

# Bio-Degradable, Water-Based Lubricants to Spin Up Gear Applications

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With the advent of electric vehicles and strict regulations on 'zero emission fuels', the two-wheeler market is seeing robust sales over the last couple of years. The continuous proliferation of heavy investments in infrastructure projects for newer lubricant technologies is propelling the demand for two wheeler lubricants in Europe. Until now, the popularity of synthetic or mineral oils as lubricants in gear technology has been witnessed. This is all set to change with massive research efforts being championed and spearheaded towards the development of water based lubricants with

high suitability for gear drives. With water having excellent thermal conductivity and negligible friction, the benefits are myriad for the end user especially in the context of two wheeler lubricants. The bio-degradability of water based lubricants is very high which makes them an extremely viable and lucrative alternative to traditional fossil and synthetic lubricants. The use of water based lubes and other bio-lubes is all set to gather unprecedented momentum and likely to boost the growth of the two wheeler lubricant market in Europe and developing countries as well.

## Global Two Wheeler Lubricants Market Value Share (%)

### Key Trends

- ▶ Manufacturer-Dealer Collaboration for Distribution Network Optimization
- ▶ Increasing Investments in R&D for Quality Enhancement

**CAGR of ~4% (2019-2029)**

Market Value of **US\$ 21.8 Bn**  
by the end of 2029

### By Region

- North America
- Latin America
- Europe
- South Asia & Pacific
- East Asia
- Middle East & Africa



### By Product (South Asia & Pacific)

- Synthetic Oil
- Semi-Synthetic Oil
- Mineral Oil
- Bio-Based Lubricants
- Greases



### Key Players

- ▶ ExxonMobil Corporation
- ▶ Total S.A.
- ▶ Hindustan Petroleum Corporation Limited
- ▶ BP PLC
- ▶ Royal Dutch Shell plc
- ▶ Chevron Corporation

Source: Future Market Insights, 2019

Note: Market shares are not depicted as per the actual scale and are only for illustration purposes.

### Re-Greasing with 'additives' technology for enhanced productivity and output

Ground breaking research initiatives are also pointing to the use of 'Graphene' as a lubricant additive to enhance two-wheeler and automotive performance. Lubricant technology is the primary technology to resolve frictional wear and tear of automotive machinery and improve the serviceability of equipment. It has been seen that when graphene is used as a lubricant additive, lubricant performance goes through significant improvement. Graphene as an additive prevents direct contact between rough sliding services. Similarly, nanoparticles have made their entry into the automotive and two-wheeler industry as lubricant additives. Flake nanoparticle additives like graphene and graphene oxide are garnering global attention due to their enhanced anti-wear, mechanical and stable chemical properties.

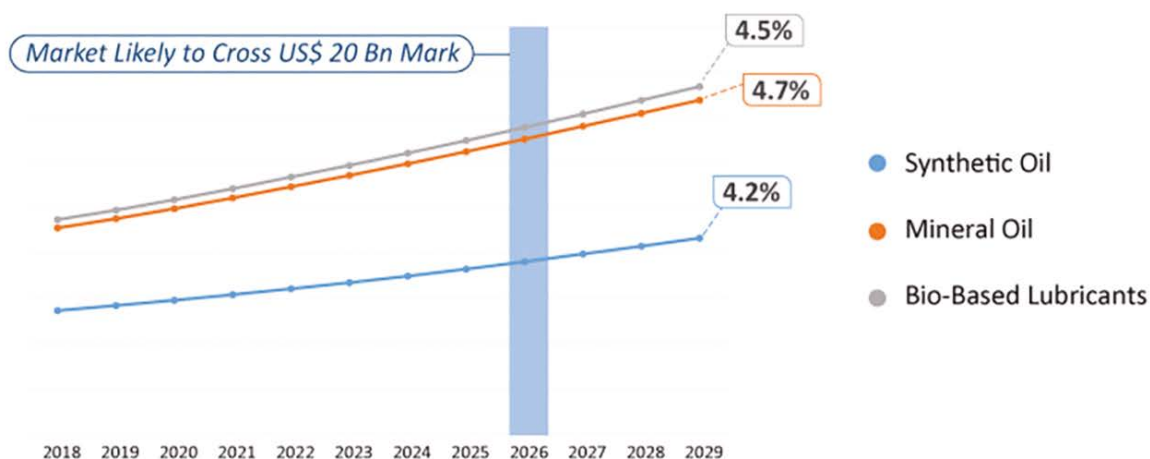
Copper nanoparticles are also being seen as an innovative additive for the next generation of lubricants. Nano-copper is particularly proficient in handling very high impact mechanical work. The relevance of Nano-copper due to its anti-friction properties are being seen as an astute strategy by key market players who are keen on exploiting its benefits. With the injection of evolving anti-wear, additive technologies, manufacturers can opt to invest here for better fuel economics and greater cost-effectiveness.

