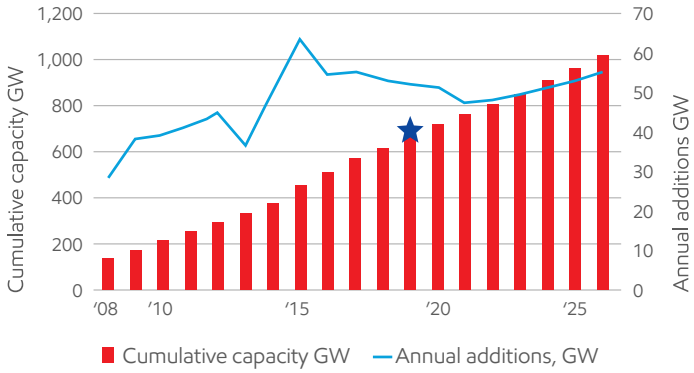
The growing wind lubricant market

Industry trends

The wind energy industry continues to evolve, creating new challenges and opportunities for lubricant manufacturers. The market is growing, creating more need for gear oils and greases, but customers are demanding higher performance.

The good news: Installed wind capacity is expected to double over the next 10 years.



The challenge: Finding suitable locations for wind turbine installations. Operators are forced to build in more remote areas and extreme conditions.

Meanwhile, reduction of wind power incentives minimizes margins for operators, who are looking for ways to cut costs and boost production.

Turbine size continues to grow, increasing power generation but also increasing gear box loads. Bigger blades, smaller gear boxes, lower sump volumes.

These industry trends impact wind turbine lubricants – creating higher stress and higher performance expectations.

Nearly 25% of wind farms installed in cold climates (as low as -40°C)*

Gear oil

Wind turbine gear oil market projected to grow at 5.8% to 27 kT by 2026

To meet their needs, wind operators demand:

- Better performance in extreme temperatures
- Longer drain intervals to minimize maintenance costs and difficulty
- Improved scuffing and micropitting resistance
- Improved shear stability
- Improved cleanliness

Grease

Wind turbine grease market is projected to grow at 5.6% to 16 kT by 2026

To meet their needs, wind operators demand:

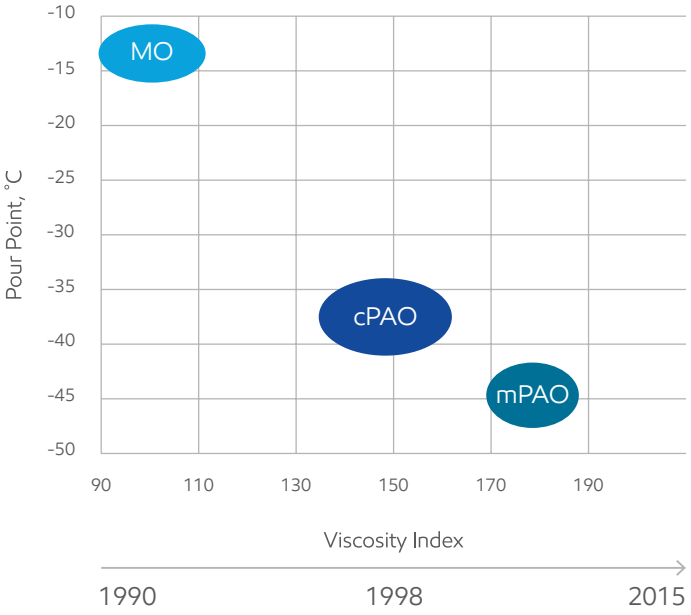
- Longer regreasing intervals
- Better performance in extreme conditions
- Improved protection for longer bearing life
- Improved pumpability and flow in lubrication systems
- Better protection against fretting wear, rust and corrosion
- Stronger resistance to water washout
- Better protection against pitch bearing false brinnelling

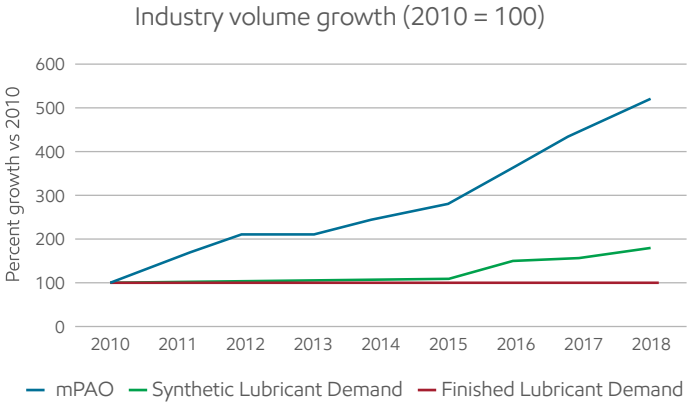
* Source: IEA Wind Task 19

Base stock solutions

As the wind industry has grown, lubricant manufacturers have moved from using mineral oil (MO) base stocks to conventional synthetic polyalphaolefin (cPAO) base stocks, which offer better performance capabilities. To meet increasing performance demands, especially in high-growth low-temperature climates, they're now moving to metallocene polyalphaolefin (mPAO).

+40% of the high-viscosity synthetic market has converted to mPAO.





Why the switch? The mPAO base stocks provide:

- Increased viscosity index
- Enhanced shear stability
- Exceptional low temperature performance
- Minimized foaming through improved fluidity and molecular design

By using mPAO synthetic base stocks, such as ExxonMobil Chemical's SpectraSyn Elite™, formulators can innovate next-generation lubricants that meet customers evolving demands. An mPAO base stock formulation can keep your gear oil or grease flowing whether in North Sea winters or at -38°C in East Mongolia. And you'll keep your customers happy.

©2019 ExxonMobil. ExxonMobil, the ExxonMobil logo, the interlocking "X" device and other product or service names used herein are trademarks of ExxonMobil, unless indicated otherwise. This document may not be distributed, displayed, copied or altered without ExxonMobil's prior written authorization. To the extent ExxonMobil authorizes distributing, displaying and/or copying of this document, the user may do so only if the document is unaltered and complete, including all of its headers, footers, disclaimers and other information. You may not copy this document to or reproduce it in whole or in part on a website. ExxonMobil does not guarantee the typical (or other) values. Any data included herein is based upon analysis of representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, freedom from patent infringement, suitability, accuracy, reliability, or completeness of this information or the products, materials or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. This document is not an endorsement of any non-ExxonMobil product or process, and we expressly disclaim any contrary implication. The terms "we," "our," "ExxonMobil Chemical" and "ExxonMobil" are each used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliate either directly or indirectly stewarded.