PowerTALK

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Top Stories

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Power Systems Research: Data....Forecasts...Strategies

Data Point: *Graders*

2,375

By Carol Turner, Senior Analyst, Global Operations

This is the estimate, by Power Systems Research, of the number of Graders that will be produced in 2018 in the United States. A Grader is a piece of heavy equipment used to level or smooth roads or other like surfaces. Sometimes, these machines are referred to as Road Graders or Motor Graders. Graders are used worldwide to build and maintain roads, highways, airports and other construction projects.

Deere leads in production of Graders in the United States (NA) with 56% of all units produced. In second position, with combined plant totals, is Caterpillar with 39%. Weiler (NorAm) is third with 3% of total units produced. From 2016-2017, production of Graders in the United States increased nearly 4%. Production is expected to gain an additional 1.5% from 2017-2018.

Prior year decline was attributed to Tier 4 pre-buying incentives and the lull for activities that utilize graders that are predominately road related. The gain can be credited to the overall increase in construction related activities focusing on aggregate activities. Expect production to remain flat over the next 3-5 years with a slight gain of 5%.

This information comes from two proprietary databases maintained by Power Systems Research: **EnginLink™** and **OE Link™**. **PSR**

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What's The Real Cost of Your Diesel?

By Dennis Huibregtse, CEO of Power Systems Research

Dennis Huibregtse

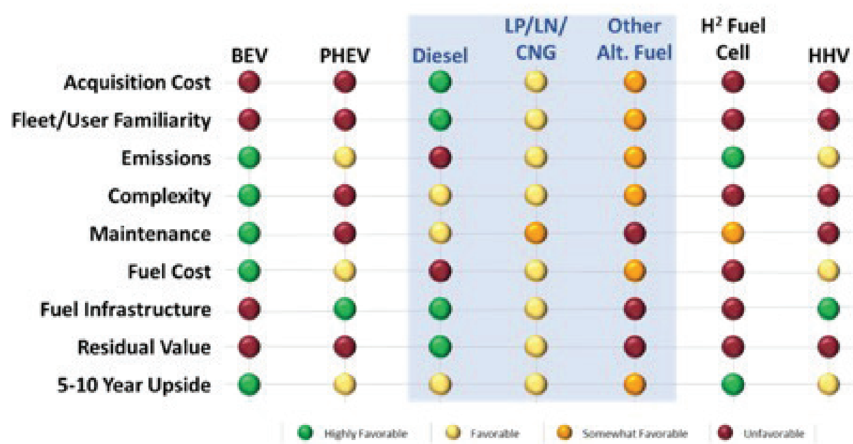
We have previously mentioned that, as technologies advance, increasingly favorable acceptance of alternative powertrains in the medium and heavy commercial vehicle (MHV) sector is anticipated.

While the "alternative" label is frequently associated with powertrain electrification – including battery-electric vehicles (BEVs), various types of hybrid-electric vehicles (HEVs), and hydrogen (H2) fuel cell-electrics – the evolving alternatives to diesel engines are certainly not limited to electric-based drive systems.

Others include compression-ignition and spark-ignition internal combustion (IC) engines that operate on several types of gaseous or liquid fuels. And, of course, hybrid drivetrains typically include an IC engine, so the IC engine's demise is certainly not predicted for anytime soon.

But as fleets evaluate powertrain alternatives in their search for potential operating cost reductions and improvements in efficiency, it quickly becomes apparent that not all attributes of the current range of alternatives are perceived favorably or equally.

Perceived Powertrain Favorability



This matrix summarizes a series of perceptions based on information gathered by Power Systems Research from a wide range of resources during 2018.

Perceptions are subjective, of course, and there has been no attempt to quantify these here. Regardless, it does provide a view of how the alternatives are seen to stack up against incumbent diesel powertrains, as well as other IC engines operating on alternative fuels. For reference, all IC-only configurations are included in the shaded columns of the matrix.

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What's The Real Cost of Your Diesel?

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Bad weather is around the corner in the form of trade tariffs and global policy tensions. The storm, or maybe just the bad weather, will eventually pass, but the aftermath might be felt for years and could potentially bring higher risks and instability.

Interestingly, diesel powertrains, which account for a significant majority of MHVs being produced today, have only two attributes that are perceived as unfavorable: emissions and fuel cost.

It can be argued that current diesel engines are the cleanest ever produced – and they are – but it takes thousands of dollars' worth of emissions reduction hardware plus millions of dollars of investment in engineering and development work needed to clean up diesel exhaust.