### Shaping minds to the newer opportunity of synthetic oils

Though synthetic oils made headway in Germany during World War II due to their limited oil supply, the use of synthetic motor oils has only begun to gain widespread traction more recently, with manufacturers awakening to the benefits of these oils, which include lower emissions and longer breaks between oil changes. Because of these benefits, many industrial experts now espouse the idea that purely synthetic oils are superior to mineral oils.

Since synthetic oils are man-made, many manufacturers are coming out with proprietary solutions which they are hesitant to reveal. The versatility of synthetic oils, seen in their ability to enhance gas mileage, optimize cold weather starts and leave motor engines sludge-free are boosting their demand in the market and contributing immensely to the automotive and two-wheeler industry. Premium synthetic oil technology is also going hand-in-hand with the performance segment and bridging the gap between the OEM and the end-user. Furthermore, the business relationships and co-operation between many OEMs with well-established automotive companies is paving the way for enhanced performance and more efficient fuel dynamics.

## Bio-based Lubes Buckling, Speed Breaker Ahead for Traditionally Favored Lubes



Source: Future Market Insights, 2019

### **Disruptive factors that may impact the two-wheeler sector**

The two-wheeler industry and lubricants technology is not immune to the market disrupting potential of green regulations, EV technology and shared mobility, demonstrated by ride sharing service providers like Ola and Uber majorly disrupting the market. There is a decline amongst young adults taking the trouble to own or maintain cars, and consequentially there has been an increase in the ride share modality. While this does affect market dynamics, smart OEMs are exploring the hidden opportunity of manufacturing oils and lubes that are specifically for ride share cars and fleet customers. Innovative solutions are being pioneered to increase service interval of ride share cars and their exclusive access to one single oil provider that will offer them serviceability at their workshops. The new EV (Electric Vehicles) norms are making massive headway in developed economies like that of Europe and North America. Developing nations are still waking up to the advanced infrastructure required for electric vehicular technology and strict regulatory norms. While this has boosted the demand for two-wheelers and subsequently lubricant technology, lubricant manufacturers could further consolidate their gains in the automotive market by diversifying into transmission oils, axle oils and power oils which will also be needed in electric vehicles in countries where EV technology has been promoted and put to practice.

### **Advanced lubricants to make headway in reduction of CO<sub>2</sub> emissions in Europe**

Advanced lubricants cause less friction and lesser energy is required to run the car when they are used. This translates to fewer CO<sub>2</sub> emissions. This can largely be attributed to smarter engine design capabilities which work in cohesion with the lubricant chemistry. Car manufacturers are using catalytic converters which act as emission control devices. Advanced lubricants are designed to accommodate these changes without severely compromising on lubricant performance. An independent study conducted by a Global Engineering and Environmental Consultancy service called Ricardo has a robust database of European vehicles. Through its vast study, it has estimated that with a combination of both direct and indirect benefits associated with advanced lubricants and smart engine architecture, total avoided emissions can reach 6.0 to 9.0 MT of CO<sub>2</sub> e/year by 2030. Thus, advanced lubricants could present the possibility of drastically reducing the carbon emissions of the entire European Union within a short period of time. This is also likely to herald a future of considerable cost savings owing to advanced lube enabled technologies. A transformational solution is thus seen in the offing in Europe's automotive arena. If automotive heavyweights and lubricant OEM's invest smartly, a highly competitive and low carbon European economy is not too far.

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**[www.futuremarketinsights.com/reports/two-wheeler-lubricants-market](http://www.futuremarketinsights.com/reports/two-wheeler-lubricants-market)**