# Shell develops high-performance lubricant for wind energy industry

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*Making wind turbines more efficient and reducing their operating costs is crucial to make them more profitable. Oil giant Shell has developed a lubrication plan and tailored its products and services to optimize the efficiency of wind farms.*

Oil multinational Shell has developed an innovative synthetic lubricant for wind turbine gearboxes, called Shell Omala S5 Wind 320, specially aimed at the growing market for wind energy in cold climates.

The wind energy industry is one of the most dynamic sectors operating today. The requirements imposed on wind turbines are growing ever more stringent, demanding specific hardware and maintenance to guarantee reliable and safe operation, even under extreme conditions and in remote locations. Lubricants play a critical role in the lifetime and yield of wind turbines. Today, operations under extreme conditions, such as cold climates and offshore applications, are the new standard and the turbine gear is exposed to even more challenging conditions. The proper use of the right lubricant can significantly enhance usability and the lifetime of the hardware, while reducing the total cost of ownership of a turbine.

## Perfectly imitating reality

The new lubricant for gearboxes was specially developed to provide high performance levels at low temperatures. A lot of work was needed to ensure the oil had the right properties and to allow it to generate added value in the demanding cold-climate wind-turbine market segment. Wanting to test the product under controlled, real-life conditions – so to be absolutely sure that it would work properly at low temperatures – the company used the climatic chamber of the OWI Lab in Antwerp.

The oil was tested on the special R&D wind turbine gearbox at the lab. By installing it on a special no-load test bench, the various start-up procedures were tested. Even under the most extreme operating conditions, including cold temperatures going down to -40°C, the tests demonstrated excellent lubricating properties. In addition, these results were compared to the results of tests with standard lubricants: this showed a shorter 'time to grid' due to the improved viscosity, a reduced component load in the start-up cycle, better protection of the plant due to a 63% improvement in oil flow, and excellent filter performance even at the lowest temperatures.

You can learn more about the product and the tests in the following movie:

## Authors



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