

HVDC as the Backbone of Offshore Wind Expansion in the North Sea

Key Trends in the HVDC Market

- Offshore wind will drive HVDC deployment in the North Sea, with the UK, Germany, and the Netherlands leading the way, supported by the EU's target of 60 GW of offshore wind by 2030. Collaborative efforts under the North Sea Energy Cooperation aim for a combined capacity of 120 GW by the same year.

Integrating North Sea Offshore Wind into Europe's Grid

The UK, Germany, and the Netherlands to Drive Offshore Wind HVDC Expansion in the North Sea

Leading countries in North Sea w.r.t offshore wind adoption by 2030



Germany: 30 GW



UK: 50 GW



Netherlands: 21 GW

Factors Driving Increasing Investment in Offshore Wind Transmission through HVDC in the North Sea

- The European Union targeted 60 gigawatts (GW) of offshore wind capacity by 2030.
- The North Sea Energy Cooperation (NSEC) countries have ambitious goals. By 2030, they want to have a combined capacity of 120 GW of offshore wind.
- Synergy between offshore oil and gas extraction and HVDC technology in Europe facilitates efficient energy transmission from remote offshore sites to onshore grids. The massive Dogger Bank project in the North Sea is already reaping the rewards of its alignment with the offshore oil supply chain.
- Hitachi Energy has recently unveiled a USD 14 billion (EUR 13 billion) deal with TenneT to enhance offshore wind capacity in the North Sea.
- Offshore wind HVDC interconnection's typical generation capacity is reaching 2GW, a standard set by TenneT for its planned projects in Germany and the Netherlands.

37 GW

Announced HVDC Offshore Wind Projects in the North Sea by 2030

Major Pipeline Offshore Wind Projects in the North Sea by 2030

