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- JAYANTA RAY,
General Manager - Industrial and
OEM for GS Caltex India

Research and development is the core strength of GS Caltex.

India is the world's third largest lubricant market, behind the USA and China, and ahead of Japan, Russia and Brazil, with total consumption of approximately 2.25 Mt in 2016. In India use of lubricants is not covered by any regulatory body yet. Over 55% of consumers use Group I Base Oil products. However, with more awareness created by OEMs gradually customers are moving towards low viscosity higher fuel economy products manufactured from Group II Plus and Group III Base Oils. "As India is poised to move towards BS VI by 2020, synthetic and high-quality base oils will become norm of the day which supports sustainable future, states **Jayanta Ray, General Manager - Industrial and OEM for GS Caltex India**. In an exclusive interview with **EQUIPMENT TIMES**, Ray highlight the changing product and technology trends in the lubricant market.

Fuel and energy efficiency have become two major parameters while selecting equipment. How do you assess the impact of this shift on lubricant manufacturers?

Premium lubricating oils can help increase equipment operating efficiency and engine fuel economy, and help contribute to reduce energy and resource use, lower emissions, and cost savings for industrial equipment and machinery, as well as passenger and commercial vehicle engines.

GS Caltex Kixx range engine oils are high-performance synthetic engine oils that can help increase engine efficiency and improve engine fuel economy, compared with other engine oil grades most commonly used.

GS Caltex Geartec branded synthetic

driveline products can help to provide outstanding performance as well as to reduce mechanical energy losses.

GS Hydro HD series of hydraulic oils provide quantifiable increases in hydraulic equipment efficiencies and output, resulting in the potential for reduced energy consumption and operating costs.

How important is the selection of right lubricant for right application to enhance the fuel and energy efficiency of a machine?

Major role lubricants play in improving fuel economy and reducing cost of ownership is through providing better protection for equipment. Any Lube oil consist of three main components: base oil, viscosity modifiers, and an additive package containing friction modifiers, detergents, inhibitors to protect copper parts, and emulsifiers to keep water droplets in suspension. The entire chemistry plays a role in the performance during severe operating conditions.

What is the trend in 'energy efficiency lubricants'?

Synthetic lubricants offer energy efficiency and contain emission. A small percentage of reduction in energy consumption can translate into large returns. When energy consumption is economized, equipment operating costs come down. This makes sense for better profitability for which many large production houses are inclined to use in



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recent days. Energy-efficient lubricants can be beneficial in many types of mobile and industrial equipment. For instance, in hydraulic systems, changes in ISO viscosity grades can lead to energy savings. Companies also can benefit from optimizing their selection of gear lubricants. Moving from gear oils formulated with mineral base stocks to those formulated with synthetic base stocks often has been found to lead to both lower friction losses and lower lubricant temperatures.

What is the scope of synthetic oil-based lubricants in the future? Will these be able to meet the demand fuel / energy efficiency?

The use of synthetic and semi-synthetic lubricants is the lowest in Asia, with India having only around 4-5% share. In other parts of the world, there is a much bigger share of synthetic lube consumption compared to mineral-based lubes. Hence, there is huge scope for expansion of synthetic lubricants.

Increasing fuel economy is still a top priority for most automakers due to stricter corporate average fuel economy (CAFE) requirements on the horizon.

Reducing viscosity increases fuel economy. Automakers are moving towards 0W-XX oils which also needs a balance between durability and fuel economy performance. GS Caltex fully synthetic Kixx PAO range is a testimony to above. Kixx PAO's synthetic base fluids manufactured by carefully controlled chemical reactions of Alfa Olefin have extreme stability and gives high performance even at extreme operating conditions.

As space has become a constraint and gear box size is getting reduced how this design trend has a bearing on the development of new generation lubricants? How your company has addressed this challenge?

