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## ZF Updates Its Lists of Approved Lubricants

German equipment components manufacturer ZF Friedrichshafen AG, also known as ZF Group, has updated its lists of approved lubricants for its transmissions, axles, final drives, etc. used in trucks, buses, light commercial vehicles, off-road vehicles, marine transmissions, tractors, rail vehicles, lift-trucks and stationary applications.

Each list shows, where applicable, approved lubricant classes, oil change intervals, hydraulic fluids, greasing and approved "trade" lubricants from various manufacturers.

Specializing in engineering, ZF, headquartered in Friedrichshafen, in the south-west German region of Baden-Württemberg, is a worldwide supplier of driveline and chassis technology for cars and commercial vehicles, along with components for construction equipment. It also manufactures components for rail, marine, defense and aviation industries, as well as general industrial applications.

Worldwide, the ZF Group has at about 230 locations in some 40 countries and 20 main development locations in 8 countries with approximately 146,000 employees as of December 31, 2017.

ZF ended the fiscal year 2017 with record sales of €36.4 (US\$45) billion, which, when adjusted for exchange rate effects and M&A activities, elicited organic growth of 6 percent.

ZF has recently updated its lists (22 in all) of approved lubricants for each of the equipment manufactured as follows (click on each individual TE-ML link):

Manual transmissions for trucks with "TE-ML 01" entry on the type plate **TE-ML 01**

Manual and automated transmissions for trucks, buses, light commercial vehicles and special vehicles with "TE-ML 02" entry on the type plate **TE-ML 02**

Transmissions for off-road equipment (off-road vehicles, special vehicles, lift truck) **TE-ML 03**

Marine transmissions **TE-ML 04**

Axles for off-road vehicles **TE-ML 05**

Tractor transmissions and hydraulic lifts **TE-ML 06**

Hydrostatic-mechanical and electric drive systems **TE-ML 07**

Steering systems (non-power-assisted) for cars, commercial vehicles and off-road vehicles **TE-ML 08**

Steering systems and oil pumps for cars, commercial vehicles and off-road vehicles **TE-ML 09**

Manual transmissions, double-clutch transmissions and automatic transmissions for cars **TE-ML 11**

Axles and wheel heads for buses and trucks **TE-ML 12**

ZF assemblies in special purpose vehicles **TE-ML 13**

Powershift transmissions, type Ecomat, for buses, trucks, and special vehicles **TE-ML 14**

Brake systems for special vehicles **TE-ML 15**

Transmissions for rail vehicles **TE-ML 16**

Transmissions and axles for lift-trucks **TE-ML 17**

Axles for cars **TE-ML 18**

Transfer and offset transmissions for commercial vehicles **TE-ML 19**

Powershift transmissions, type EcoLife, for buses, trucks, special vehicles and stationary applications **TE-ML 20**

Tractor axles, transmissions for harvesters and final drives **TE-ML 21**

Stationary applications **TE-ML 23**

Historical Manual Transmissions for Trucks and Passenger Cars **TE-ML 24**

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## **HollyFrontier Appoints Sean Lalonde, Director, Global Base Oil and Wax**

HollyFrontier announced the elevation of Sean Lalonde to Director, Global Base Oil and Wax. In his new capacity, Lalonde will be responsible for all base oil sales generated by the company's HollyFrontier refinery in Tulsa, OK, and its Petro-Canada Lubricants (a HollyFrontier subsidiary) refinery located in Mississauga, Ontario. In addition, his team will drive business development for expansion of the company's Group II, II+ and Group III production. Lalonde's most recent position was manager of Base Oil, White Oil and Automotive OEM business in the Americas.

## BP Publishes Its Energy Outlook 2018

The 2018 edition of BP's Energy Outlook considers the forces shaping the global energy transition out to 2040 and the key uncertainties surrounding that transition. The speed of the energy transition is uncertain and the new Outlook considers a range of scenarios.

Its 'Evolving Transition' scenario, which assumes that government policies, technologies and societal preferences evolve in a manner and speed similar to the recent past, expects:

- Fast growth in developing economies drives up global energy demand a third higher.
- The global energy mix is the most diverse the world has ever seen by 2040, with oil, gas, coal and non-fossil fuels each contributing around a quarter.
- Renewables are by far the fastest-growing fuel source, increasing five-fold and providing around 14% of primary energy.
- Demand for oil grows over much of Outlook period before plateauing in the later years.
- Natural gas demand grows strongly and overtakes coal as the second largest source of energy.
- Oil and gas together account for over half of the world's energy.
- Global coal consumption flatlines and it seems increasingly likely that Chinese coal consumption has plateaued.
- The number of electric cars grows to around 15% of the car parc, but because of the much higher intensity with which they are used, account for 30% of passenger vehicle kilometers.
- Carbon emissions continue to rise, signalling the need for a comprehensive set of actions to achieve a decisive break from the past.

The new Outlook was launched in London on February 20, 2018 by Spencer Dale, group chief economist, and Bob Dudley, group chief executive.

