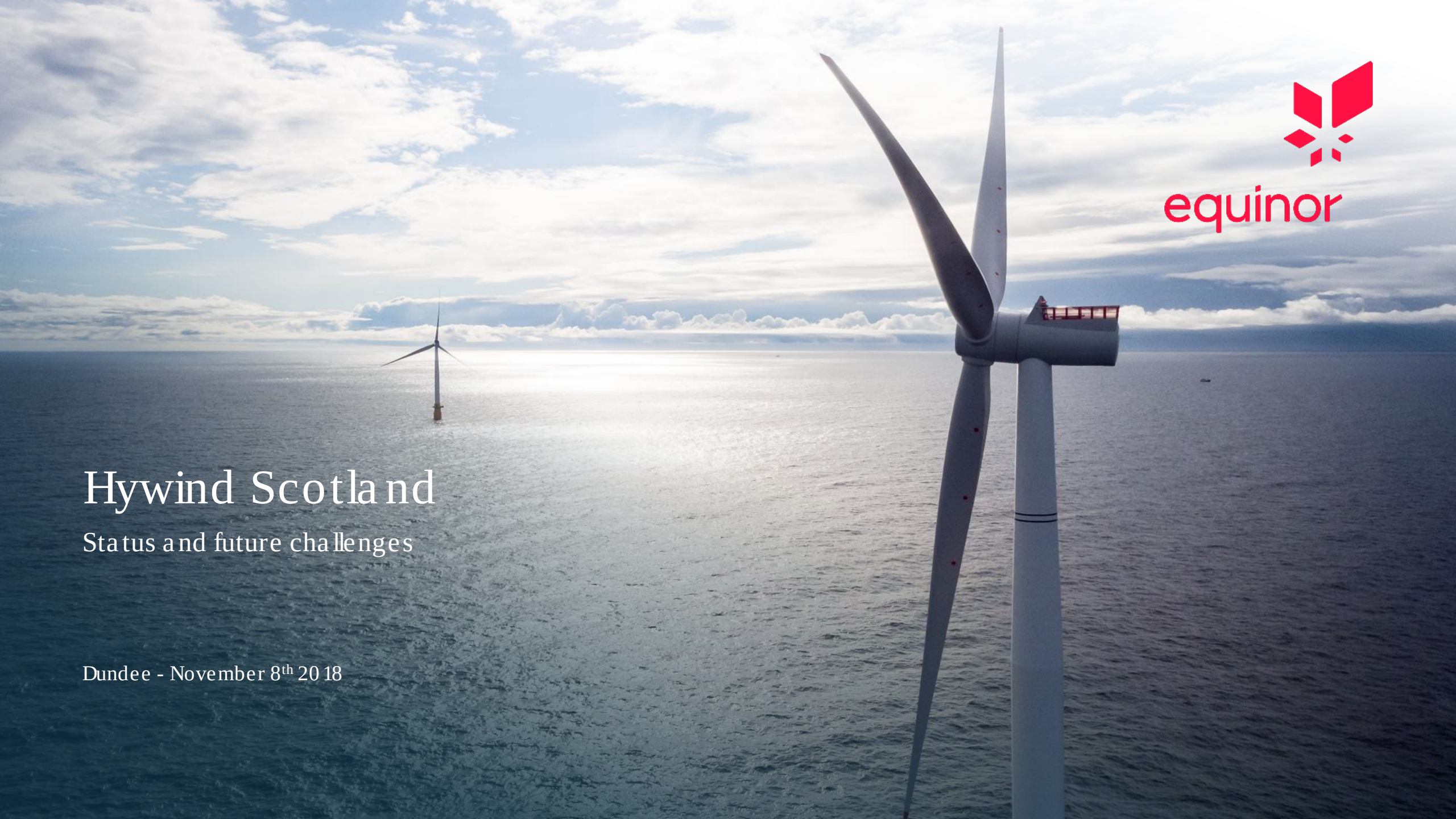


Hywind Scotland

Status and future challenges

Dundee - November 8th 2018

We are Equinor

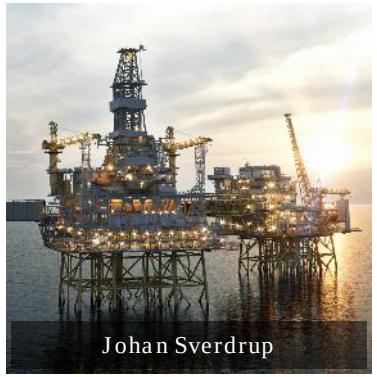
Turning natural resources into
energy for people and progress for society

Competitive at all times

Transforming the oil and gas industry

Providing energy for a low carbon future

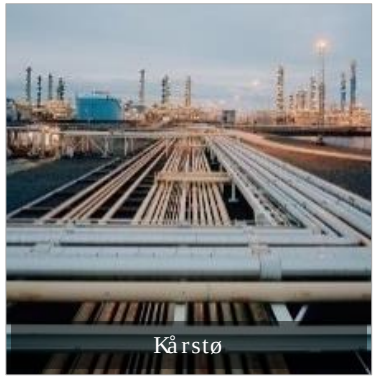
New Energy Solutions at the core of Equinor´s strategy