That contrasts with a battery-electric drive which produces zero exhaust emissions.

Yes, we can argue about emissions from fossil fuel-generated electricity used to charge the battery, but that's not the point here. An all-electric vehicle has no exhaust, the diesel does.

The other unfavorable attribute, diesel fuel cost, takes a hit both from the cost of fuel at the pump, which is almost always perceived to be too high, and from the volatility of fuel prices. Ask any fleet manager about the price of diesel fuel and prepare for an earful.

Hours of discussion could be devoted to debating individual points in this matrix – and, hopefully, that will happen.

Let us know your thoughts! **PSR**

Global/North America Report

By Yosyf Sheremeta, PSR Director of Product Management & Customer Experience.

Will Trade Wars Turn into Economic Cold War?

Yosyf Sheremeta

(Part One of Two Parts)

Global Markets have been relying on strong momentum and performing well in most sectors. But bad weather is around the corner in the form of trade tariffs and global policy tensions. The storm, or maybe just the bad weather, will eventually pass, but the aftermath might be felt for years and could potentially bring higher risks and instability.

In the short term, we do not see large changes to the global economy. We believe key global players will adjust to the new norms of the trade and most likely will absorb the additional cost related to tariffs on a temporary basis. If such instability were to continue, global trade will have to rebalance and adjust to new rules, which are yet to be even proposed. This could take years.

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Global/North America Report

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At the same time, global economies look strong, amidst trade tensions and global politics. Most global markets have been enjoying a positive outlook and an increasing level of business activities. Unless further economic escalations take place globally, PSR estimates that current strong economic conditions will last at least through 2019.

European markets and North America enjoy low unemployment, very low interest rates and low inflation. However, several risk factors to this continued growth exist, including the geo-political environment, higher expected interest rates and inflation, as well as a possible economic cold war, further trade disagreements and new political tensions.

With the growth of economic tensions, we expect to continue to see rapid shifts in political situations and money capital between industries and markets going forward.

This growth certainly has benefited the oil and gas industries, and infrastructure and financial sectors of the economy; however, this might not continue long term.

The financial and stock markets, after reaching record highs in January, turned into a short-term correction in early February, which was very much needed and somewhat overdue. The correction was short-lived, and most markets already have recovered and are nicely set for new growth.

The financial markets certainly will be volatile during the rest of 2018. We think that due to the higher global tensions the stock market did not really benefit from the solid economic performance in H1 2018.

Some markets that could soon face a high risk of being affected by possible new policies, have employed wait and see tactics without any new large investment initiatives on a global scale.

When our analysts study current and future market trends, we do not speculate on rumors or proposed future policies, so we have not made any significant changes in our projections related to escalated global trade tensions and economic disagreements. Our forecast is largely based on the current and future demand analysis as well as our proprietary forecasting algorithm, and we do not speculate on future policies and politics.

Overall, in the very near term, the global economic drivers will remain stable and will mainly rely on strong economic performance in their markets; oil prices regained significant ground during Q2 2018, reaching US$ 79 per barrel in May 2018. Currently, oil is at US$ 78.

This was a very solid gain of over more than 20% YTD, which continued the upward trend begun last year. Just a note that oil price was around US$ 51 only a year ago, in September 2017. Employment levels are at record highs and projections are positive; however, interest rates, while climbing, remain near record lows.

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Global/North America Report

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Most markets are growing at modest rates, and we are in the middle up-trend of the global growth cycle in the developed economies, such as Europe, and in developing markets, such as India.

As we look to the last quarter of 2018, we are standing behind our previous forecast. We are not making significant changes to our previous projections from Q2 2018, and we remain optimistic on overall global performance for the rest of the year.

New proposed trade policies certainly will have an impact on current markets and future growth; however, these changes will not be immediate and will depend greatly on the outcome of such policies in the long run.

Most markets are growing at modest rates, and we are in the middle up-trend of the global growth cycle in the developed economies, such as Europe, and in developing markets, such as India.

The 2017-2018 period showed continued positive trends globally; we have seen the start of a turnaround in Brazil, which we expect will continue to accelerate in 2018. However, it will take some time to get to prerecession levels in that region.

At the same time, positive news from India and South East Asia, as well as the developed markets of North America and Europe, helped drive growth in the global economy. The Chinese economy, on the other hand, faces fears of a slowdown and an escalation of the trade war. Financial markets in China have reacted negatively, pushing the SHANGHAI SE Composite Index down 20.8% YTD.