"BP's strategy has to be resilient and adaptable to significant changes in the energy industry. This Outlook considers the possible implications of some of these changes and helps inform our long-term planning. We cannot predict where these changes will take us, but we can use this knowledge to get fit and ready to play our role in meeting the energy needs of tomorrow," said Bob Dudley.

"We are seeing growing competition between different energy sources, driven by abundant energy supplies, and continued improvements in energy efficiency. As the world learns to do more with less, demand for energy will be met by the most diverse fuels mix we have ever seen," said Spencer Dale.

Much of the narrative in the Outlook is based on the Evolving Transition scenario. This scenario, and the others considered in the Outlook, are not predictions of what is likely to happen, rather they explore the possible implications of different judgements and assumptions.

The Outlook considers several scenarios and explores the energy transition from three different viewpoints: fuels, sectors and regions. Unless otherwise stated, the findings below relate to the Evolving Transition scenario.

### Fuel analysis

"By 2040, oil, gas, coal and non-fossil fuels each account for around a quarter of the world's energy. More than 40% of the overall increase in energy demand is met by renewable energy," explained Dale.

Oil demand grows over much of the Outlook, although it plateaus in the later years. All the demand growth comes from emerging economies. The growth in supply is driven by US tight oil in the early part of the Outlook, with OPEC taking over from the late 2020s as Middle East producers adopt a strategy of growing market share. The transport sector continues to dominate global oil demand, accounting for more than half of the overall growth. Most of the growth in energy demand from transport, which flattens off towards the end of the Outlook, comes from non-road (largely air, marine,

and rail) and trucks, with small increases from cars and motorbikes. After 2030, the main source of growth in the demand for oil is from non-combusted uses, particularly as a feedstock for petrochemicals.

Natural gas grows strongly over the period, supported by increasing levels of industrialization and power demand in fast-growing emerging economies, continued coal-to-gas switching, and the increasing availability of low-cost supplies in North America and the Middle East. By 2040, the US accounts for almost one quarter of global gas production, and global LNG supplies will more than double. The sustained growth in LNG supplies greatly increases the availability of gas around the world, with LNG volumes overtaking inter-regional pipeline shipments in the early 2020s.

Coal consumption flatlines over the Outlook period, with falls in China and the OECD offset by increasing demand in India and other emerging Asian economies. China remains the largest market for coal, accounting for 40% of global coal demand to 2040.

Renewable energy grows over 400% and accounts for over 50% of the increase in global power generation. This strong growth is enabled by the increasing competitiveness of wind and solar. Subsidies are gradually phased out by the mid-2020s, with renewable energy increasingly able to compete against other fuels. China is the largest source of growth, adding more renewable energy than the entire OECD combined, with India becoming the second largest source of growth by 2030.

### **Sector analysis**

Power accounts for nearly 70% of the increase in primary energy demand. The mix of fuels used in power generation is set to shift materially, with renewable energy gaining share more quickly than any energy source in history, increasing from 7% today to around a quarter by 2040. Even so, coal remains the largest source of energy in power generation by 2040.

Transport energy demand grows by only 25% despite total demand for transportation more than doubling, reflecting accelerating gains in vehicle efficiency. The transport sector continues to be dominated by oil (around 85% in 2040), despite increasing penetration of alternative fuels – particularly natural gas and electricity.

This year's Outlook argues that the penetration of electricity in the transport sector is best measured by considering both the number of electric vehicles (EVs) and how intensively each vehicle is used. In the Evolving Transition scenario, the share of EVs in the global car parc reaches around 15% by 2040 – more than 300 million cars in a car parc of almost 2 billion. However, the share of passenger car kilometres powered by electricity, which also takes account of the intensity with which electric cars are used, is over 30%. The Outlook shows how the interaction of fully-autonomous cars with shared mobility has the potential to substantially boost the intensity with which electric cars are driven.

A key uncertainty in the period to 2040 is the speed with which sales of electric cars increases. To gauge the significance of this uncertainty, the Outlook considers a scenario in which there is a worldwide ban on the sales of cars with internal combustion engines (ICE) from 2040. This scenario reduces liquid fuel demand by around 10 million barrels a day relative to the Evolving Transition scenario but, even so, the level of oil demand in 2040 in the 'ICE ban' scenario is higher than in 2016.

“The suggestion that rapid growth in electric cars will cause oil demand to collapse just isn't supported by the basic numbers – even with really rapid growth,” explains Dale.

“Even in the scenario where we see an ICE ban and very high efficiency standards, oil demand is still higher in 2040 than it is today.”

Industrial energy demand, including both combusted and non-combusted uses of fuels, accounts for around half of the increase in energy consumption.

Improving efficiency drives slower growth in industrial energy demand (excluding the non-combusted sector), in large part driven by China's transition towards a less energy intensive service and consumer-facing sectors. Some of China's slowing growth is likely to be displaced to lower-income economies, including India and Africa.