Johan Sverdrup

Norwegian continental shelf

Build on unique position

- Highly cost competitive
- Attractive project pipeline
- Exploration potential


Kårstø

Midstream and marketing

Access premium markets

- Flow assurance
- Asset backed trading
- Capital light

Always safe
High value
Low carbon

International oil&gas

Deepen core areas

- Enhance Brazil portfolio
- Flexible US position
- New growth options


US onshore

New energy solutions

Industrial approach

- Offshore wind
- Low-carbon solutions
- Ventures, R&D


Offshore wind

Building a profitable offshore wind portfolio

Hywind demo	Hywind Scotland	Batwind
In production	In production	In development
2.3 MW	30 MW	1 MW

Floating

Bottom fixed

Sheringham Shoal	Dudgeon	Arkona
In production	In production	In development
316 MW	402 MW	385 MW

Expanding within offshore wind[1]

Bottom fixed

Doggerbank
UK
3.6 GW

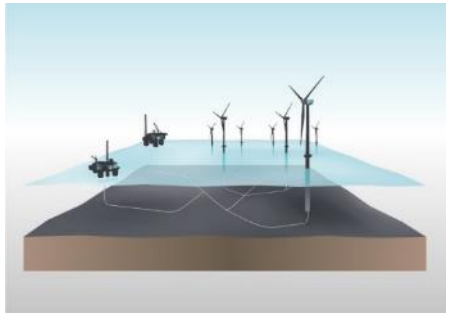
Empire Wind
USA
1-2 GW

Baltyk II & III
Poland
1.2 GW

Floating wind to oil and gas installations
Norway
100 MW

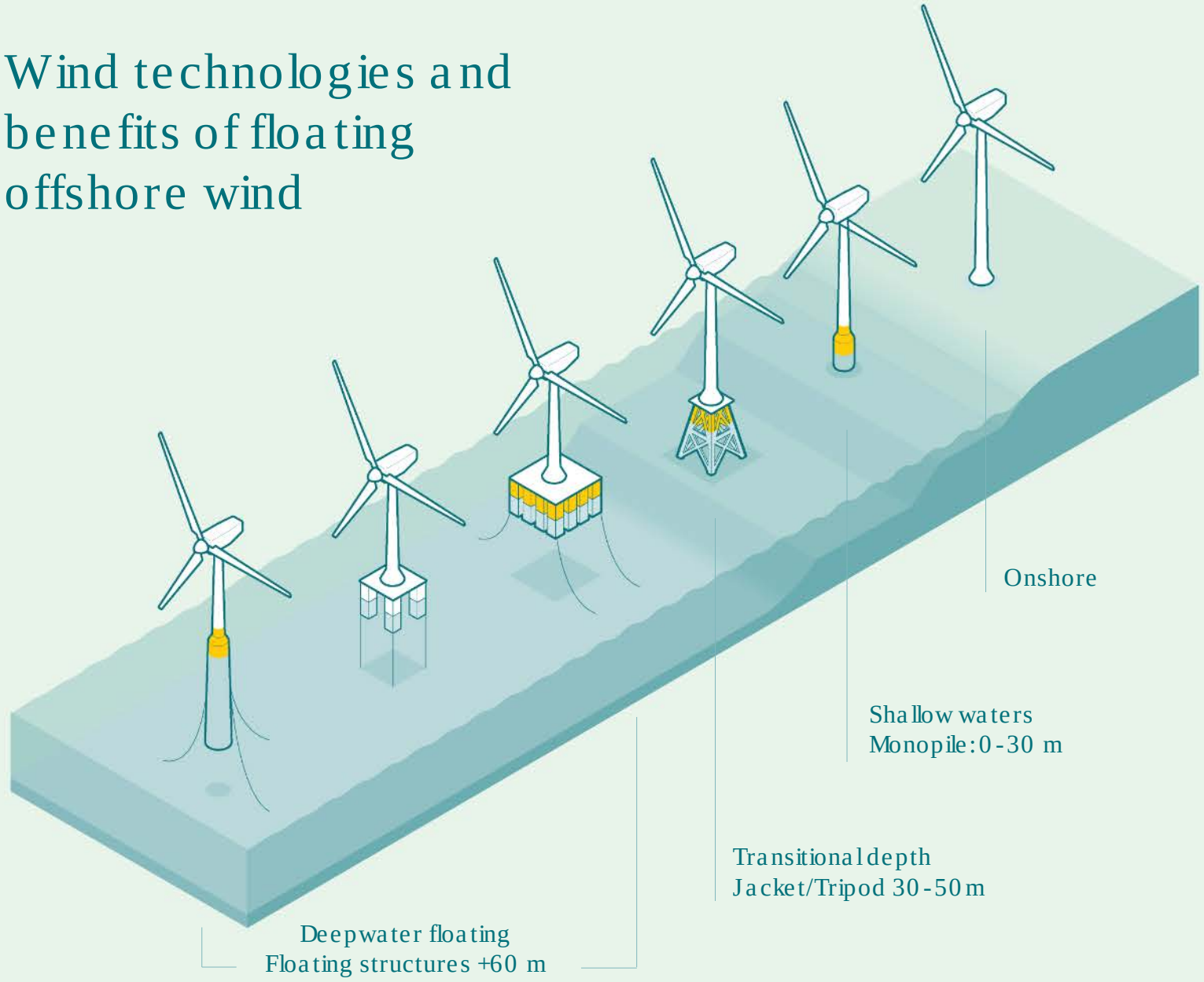
Expanding global position
UK/Ireland, France,
US West Coast, Japan