In North America, while the general economy is doing very well, we believe the overall consumer markets are rapidly approaching their peaks, and we expect to see some slight decline in production activities in 2018- 2019 for some consumer-oriented segments. Still very low interest rates and low unemployment help support this trend.

Nevertheless, we have already started to see warning signs in some segments; a few production assembly plants for passenger cars and minivan/SUVs were idled for short periods during 2017-2018, mainly to align inventories and current demand levels, as the trends from previous years peaked and began losing steam. Low rates is the only driver that helps support the market at current levels.

Such trends may continue through the rest of Q4 2018 and H1 2019. However, personal transportation markets, while lacking any significant drive factors, still show very healthy levels of demand, mainly due to strong economy and low unemployment.

On the other hand, the Agricultural and Construction segments saw no growth in the years prior to 2017; however, years 2017 and 2018 were quite promising, especially for Construction, and small Agricultural equipment. This gives optimism for the near future, and we expect this trend to carry over into 2019-2022.

During H1 2018, we have seen positive performance from emerging markets, but lately the progress and outlook stalled a bit and the markets are taking a break. Other regions, such as Brazil, China and Russia, due to various factors, have already approached the bottom of their downturn cycles, and have started to see improvements in 2017-2018.

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This should further improve and continue in 2018-2019. Key countries in Central America and South America were busy in 2018 with elections, which brought more uncertainty and postponed recovery. More than 80% of the population in those regions went to the polls, so there was a lot at stake! Wait and see tactics was prominent in most countries of South America.

We have seen a slowdown in demand from emerging markets for equipment and products made in the well-developed regions of North America and Europe. However, solid demand from domestic markets compensated for losses from export activities for these developed countries.

This partially explains the situation where smaller OEMs, which are mainly focused on domestic markets, are performing much better than their larger competitors, which rely heavily on exports. According to the U.S. Census Bureau, there was a slight decrease in export activities from the U.S. recently.

Exports of goods and services in January 2018 vs December 2017 declined; specifically, July exports were $211.1 billion, $2.1 billion less than June exports. The goods and services deficit was $50.1 billion in July, up $4.3 billion from $45.7 billion in June. Year-over-year, the average goods and services deficit increased $22.0 billion YTD in July.

In Brazil, we finally started to see a significant turnaround in 2017, especially in the Agricultural and Construction segments (up 11% and 30%, respectively) vs 2016. It is worth mentioning, that almost all segments have suffered drastic declines of more than 30%-50% over the last few years.

We expect significant improvements in Brazil in 2018- 2019. Our projection for the region remains at high single to double digits growth annually over the next two years (Agricultural at about 11.2%, Construction at 16 % and Industrial at 3%); however, that is far from adequate to recover the losses in 2014-2016.

China continues to experience a slowdown in some segments, such as Agricultural, Marine, Railway and Power Generation, as well as consumer-oriented markets such as Passenger Cars and recreational Vehicles. But the growth estimates should be in line with our earlier projections from Q2 2018.

Ongoing trade tariffs and policy tensions do not help these market segments. At the same time, Construction, Industrial and the Light Commercial Vehicles segments reported solid performance in 2018, and we expect that trend to continue in 2019 and 2020. The Indian subcontinent shows very strong performance across almost all segments, with some reaching mid to high double digits growth in 2018 and 2019, including Agricultural, Construction, LCV and MHV, Passenger Cars and Recreational Products **PSR**

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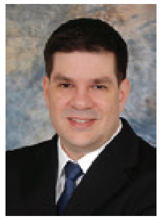
Brazil/South America Report

By Fabio Ferraresi, PSR Director, Business Development, South America



Fabio Ferraresi

Mercedes Increases Exports to Africa and Middle East

The Truck plant in São Bernardo do Campo – SP has increased exports by 34% in shipments of Accelo and Atego trucks to 20 countries in Africa and the Middle East compared to 2017. Exports are likely to keep growing in 2019 with tailor-made solutions for beverage distribution.

Source: *Automotive Business* **Read The Article**

PSR Analysis: The fall in the market since 2013 pushed this Brazilian truck OEM to shift its emphasis to exports. Since then, exports have grown. The remaining idle capacity and currency depreciation makes the export scenario extremely positive. The growth of domestic sales will develop and the future scenario will be more stable in terms of total volume, but more volatile in terms of models, due to customization for importing countries and developing technologies..

