Floating Wind for the Petroleum Industry

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Science Meets Industry
Bergen, October 25 2022
Mission:
Accelerating Floating Offshore Wind
Odfjell Drilling – from pioneers in MODUs to pioneers in MOWUs

Bergen Rig

Deepsea Driller

Deepsea Bergen

Deepsea Atlantic

Deepsea Semi™
From electrifying oil and gas installations to permanent floating wind parks

**Short term**

Exploit near term opportunity of O&G decarbonisation

Relevant services:
Rental MOWUs incl. op’s & maintenance

**Longer term**

A perfect partner for floating wind farm developers

Relevant services:
FOWU design, (supply chain), op’s & maint.
Electrifying “off grid” oil and gas installations with offshore wind

**The WindGrid™ hybrid power module**

- Uninterrupted power supply from wind power to oil and gas installations
- A combination of hybrid technologies
- Key to increase emission cuts from 35% to up to 70%

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MOWU technologies

Tower and turbine from Siemens Gamesa:
15 MW (from 2026)

Access from CTV, OSV or helicopter (optional)

Integrated power module (optional)
- WindGrid™ (off grid oil&gas)

Deepsea Semi™ harsh environment, moored, steel semisubmersible

Note: Deepsea Semi™ hull shape for illustration only
Multi-locational, standardised design

The MOWU can be deployed in the harshest of environments

► Environmental design
  ► Designed for harsh environments
  ► Class covering the North-, Norwegian and Barents Seas
  ► Multi-locational – can be redeployed to new locations

► Mooring
  ► 3 or 6 point mooring system depending on application
  ► Combination of chains and fibre rope
  ► Generic mooring designs completed for water depths 60 – 1100+ meter
  ► Drag embedment or suction anchors

Figure 4: Map of 50-year RVE of significant wave height (Hs). Corresponding peak period (Tp). [5]
## Deepsea Semi™ Hull Design – Historical timeline

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- **AiP**: Approval in principle
- **ILA**: Integrated load analysis
- **MSA**: Main Scantling Approval

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The WindGrid™ Module

Highlights

- Function: seamless integration with gas turbine generators in offgrid mode
- The Power Module secures power distribution, grid stability and energy storage
- Main components:
  - Battery modules (energy storage)
  - Converters (energy control to/from batteries)
  - Transformers (secure correct voltage level)
  - Switchgear (power distribution)
- The Power Module is developed in cooperation with Siemens Energy
- The functionality of the system has been verified by independent third party (DNV)
- Design status: mature, ready for detail engineering
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