Floating



1. Figures: Installed capacity, 100% basis.

Wind technologies and benefits of floating offshore wind



Resources

Deeper, farther from shore
Site flexibility
Space availability

Jobs

Domestic and export industrial opportunities
Regional developments
Build on O&G

Economics

High capacity factor
Higher scalability?
Standardisation potential

New applications

Electricity to population centers
Power industry and O&G
Recycle marine spaces

Hywind Scotland experience

Safety

Zero
HSE incidents

Performance

Dynamic performance – within design parameters

Capacity factor - above industry average

Performance availability - above budget and industry average

Improvements

Testing of
advanced motion
controllers

Integration with
battery storage

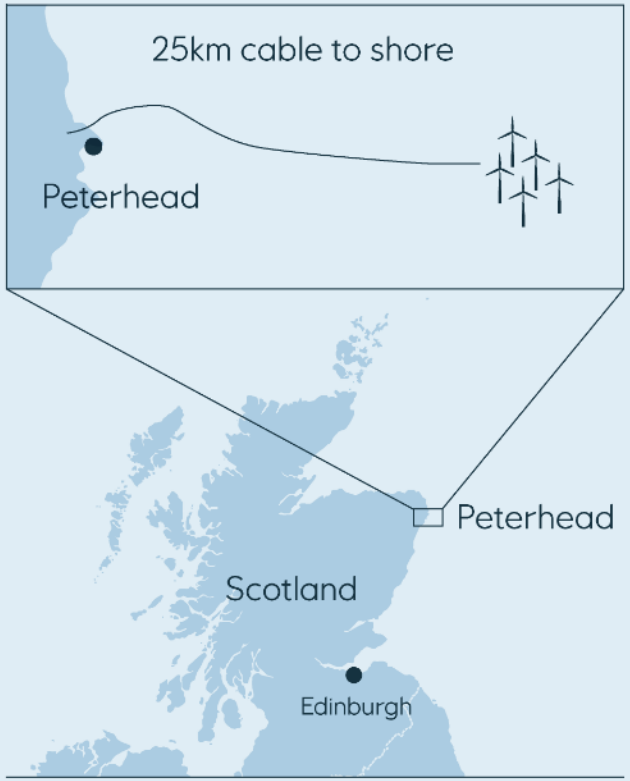
Hywind Scotland

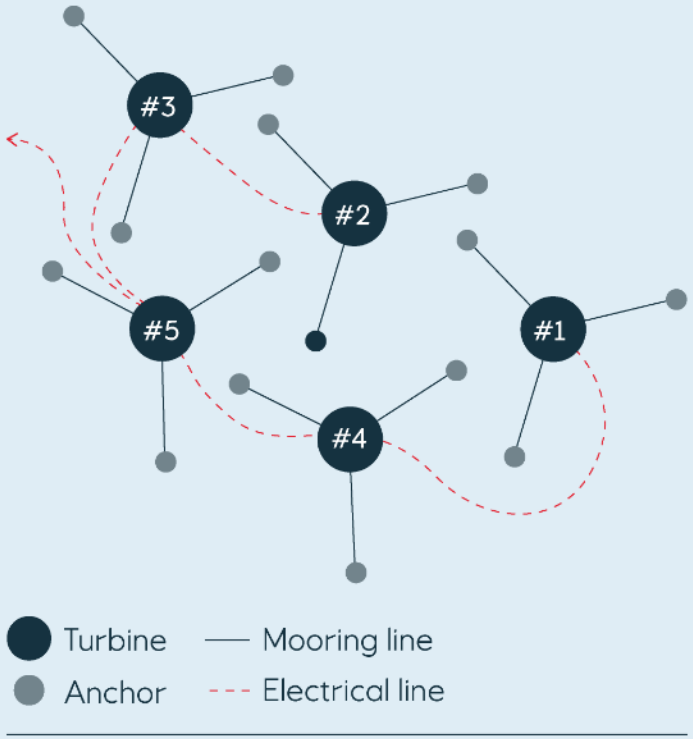
Installed capacity of park

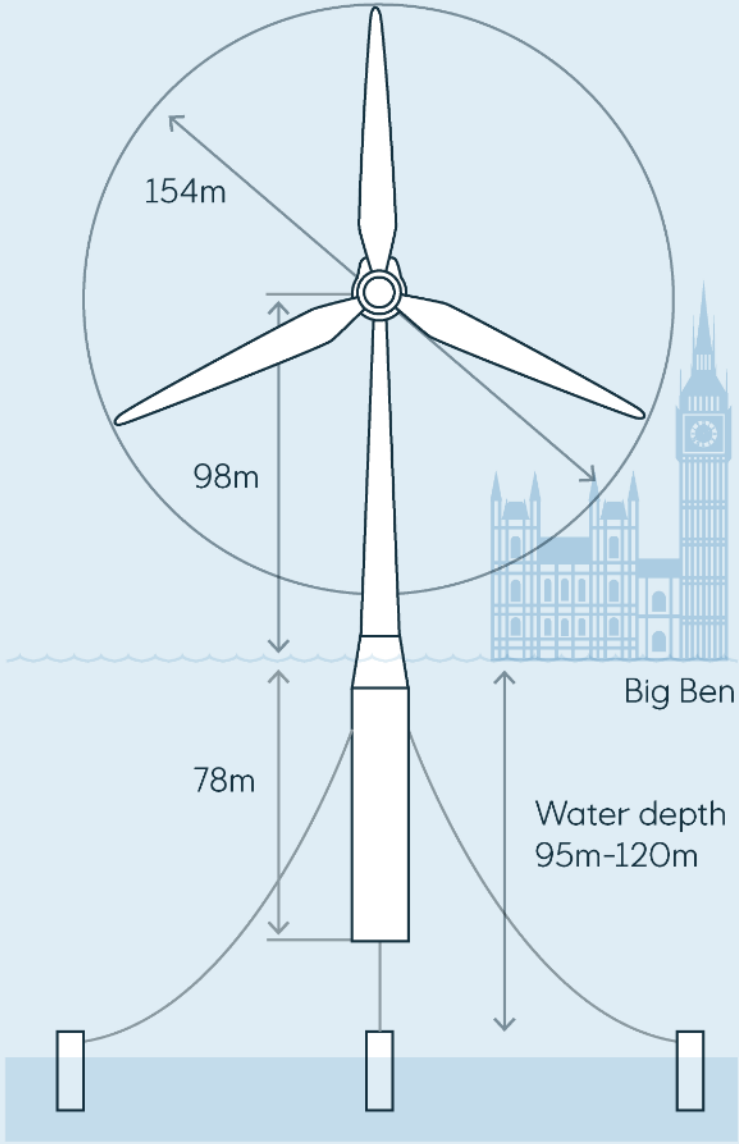
30 MW

Which is enough to power

20 000 homes

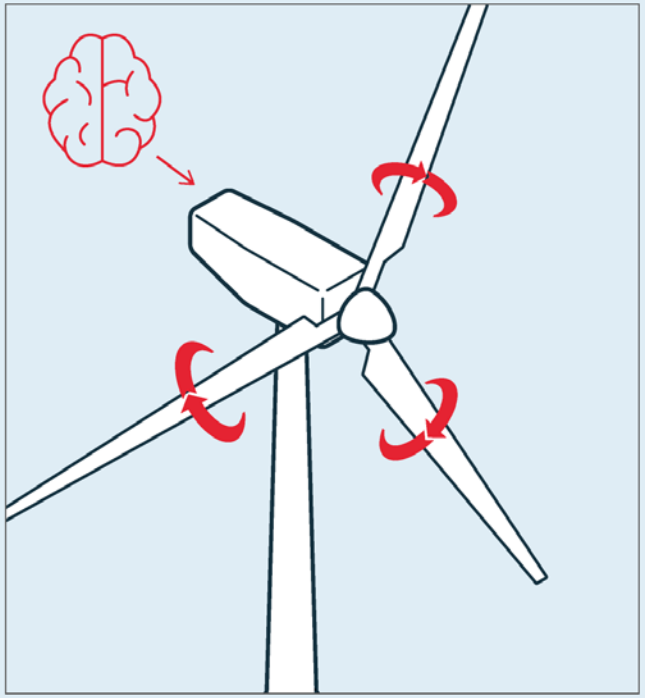