Sindipeças Expects Expansion in 2019

The Brazilian association of auto parts manufacturers (Sindipeças) predicts continued recovery of the automotive sector with an estimated growth of 8.4% in revenues of companies in the sector in 2019, compared to 2018. This adds up to R $ 96.9 billion. For 2018, Sindipeças projections indicate revenues of US$ 20 billion, or a growth of 14% compared to 2017. The projection also indicates the creation of 10,000 jobs in 2019, the same amount forecast for 2018.

Source: *Valor Econômico* **Read The Article**

PSR Analysis: The growth is comparable to truck and auto growth, with little growth coming from exports. The sector takes advantage of the benefit of a reduced threat of imports from Asian countries due to currency depreciation

Vehicle Production Grows in Argentina

Dispite the monetary and political crisis, production of vehicles in Argentina grew 9.7% from January to August, when compared with the same months of last year, says Adefa. The performance is due to the increase in exports that shipped 34.1% more vehicles than a year ago, to a total of 175,000. Of this total 71.4%, or 1,249,000, went to Brazil. On the other hand, exports from Brazil to Argentina are proportionally lower than last year.

Source: *Automotive Business* **Read The Article**

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Brazil/South America Report
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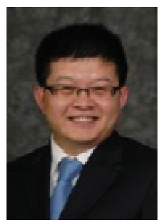
PSR Analysis: This is the expected movement with the recovery in the economy in Brazil and crisis in Argentina. While recovery in Brazil is likely to continue in 2019, PSR is tracking closely the recovery signs in the economy in Argentina to project the growth for 2019. **PSR**

China Report

By Qin Fen, PSR Business Development Manager-China.

Tan Xuguang, CEO of Weichai Power, Heads CNHTC



Qin Fen

Mr. Tan Xuguang, Chairman and CEO of Weichai Power, has been named Chairman and CEO of China National Heavy Duty Truck Group Co., Ltd. (CNHTC). CNHTC, or Sinotruk Group, is a Chinese state-owned truck manufacturer. The move was effective Sept. 1, 2018

Source: *SinoTruk Official Website* **Read The Article**

Mr. Tan, known for his bold moves and remarks about the industry, is already putting into motion new measures to streamline the business and products of CNHTC.

PSR Analysis: They say the shorter the news, the more weight it carries. Such is the case with the report of the appointment of Mr. Tan Xuguang as Chairman and CEO of CNHTC. Mr. Tan, known for his bold moves and remarks about the industry, is already putting into motion new measures to streamline the business and products of CNHTC.

As this transition develops, there are many bigger things to watch. For instance, how will Weichai Power manage the synergy between CNHTC and Shaanxi Heavy Duty Truck (currently owned by Weichai and a competitor of CNHTC)? Moreover, the fact that Weichai was once owned by CNHTC, and now owns CNHTC, makes this more dramatic than most business mergers and acquisitions.

Further complicating the situation is Shaanxi Heavy Duty Truck's desire to manage its own course as a Shaanxi Province company, rather than submit to being part of the newly expanded Weichai, now more than ever under the umbrella of Shandong Province.

This deal will cause ripple effects in the truck market, and will also affect buses, construction equipment and other markets. This is going to be a very interesting situation to follow. **PSR**

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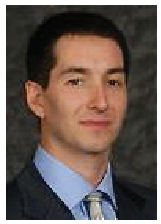
Europe Report

By Emiliano Marzoli, PSR Business Development Manager-Europe
Christopher Bamforth European Market Analyst, contributed to this report



Emiliano Marzoli

The Cannes Yachting Festival

September 2018--The 41st edition of the Cannes Yachting Festival, the largest in-water European boat show, was held Sept. 11-16. Six days of the show were not long enough for more than 50,000 visitors coming from all over the world to see the 638 boats built in France and abroad (58%).

Displayed were luxury motor and sailing yachts, multihulls, sports boats and other categories in length from two to 50 meters. 219 new boats were presented, of which 122 celebrated their world's premiere. The greatest interest has been in the 150 largest yachts over 20 meters in length.

542 exhibitors including the Beneteau Group, Azimut - Benetti, Ferretti Group, Oyster, Apreamare, Sessa Marine, Princess, Riva, Cranchi, Galeon, Dehler, Bavaria, Quicksilver, Brunswick Marine, Bertran, Chris Craft, Lagoon, Dufour, Hanse Group and others took part in this exceptional festival of boats displayed in their natural environment in two ports of Cannes, Vieux Port and Port Canto.