Downsizing gearboxes means less oil and additive to lubricate and protect gears. However, at the same time, equipment loads are increasing. That translates into higher temperatures and more rapid oxidation. To handle increased demands, today's industrial gear oils must contain high-performance additive chemistry. The goal is to keep the lubricant thermally stable and robust enough to ensure that it lasts longer, protects better and performs more efficiently, while at the same time keeping the system clean and carrying away heat and contaminants.

GS Caltex Geartec range transmission oils address above challenges by special blending its products through high quality Kixx Lubo base oils and tailor made additive packages which result into enormous customer benefits as listed below

Customer Benefits

- The special EP additive and corrosion inhibitor system protects against rusting
- The special sulfur-phosphorus EP additive system provides good load carrying capacity to resist gear tooth wear and scoring
- The highly refined base oil and special inhibitor system provide good oxidation stability and thus longer oil service life
- Clean gear technology

Special dispersants in the 'Clean Gear Technology' additive package suspends sludge and carbon deposits in the gear oil. This prevents their deposition on gear components and oil seals which improves the life of the gear components.

Could you elaborate your company's contribution in this area – products and technology launched for specific equipment segments?

The high-performance lubricants from GS Caltex offer you ultimate reliability at all temperatures, lower oil consumption, significantly lower fuel consumption and specifically extended service intervals. Whenever engines run freer and more reliably, operating

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costs are lower if only because they consume less. And just 1 % lower fuel consumption means, depending on operating conditions, fuel savings of several hundred Rupees per vehicle and year. To bring down reductions on greenhouse gas emissions and improvements on fuel economy averages use of ULSD (Ultra low sulphur diesel) will become a norm soon. The combination of these mandates led to market changes to use API CJ4 category of lubricants. GS Caltex has already launched a super premium quality diesel engine oil called Kixx DX Euro 15W-40 for off-highway and CV applications which require an API CJ-4 Service Category. Product categories meeting API CK4 and API FA4 standards are also ready for launch and will be in market as India moves to stricter emission norms.

What are the latest trends in lubrication?

Due to focus and investments towards environmentally sustainable lubricant solutions; market is moving towards fully synthetic products (Group III and PAO based Base Oils). The increasing popularity of the synthetic lubricants due to the various advantages over conventional lubricants such as excellent thermal stability, wear and tear protection coupled with other properties such as good load carrying capacity and low friction are anticipated to propel industry growth in B2B segment over the next five years. GS Caltex is ready to address the challenges in market and be preferred solution in Synthetic lubricants (PAO based) category. Additives compliment the performance of the finished lubricants by making it more sustainable, fuel economic and reliable.

What are the major challenges?

In general, the cost of lubricants accounts for less than 3 to 4 per cent of a manufacturing company's total operational expenditure. Yet lubrication can deliver significant business value through improved system efficiency, reliable equipment protection and longer oil and equipment life.

Some companies may formulate lubricants to deliver exceptional results solely for one or two criteria. But we do not follow same as we know that too much focus in only one area may derail the process and may negatively impact other critical performance areas. Thus,

we don't develop lubricants with the sole purpose of being able to claim a high number in terms of energy efficiency or any other single attribute. We follow a balanced formulation methodology to look at all critical factors of performance and focus on formulating our lubricants to deliver optimized performance for specific applications.

Tell us about your R&D and where it is heading?

Research and development is the core strength of GS Caltex in developing product competitiveness for lubricants and polymers. GSC R&D facility is located near Seoul in South Korea which has developed many award-winning lubricants to forge partnerships with major OEMs and Key Accounts. Our very impressive range of high quality finished lubricants is now supplied to large businesses including major OEMs viz. Hyundai Motors, Volvo Construction Equipment, Volvo Trucks and Buses, Hyundai Construction Equipment India, POSCO, KPCL, JSPL, Kohler, SDLG, Hyva, Indus Towers, Sono Koyo, Ajax Fiori etc.

We have recently launched PAO based fully synthetic engine oils and industrial gear oils for Indian market. We are also moving ahead in the market place with development of futuristic engine oils meeting API CK4 and FA4 categories with our own base oils developed in our R&D.

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