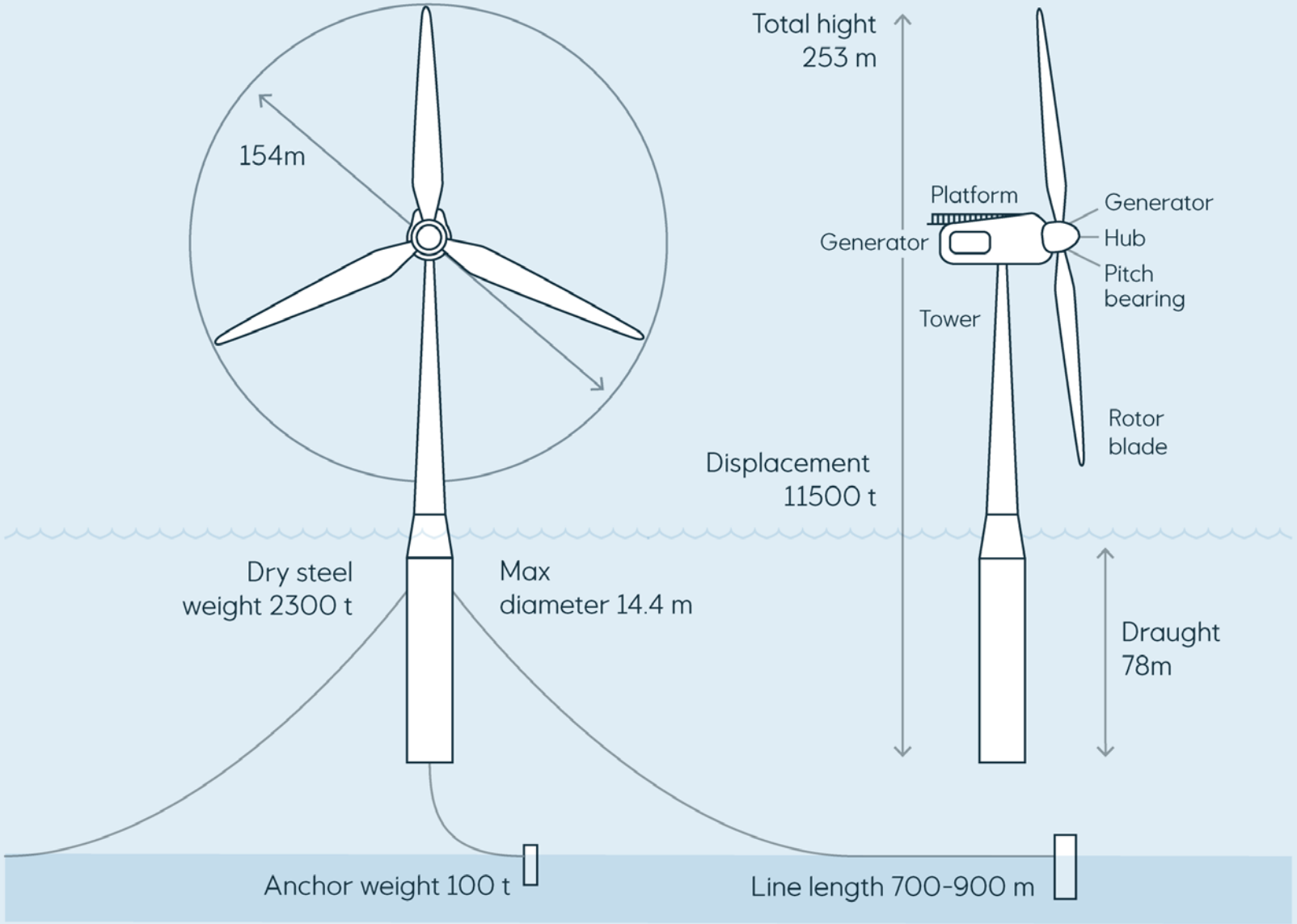




Hywind concept / Hywind in numbers

Floater motion control system

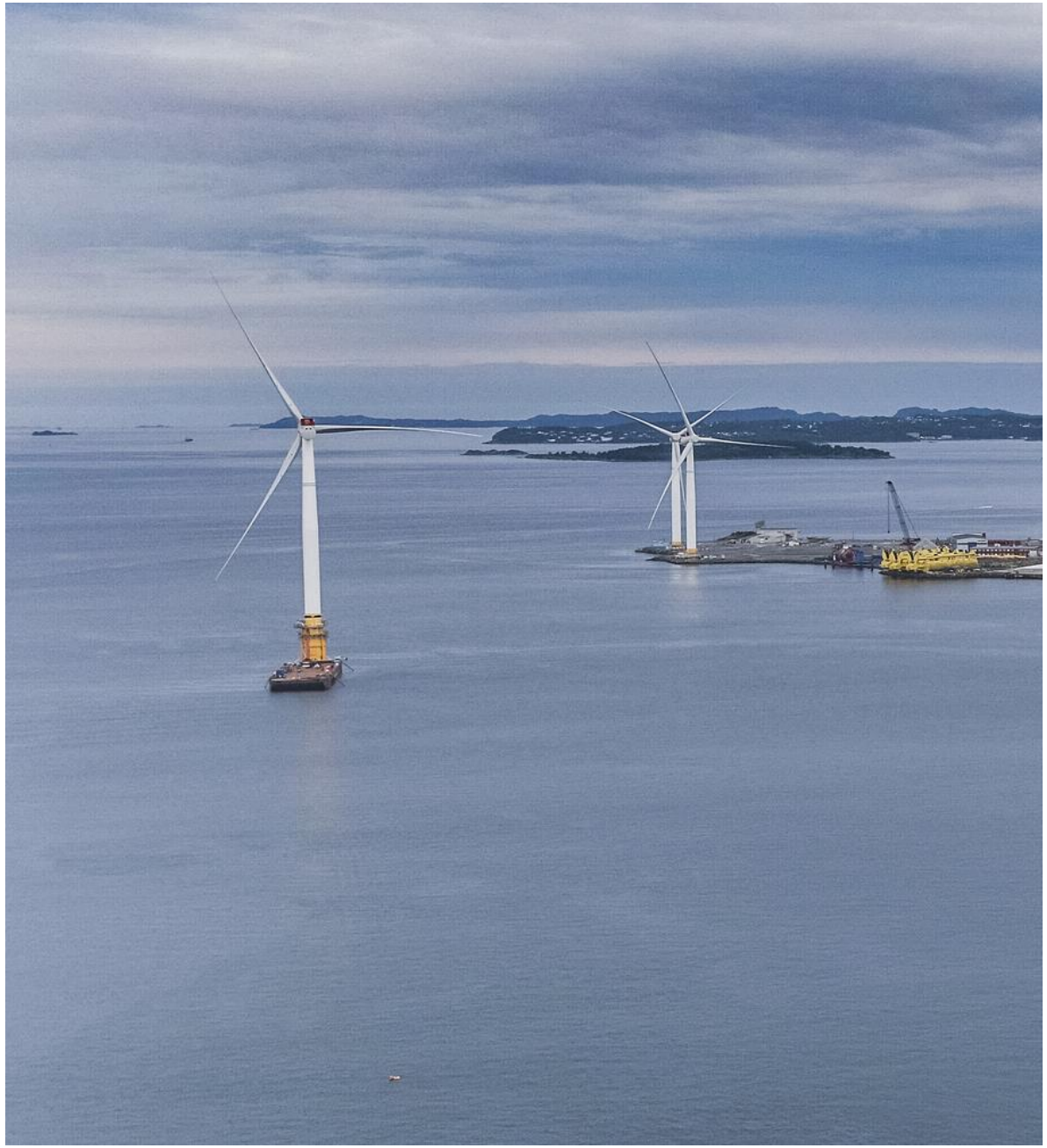





ADVANTEC


HS
4

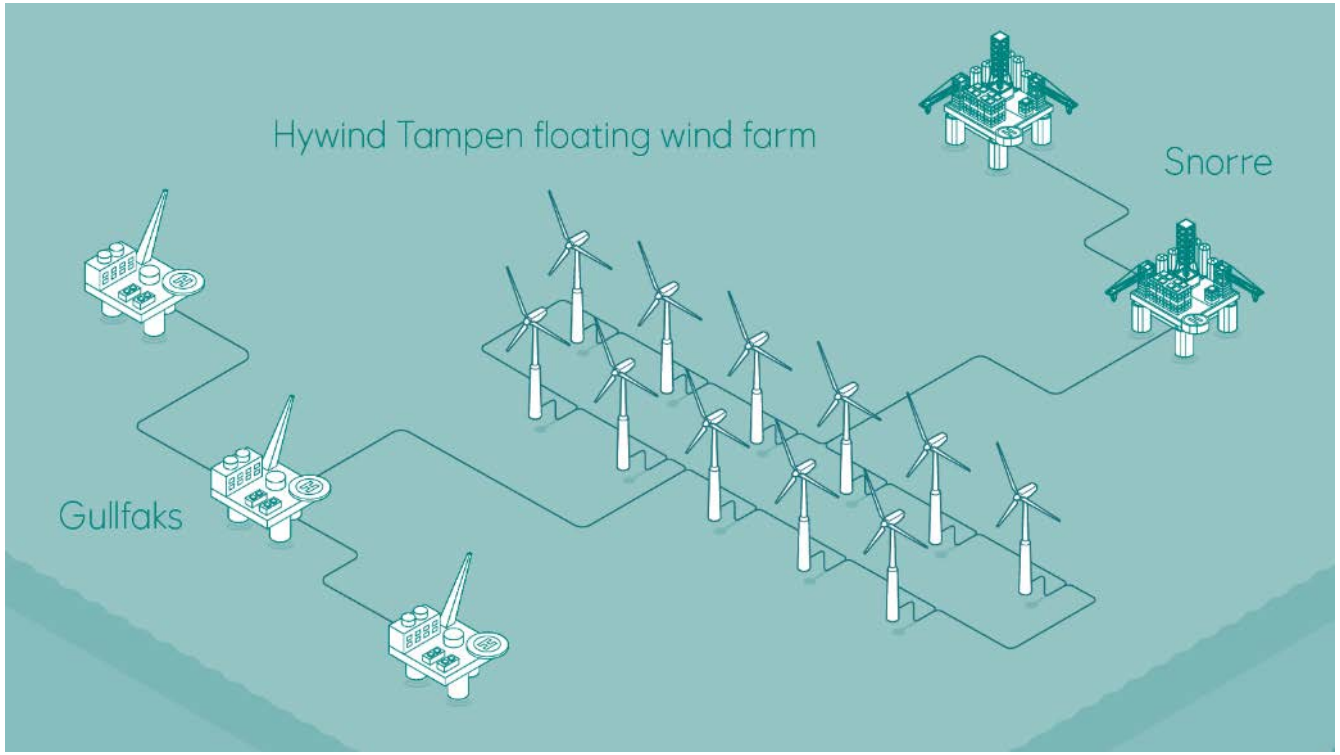

SAIPEM
7000



Operational Experience

- Project delivered on time and without serious incidents
- Successful commissioning and start-up
- Opening in Scotland 18.10