Top five motor superyachts launched at the show came from shipyards Baglietto, Conrad, Ferretti Custom Line, Maiora and Moonen Martinique. The yachts ranged in length from 48m, the largest (Baglietto), to 36.3 meters, the shortest (Martinique).

Even though the market has been very soft the last 10 years, manufacturers of sailing monohulls presented many new models at the show. 110 sailing yachts were displayed at the show. Top five were the latest 29.3m Southwind Shipyard's masterpiece, Sunreef's 24.4m superyacht, Nautor Swan's 23.99m yacht, Baltic performance 20.52m yacht and Fountaine Pajout new 20.36m catamaran. The latest generation of sailing boats has a modern look, is easy to navigate, are safer and faster, and offer more space and comfort.

Multihulls are in high demand, and are attractive to both commercial and private buyers. The show hosted more than 46 multihulls, including 13 motor catamarans. All well-known brands took part in the show. French builders Catana Group, Dufour, Fountaine Pajot, Lagoon CNB, Outremer have presented the latest models as well as Neel Trimaran, Sunreef and Nautitech, recently acquired by Bavaria Group.

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Europe Report

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This year, the Cannes Festival emphasized the development and use of green energies, light and resistant material, hydrodynamic shapes of hulls, and end use of engines decreasing energy consumption. Eco-friendly boats took a special place at the show.

Arcadia's five boats ranging from 18m to 35m are powered by solar energy. Aquamare's luxury speedboat Liso 720 GTE is the first fully electric boat powered with lithium 140kWh batteries 97% recyclable. Turbocraft boat built by Silverfin has a unique shape that helps sailing faster with much lower fuel consumption. The French company Seair has built the flying RIB equipped with a foil block system that enables fuel saving of almost 30%. The very first yacht with foils has been offered by the company ENATA. In coming years, research and development of the eco-friendly boats will continue to be emphasized.

Next year's edition of the Cannes Yachting Festival will be dedicated to mono and multihull sailing yachts. The festival's objective is to improve visibility and exhibition conditions of sailing boats.

Next year's edition of the Cannes Yachting Festival will be dedicated to mono and multihull sailing yachts. The festival's objective is to improve visibility and exhibition conditions of sailing boats. They will be exclusively exhibited at the facility of Port Canto. ***—CB*** **PSR**

Far East/Southeast Asia Report

By Akihiro Komuro, PSR Research Analyst, Far East and Southeast Asia

Southeast Asia: Thailand

Japanese OEMs Avoid INTERMAT ASEAN 2018

Akihiro Komuro

BANGKOK--This year was the second time INTERMAT ASEAN (The Southeast Asian Trade Show for Construction and Infrastructure) was held in Southeast Asia. The show was held at the IMPACT Exhibition and Convention Centre here Sept. 6-8, 2018. There were many booths here devoted to Chinese and Korean brands. The size of the show was not large, but every the booth seemed very active.

PSR Analysis: The domestic construction equipment market in Thailand is an oligopoly controlled by Japanese OEMs such as Komatsu, Hitachi Construction Machinery, Kobelco, etc. More than 90% of the Thai domestic market is held by Japanese OEMs. This situation is particularly noticeable in the excavator market, which is the largest market by unit production.

However, these Japanese OEMs did not exhibit at the INTERMAT ASEAN 2018. This situation exists in other Southeast Asian countries, including Indonesia and Vietnam.

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Many sources at the show tell me that the quality of Chinese products has improved. For this reason, Chinese equipment now is used at some construction sites. However, since the high reliability of Japanese products is very high, it's difficult for OEMs based in Europe, the US, China and Korea to expand into Southeast Asia; to expand, they must exceed the brand image that Japanese OEM has built over many years.

The key to Japanese success—in addition to product quality—is after-sales support such as parts supply, repairing, and maintenance. Cost and product quality are important, of course, but the biggest challenge for non-Japanese OEMs expansion is to match the Japanese after-sales service. **PSR**

India Report

By Jinal Shah, Regional Director, South Asia Operations

Possible Impact of Axle Norms on Trucks in India

Jinal Shah

The government moved July 16, 2018, to revise axle load norms after more than three decades, increasing the official maximum load carrying capacity of heavy vehicles. Under the revised notification on August 7, 2018, the government has allowed an increase in axle load capacity of 12%-25% on all trucks. All trucks approved after July 16, 2018, must be tested for the higher axle loads by testing agencies.

