

MEETING THE CHALLENGES OF WIND TURBINE LUBRICATION

CASTROL PRODUCTS AND SERVICES FOR WIND POWER PROVIDERS



After the initial purchase of the turbine, Operation and Maintenance (O&M) costs represent your largest financial outlay and you have to balance the need for reliable, productive uptime with very real commercial objectives to contain costs.

YOUR KEY NEEDS AND CHALLENGES

Based on Castrol's partnership with other O&M Managers globally, and from our own experience with BP's wind farms, we found that major component failures cause significant issues in the operation of wind farms. This has an impact on budgets, turbine availability, and overall asset cost efficiency.

Although designed to last 20-25 years, industry experience has shown that gearboxes are actually lasting for much shorter periods. Directly related to this, long term research and studies have found that gearbox failure is the leading cause of turbine downtime at between 20-25% throughout the life of a turbine. Also, we understand that gearbox downtime and repairs can be expensive costing sometimes up to \$10,000 a week.

What many do not realise is that these failures are caused by the way most turbines are maintained, with issues often developing from the early days of operation.

HOW DOES CASTROL HELP?

Castrol's Liquid Engineers enable you to take advantage of our experience and expertise in providing lubricants to the wind turbine industry. After all, we have over three decades experience of working with turbine manufacturers and on thousands of turbines around the world and, as part of BP, we also operate a number of wind turbines. We can apply this expertise to help address the challenges your business is facing.

To complement our experience and expertise, Castrol offers a combination of specialised products and support services. Our products come with a vast range of OEM approvals to give you peace of mind of their effectiveness in helping to optimise performance.

OUR OFFER TO YOU

Selecting Castrol as your post-warranty lubricant partner can benefit your operations in several ways. Whether you are an **O&M Manager**, **Asset Manager** or **Procurement Manager** we can work with you and help you achieve the potential value and return on your asset investment through:

- **Global products and OEM approvals** - Lubricant products and application capability which can be enhanced and supported through our shared technical knowledge, global OEM approvals* and customer references
- **Used Oil Analysis programs** - Used Oil Analysis services program to help you pro-actively monitor the performance of your assets and identify potential problems before they impact productivity
- **Flushing procedure guidance and support** - Joint programs for successful gear oils switch with a flushing guidance document
- **Filter analysis services** - Filter analysis service to help you better understand contaminants, if any, and overall support to help maximise output
- **Capability building support programs** - Support to build your team's capability through conducting joint programs which will help to further strengthen existing capabilities, be updated on latest trends globally through best practice sharing.
- **High Technology Products** - High quality including the pre-filtered* gear oil products developed in our technology centres and produced at our global plants.
- **Global Logistics Support** - Logistics support helping to reduce holding in inventory with product consolidation opportunities.

*Talk to your Castrol representative for more details.

The information and recommendations contained herein are based upon laboratory research, experience in the field and/or state-of-the-art procedures, and are believed to be accurate and reliable. However, they are provided as information only and in no way modify, amend, enlarge, or create any specification or warranty, and all warranties, express or implied, including without limitation the warranties of merchantability and fitness for a particular purpose, are excluded.

Further information about Castrol's range of products and services is available on the Castrol website and the Lubricant Oracle. Visit Castrol.com/windenergy.

IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.