- Initial teething issues
- Challenging weather conditions
- Handover to operations 15.11
- In normal production by year end
- Production and performance significantly exceeding expectations

Hywind Tampen – offshore wind farm in the North Sea



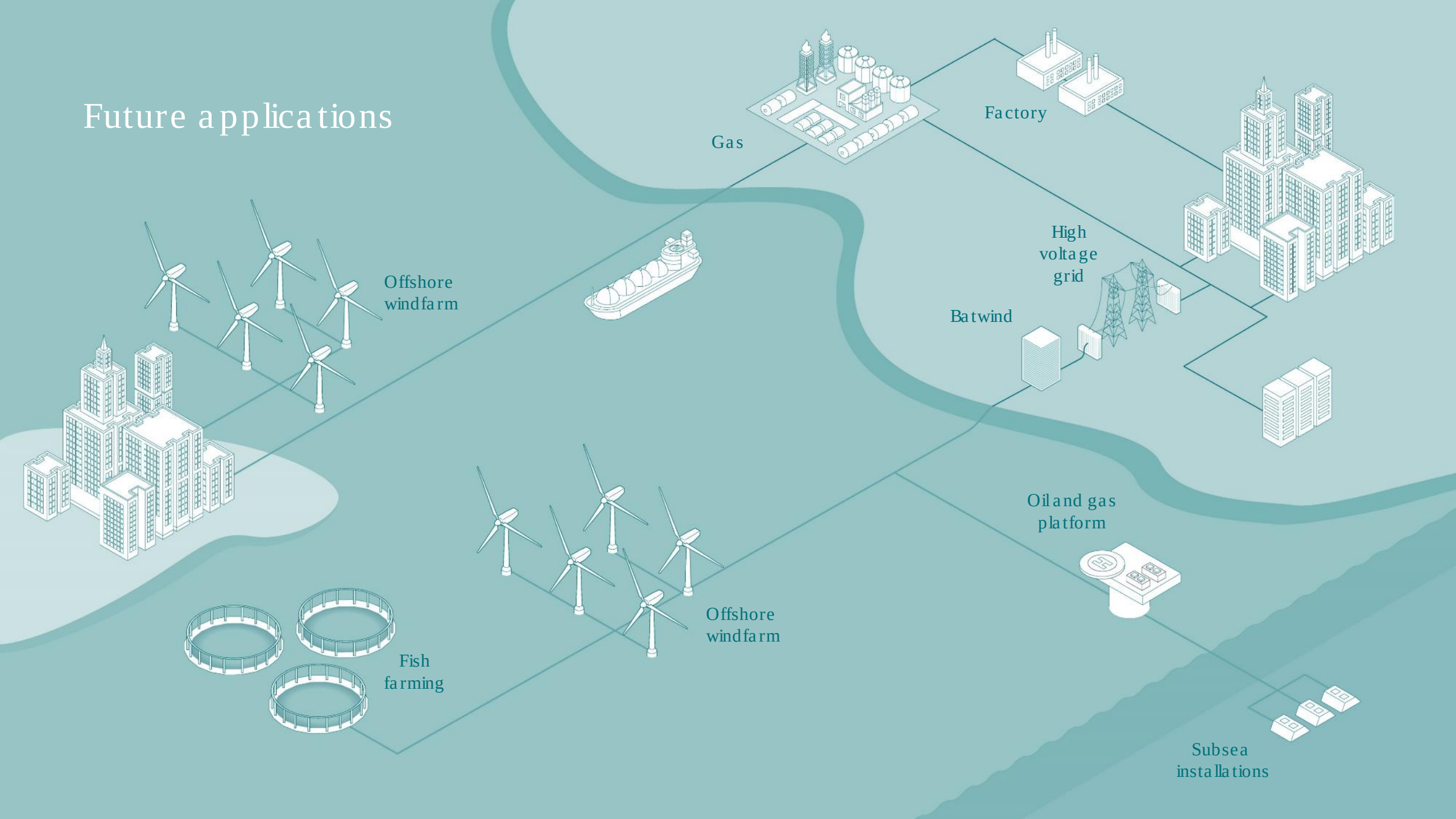
11 wind turbines between Snorre and Gullfaks

