

Press release

Munich, January 27, 2021

Odfjell Drilling rigs to feature Siemens Energy BlueDrive DC-Grid technology to minimize emissions

- BlueDrive DC Grid technology will help Odfjell Drilling minimize rig emissions, enabling customers to meet their long-term emission reduction targets
- BlueDrive DC Grid technology is the first of its kind to be installed on an offshore drilling rig
- BlueDrive DC Grid technology is a transformative approach to energy distribution for drilling

Odfjell Drilling will retrofit its newest deepwater, semi-submersible drilling rigs in the North Sea's Norwegian sector with the Siemens Energy BlueDrive DC-Grid system. The upgrades will be carried out on *Deepsea Atlantic* and *Deepsea Nordkapp*, with the opportunity to include *Deepsea Stavanger*, *Deepsea Aberdeen*, and *Deepsea Yantai* at a later stage.

With these upgrades, the rigs will push the boundaries for conventionally powered offshore rigs and set a new technological standard in Odfjell Drilling's strategy towards zero-emission drilling.

"These projects are the result of asking a simple yet challenging question: 'What would be the most efficient technological approach to minimize emissions from a rig in the short term?' The resulting ideas were very well received by Odfjell Drilling's customers and will contribute to their long-term emission targets, so this is business and low-emission targets working hand-in-hand," said Per Lund, Chief Technology Officer and Executive Vice President, Technology & Sustainability, Odfjell Drilling.

"Our agreement with Odfjell Drilling affirms our ability to understand and deliver complete, innovative, and cutting-edge solutions in line with our customers' expectations, which include design, engineering services, interfacing with third parties and fabrication of state-of-the-art power electronics, as well as financial advice and support," said Jennifer Hooper, Senior Vice President, Industrial Applications Solutions for Siemens Energy.

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BlueDrive DC-Grid technology

Siemens Energy's BlueDrive DC-Grid technology was developed and refined over many years to meet the offshore industry's demanding energy distribution requirements, especially for propulsion and drilling systems. It is an efficient, environmentally friendly solution that provides high levels of reliability, availability, and ease of service, with low emissions.

The Siemens Energy BlueDrive DC-Grid solution consists of DC/DC converters connected to the existing four drilling drive DC buses from one side and to DC/DC converters connected to energy-storage systems. This allows platform operators to conduct peak shaving of drilling loads, so fewer generator sets can run at higher and steadier loads — reducing fuel consumption and carbon emissions, improving sustainability, and minimizing a rig's carbon footprint. Further, the solution will increase the power plant's reliability by reducing blackouts, which will prevent downtime and boost asset utilization.

In drilling applications, the Siemens Energy BlueDrive system will be an integral part of the entire drilling process, enhancing the drill string's performance when applying high torque during drilling operations.

