Floating WIND

A BOOMING OPPORTUNITY

Knut Erik Steen, Director Wind
A brief energy history
Accelerated growth

Installed capacity up 24% annually to reach 85 GW in 2024

- 20% to 61 GW in 2023 (2018 report)
- 16% to 46.4 GW in 2022 (2017 report)
Accelerated growth in Asia and the US
2050 vision:
450 GW
OF OFFSHORE WIND

Atlantic Ocean
North Sea
Baltic Sea

85 GW
83 GW
70 GW

BVG associates
Looking ahead

Source: IRENA, 2018b, 2018c
Floating Wind

• Increased Floating Wind activity globally
• Several different concepts
• Less focus on additional concepts
• Floating Wind is a focus area within EU
• Key Markets
  • **France** will seek bids for floating projects in the Mediterranean for 250 MW projects. Based on the very attractive bids received for Dunkirk which has led to France increasing their ambition for offshore wind
  • **Korea** where Shell, Equinor, PPI and others have announced interest in developing 3x400 MW project
  • **Westcoast of the USA** where Principle Power are in early stages with their 150MW project considered to in a «pre commercial « phase
  • **Japan**
  • **Scotland, Ireland** and **Spain** with emerging activity, small scale at this time
  • **Canary Island** has one 200MW project
Turning merchant

Levelized Cost of Energy (LCOE) to approach USD 50 /MWh by 2030

- Innovations and volume
- Auctions
- Turbine size and capacity
- Supply chain maturity
- Favorable financing terms

Source: US DOE, 2018 Offshore Wind Market Report
The global perspective

• Offshore wind has emerged as an important part of the electricity mix
• A number of recent auctions have been won with zero-subsidy
• Experienced European developers, engineers and supply chain firms are the driving force
Technical similarities Offshore O&G and Offshore Wind

turbine – dynamics summary

Rain Flow Matrix

Offshore Wind – A Booming Opportunity for Oil & Gas
Digitalization

- Digital twins
- Advanced simulation and training
- Marine operations
- Condition monitoring
Trends – size matters

• Higher and Heavier
• 10-15-20 MW?
• More exposed
• Further offshore
• Deeper and Floating
• Digitalization
• O&M big opportunity
Global market share

Top 20 global owners (excl. China) based on
- pipeline of projects in operation
- under construction
- post-FID
- with consent approved
- consent applied for and
- under development
Contracting strategy

Multi contracting ↔ EPCI contracting
Implications of a fully integrated energy market

Energy should flow freely across the EU - without any technical or regulatory barriers. Only then can energy providers freely compete and provide the best energy prices, and can Europe fully achieve its renewable energy potential.

The EU Commission
The Innovation Fund is one of the world’s largest funding programmes for demonstration of innovative low-carbon technologies. 

**INNOVATION FUND**

Driving clean innovative technologies towards the market

- First call for projects in 2020
- €10 billion to invest up to 2030 in EU's climate neutral future
- Avoid emissions and boost competitiveness

Supporting innovation in:

- Energy intensive industries
- Renewables
- Energy storage
- Carbon capture, use and storage

Funded by: EU Emissions Trading System
“There will be huge demand for new innovative offshore solutions and expertise with a global reach as offshore wind is expanding into new markets.”

Major developer
Thank you!

Solutions for global energy needs