Combined capacity of 88MW

Concrete substructures and shared anchors

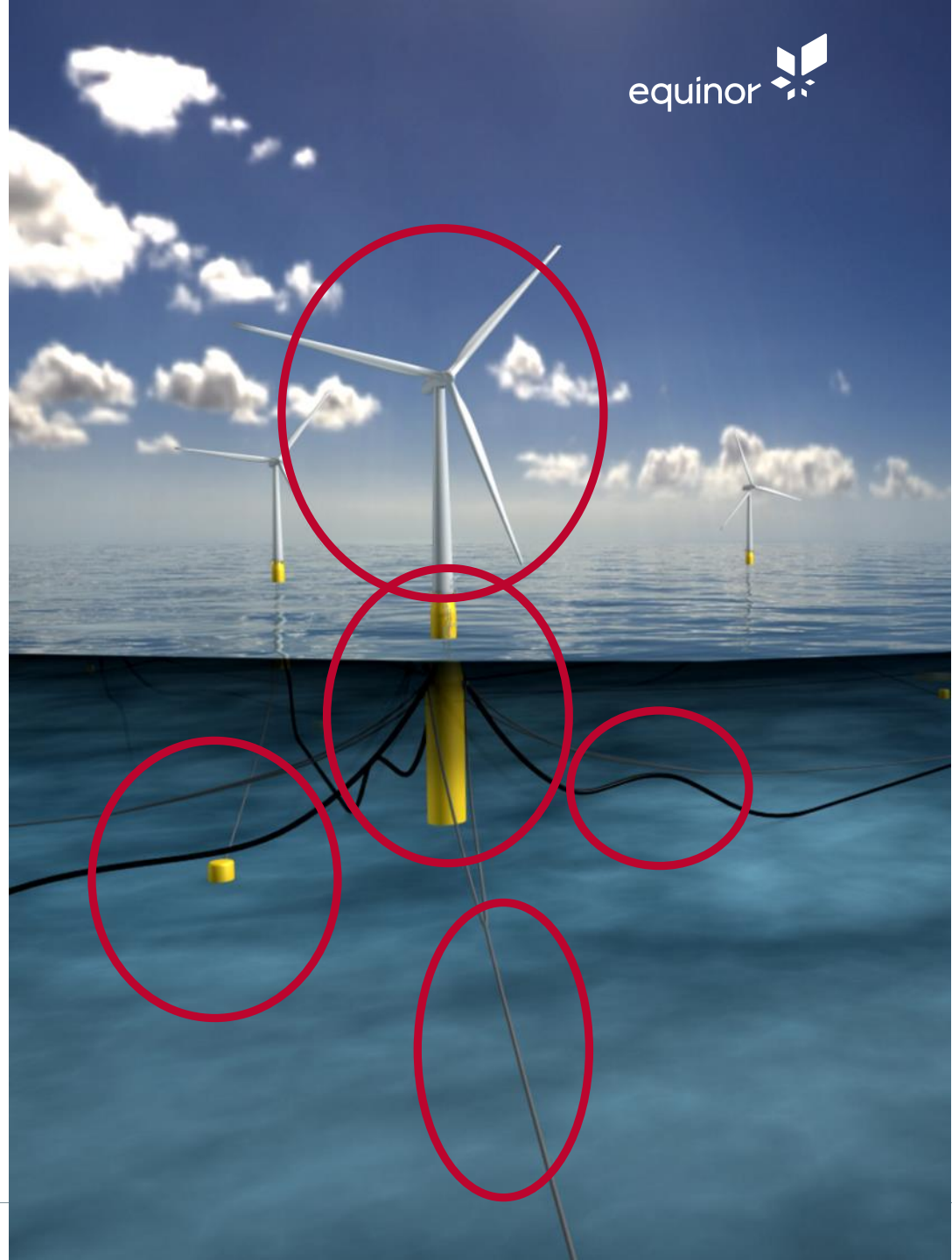
Considerable CO2 emission reductions

Future applications



Recap - Any challenges?

- Market – Need to match cost level of other energy generation technologies
  - Project pipeline
  - Larger projects
- Technical – Improve and develop all parts of the industry to improve competitiveness of floating offshore wind
  - Wind Turbine Generator
  - Substructure
  - Mooring system
  - Anchors
  - Dynamic cables and export system



Floating Offshore Wind Centre of Excellence

- Promote floating offshore wind
- Engage with supply chain
- Capture and disseminate experience from ongoing projects
- Establish a point of contact for research and development activities