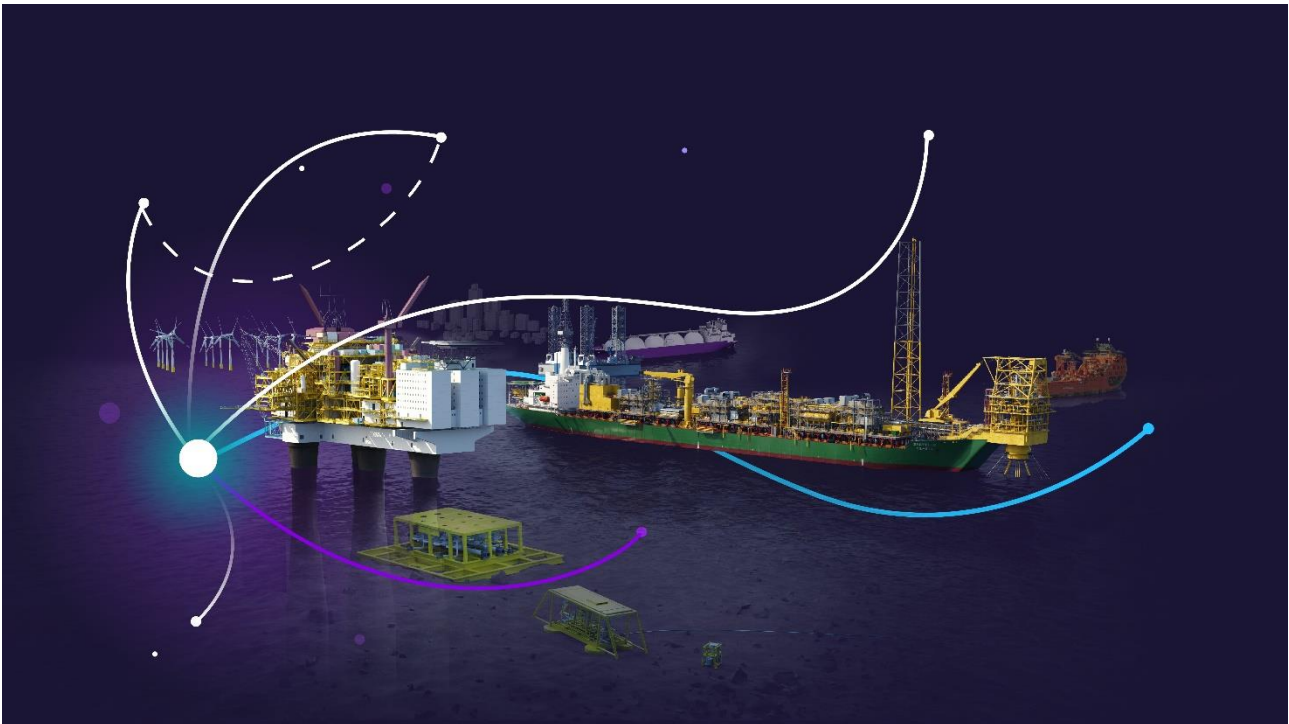
The best quality of technology was a must. Also, the Siemens Energy BlueDrive DC Grid system meets the five focus areas (E-RAMS) of the offshore industry:

- **Environmentally friendly**, lowering carbon footprint
- **Reliable solution** with a high return on investment (ROI)
- **Available power supply** with no blackouts
- **Maintenance predictable** and at a low cost
- **Safe operations** are supporting zero-harm goals.

The scope awarded to Siemens Energy results from several months of technical and operational clarifications to ensure the rigs' optimal functional profile.

The long-term relationship and technology cooperation between Odfjell Drilling and Siemens Energy also includes several R&D initiatives related to power from shore or nearby platforms and floating offshore windmills to fixed platforms or rigs.

These solutions will complement the Siemens Energy DC Grid and BlueVault battery solution system and provide customers with holistic approaches to solving their power challenges that Siemens Energy can deliver entirely.



Above: Siemens Energy's BlueDrive DC-Grid technology is an efficient, environmentally friendly solution that provides high levels of reliability, availability, and ease of service, with low emissions.

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Siemens Energy is one of the world's leading energy technology companies. The company works with its customers and partners on energy systems for the future, thus supporting the transition to a more sustainable world. With its portfolio of products, solutions and services, Siemens Energy covers almost the entire energy value chain – from power generation and transmission to storage. The portfolio includes conventional and renewable energy technology, such as gas and steam turbines, hybrid power plants operated with hydrogen, and power generators and transformers. More than 50 percent of the portfolio has already been decarbonized. A majority stake in the listed company Siemens Gamesa Renewable Energy (SGRE) makes Siemens Energy a global market leader for renewable energies. An estimated one-sixth of the electricity generated worldwide is based on technologies from Siemens Energy. Siemens Energy employs more than 90,000 people worldwide in more than 90 countries and generated revenue of around €27.5 billion in fiscal year 2020. www.siemens-energy.com.