Non-combusted use of fuels, particularly as feedstocks for petrochemicals, are the fastest growing source of overall demand for oil and gas. Non-combusted use of fuels grows at almost twice the rate of other industrial uses, although increasing environmental pressures on the use of some products, particularly single-use plastics and packaging, dampens growth quite materially relative to past trends. Oil accounts for nearly two thirds of the growth in non-combusted use of energy, with natural gas

providing much of the remainder.

### **Regional analysis**

All the growth in energy consumption is in fast-growing developing economies: China and India account for half of the growth in global energy demand to 2040. Through the period China's energy growth slows as it transitions to a more sustainable pattern of economic growth. India's slowing in demand growth is less pronounced and by the early 2030s it overtakes China as the world's fastest growing market for energy. In the latter stages of the Outlook, Africa also plays an increasingly important role in driving energy demand, contributing more to global demand growth from 2035 to 2040 than China.

### **Carbon emissions**

In the Outlook's Evolving Transition scenario, carbon emissions rise by 10% by 2040. While this is far slower than the rates seen in the past 25 years, it remains higher than the sharp decline thought to be necessary to achieve the Paris commitments.

As such, the Outlook also explores an Even Faster Transition scenario, which has the same broad decline in carbon emissions as the International Energy Agency's 'Sustainable Development Scenario' where carbon emissions fall by almost 50% by 2040.

Most of the additional abatement of emissions in this scenario, relative the Evolving Transition scenario, come from the power sector, which is almost entirely decarbonized by 2040.

"We need a far more decisive break from the past," concluded Dudley. "In BP, we continue to believe that carbon pricing must be a key element as it provides incentives for everyone to play their part – from consumers using energy more efficiently to producers providing more low-carbon forms of energy."

## Calumet Expects Revisions to Previously Announced 2017 4Q and FY Results

Calumet Specialty Products Partners, L.P. last Monday announced it expects that its consolidated fourth quarter 2017 results will differ from the results presented in Calumet's earnings release issued on March 8, 2018. Calumet's revised financial statements will be included in the Form 10-K, which is expected to be filed by April 2, 2018. While the Partnership does not anticipate that the previously reported revenues and liquidity for the quarter will change materially, it does expect a decrease in its previously reported net income and Adjusted EBITDA for the fourth quarter 2017 with a commensurate decrease in those line items for the full year 2017. West Griffin, Executive Vice President & Chief Financial Officer of Calumet, commented, "We are disappointed that the ongoing implementation and associated learning process related to our new enterprise resource planning system has led to this development. However, even with these expected changes, we believe, as previously communicated, that the Partnership will have demonstrated five consecutive quarters of trailing-twelve months Adjusted EBITDA improvement when we finalize our reporting and we remain well-positioned to continue our momentum and transformation in 2018." Calumet continues to integrate its recently implemented enterprise resource planning ("ERP") system. Implementation issues have resulted in a delay in the financial statement closing process, as execution of certain financial statement controls, including timely account reconciliation, analysis, and review, have not operated as intended for all financial statement accounts. These matters have resulted in unanticipated delays in compiling financial reports and other data necessary to prepare and complete the financial statements required for the annual report on Form 10-K for the fiscal year ended December 31, 2017. Calumet has filed a notification of late filing with the Securities and Exchange Commission with respect to the filing of its Form 10-K.

## **Cosan SA Signs 20-Year Contract With ExxonMobil Lubricants**

Brazilian conglomerate Cosan SA Industria e Comercio last Tuesday signed a 20-year contract with ExxonMobil Lubricants Trading Company to exclusively produce, import, distribute, and sell Mobil brand lubricants and specialty products in four South American countries - Brazil, Bolivia, Paraguay, and Uruguay. Cosan is a Brazilian holding company engaged in the production of ethanol, sugar, biofuels and electric power, investment in agricultural properties, and the distribution of liquid fuels and lubricants. Its main products include hydrated ethyl alcohol fuel, anhydrous alcohol, gasoline and diesel. The company entered in the fuel distribution, lubricant production and marketing businesses in 2008, after it took over Exxon Mobil's Brazilian unit. Three years later, it also purchased ExxonMobil Lubricants Trading Company's assets in Bolivia, Paraguay and Uruguay. Locally, Cosan holds an interest in two joint ventures formed with Anglo-Dutch firm Shell: Raízen Combustíveis, active in the fuel distribution business, and Raízen Energia, engaged in the production and marketing of sugar, ethanol and energy cogeneration. In 2012, it completed the acquisition of Comgás, a US\$1.7 billion deal for a 60% stake in the company, which is Brazil's largest natural gas distributor. The transaction added to Cosan's business the concession for piped gas distribution in 177 municipalities throughout the state of São Paulo. Based in São Paulo, Cosan manages through its subsidiaries 24 sugar and ethanol mills, over 5,000 service stations, 58 distribution terminals, a lubricant oil blending plant in Ilha do Governador, Rio de Janeiro, and more than 570,000 acres of farmland, among other assets. It has a total installed capacity of 940MW and burns sugar cane bagasse to generate power.

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