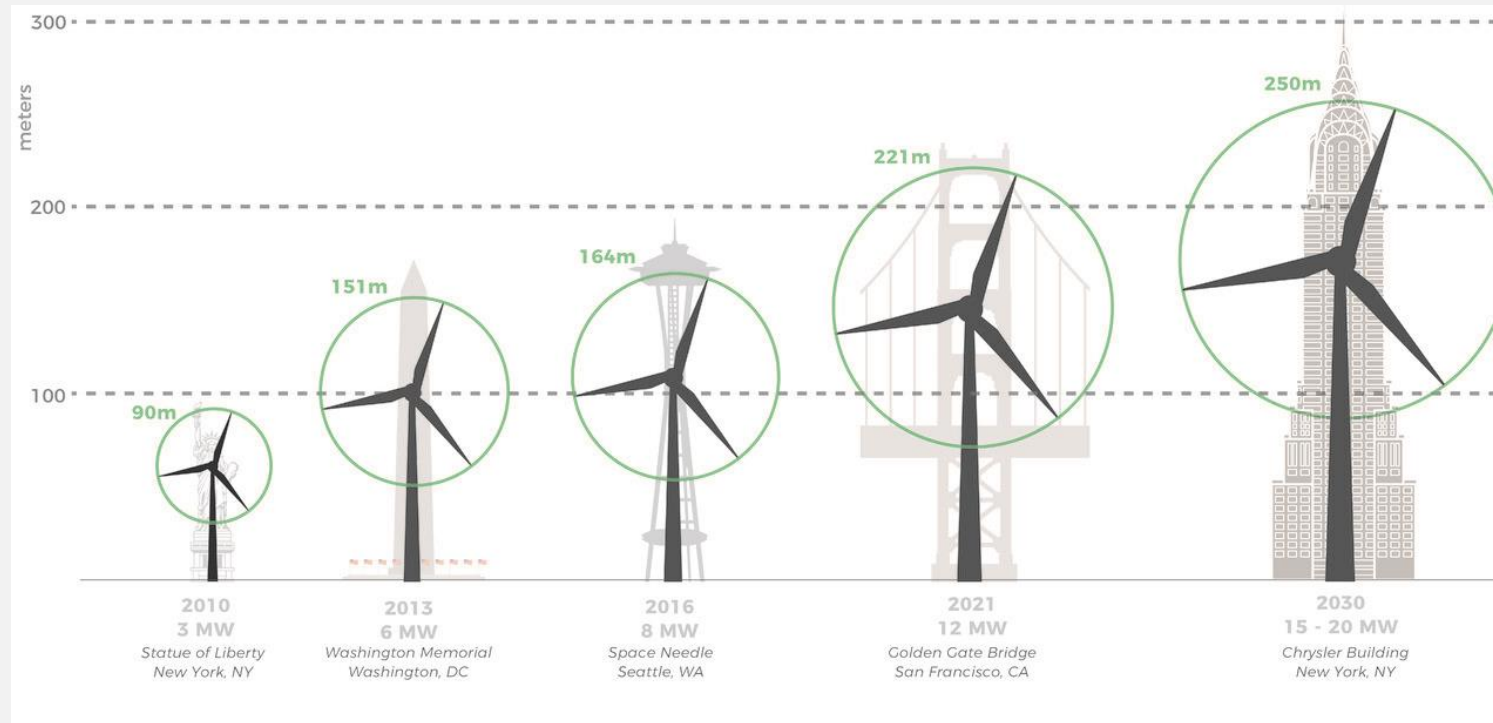
- Sea ice (Static and dynamic)
- Water depth between 10-45m
- Boulders/hard soil conditions



Picture borrowed from Aarsleff. Showing sea ice on a Gravity Based Foundations.

Close collaboration with the industry to understand which products will be available during construction

What will the turbine of tomorrow look like?



Source: <https://www.linkedin.com/pulse/offshore-wind-things-getting-bigg-philip-lewis/>

What's Next: Realizing the Project Permit and Exploring Future Possibilities

Project Milestone

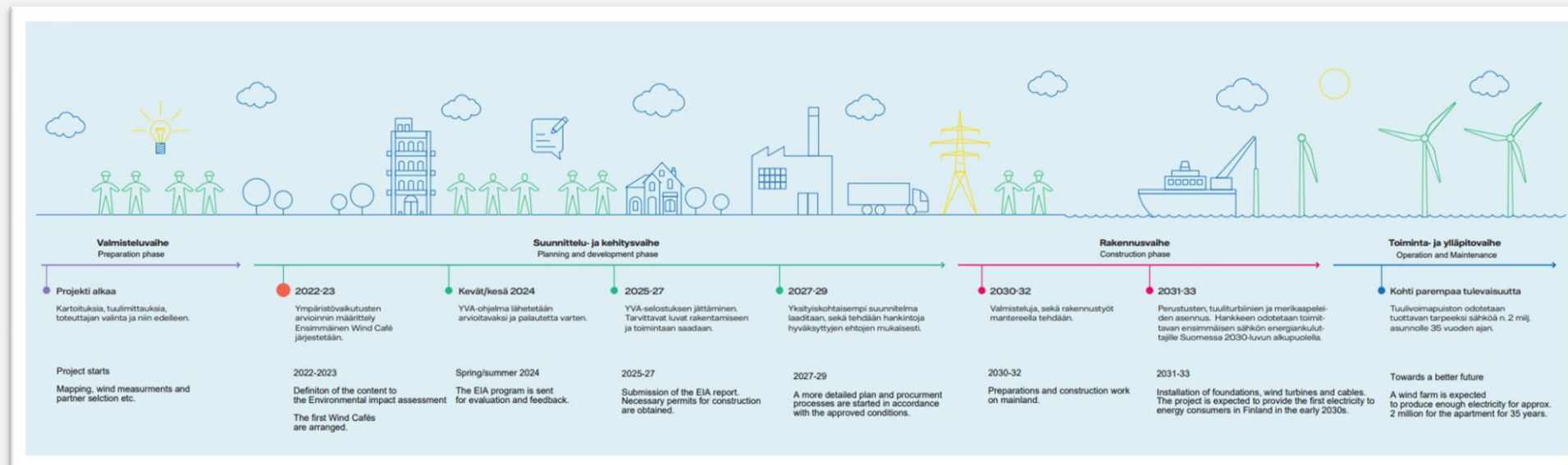
<input checked="" type="checkbox"/> EIA Programme	2024
<input type="checkbox"/> EIA Report	2025 / 2027
<input type="checkbox"/> Legally Binding Master Plan	2027/2028
<input type="checkbox"/> FID	2029
<input type="checkbox"/> Construction Start	2030/32
<input type="checkbox"/> COD	2034 / 2035

Finland's Government to recognize Offshore Wind Support

- ☐ actively drive discussions with the Finnish government in terms of subsidization ie. Transmission
- ☐ Contracts for Difference (CfD), tax breaks and permitting process updates need to be initiated

Supply Chain

- ☐ harbor for pre-assembly and Operation and Maintenance
- ☐ MoU's with Finnish ports





Thank you