An increase in the 'maximum permissible load' may not increase the GVW of old trucks, which have been certified for a lower tonnage by OEMs and testing agencies. Applicability to old trucks implies formalization of existing overloading practices.

What does it mean for OEMs?

As per the amendment, OEM's will not have to re-engineer the existing models or the ones which have been approved before July 16, 2018. They can move to the new Gross Vehicle Weight.

On the new models, there will be at least some fine tuning and adjustment to existing models where axle loads and tire rating changes may be required

What does it mean for component suppliers?

Besides altering the brake, steering and suspension, for some applications, manufacturers may also have to make changes to the engine and drivetrain, which will necessitate tweaking the noise, vibration, and harshness (NVH) levels.

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India Report

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Depending on the engine type, the regulation requires to be made to the entire product range and will have cost implications.

Possible impact on truck demand

Despite disruptions, the MHCV market is on course to hit a new peak. The market upcycle that started in 2013 is likely to continue for another 1-2 years, exceeding the five years that it typically lasts. Although there might be a short-term impact from the axle rule.

We believe the new axle rules affect only about 25% of the total medium and heavy commercial vehicle market. About three-quarters of MHCV units, such as tippers, intermediate commercial vehicles and cargo carriers, remain unaffected. The impact on car/two-wheeler carriers as well as on oil tankers/cement mixers will be negligible, since these are based on volume rather than weight.

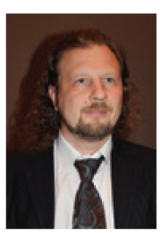
Given that about 60% of truck use is volume-based (implying no scope for increasing loads) and a significant portion of the remaining is already being overloaded, the impact of these norms will not be significant

Tippers and intermediate commercial vehicles (ICVs)--which together accounted for 45% of total industry volume in 1Q FY2019--will feel the greatest impact. However, as overloading is already rampant in the tipper category, the new norms will formalize the existing practice of overloading while strict overloading norms may result in the sale of more such vehicles. **PSR**

Russia Report

By Maxim Sakov, Market Consultant, Russia

Mahindra Pickup To Be Assembled in Belarus



Maxim Sakov

Mahindra plans to start assembling pickups in the Belarussian plant of "Unison." The vehicle will have a 140 hp turbo diesel engine and mechanical transmission. Equipment will include ABS, EBD, and climate controls. Pricing has not been disclosed, but it's expected that the final price will be lower than its direct competitor, UAZ. Target markets are Belarus and Russia. **Read The Article**

PSR Analysis: It's the second attempt by Mahindra to get into the Russian market. In 2004, the Indian OEM signed an agreement with the Russian Gorkovsky Automotive plant. GAZ assembled about 100 Scorpio SUVs, and then the project was closed because of no demand.

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Russia Report

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Thus, Mahindra need to invest significant money for after-sales service and support to establish its brand in the Russian market.

Sweden Restricts Supply of Volvo-Penta Marine Engines to Russian Military

The exit of the Swedish OEM will affect the industry, but not critically. There are equivalents from other foreign OEMs, whose production is localized in Russia. Volvo-Penta's propulsion engines were installed on coast guard boats and patrol ships. The information has been confirmed to www.frotprom.ru by two sources in the shipbuilding industry.
Read The Article

PSR Analysis: Russian shipbuilding was strongly affected by the exit of MTU in 2014 because of sanctions. As a result, the program to develop its own HHP engine ranges was started. New engines for these applications, made by Kolomna Diesel and UDMW are appearing on the market. Also, Russia has started new programs with Chinese manufacturers and Liebherr.

KAMAZ and Weichai Sign JV Agreement

The joint venture by KAMAZ-Weichai, specializing in the production of industrial diesel and NG engines in the range 520-2000 kWt with volume greater than 17 liters, is planned for the KAMAZ subsidiary, the Tutaev Motor Plant in Yaroslavl.

The first engines are expected to be produced this year. It's expected that the engines will be sold to Russia and CIS countries. According to KAMAZ CEO Sergei Kogogin, the engines will be used in shipbuilding, railway, power generation and industrial applications. **Read The Article**

PSR Analysis: The agreement with signed in IV Far East Economical forum in Vladivostok. With the restriction of getting new technologies from Western companies, Russia has become more active on the Eastern field. This corresponds with previous notes on the exit of Volvo-Penta from the market.

Novatek and Rosatomlfot have set an agreement to build ice breaker ships on LNG fuel

Novatek and Rosatomlfot have agreed to build and develop a fleet of ice breakers, using LNG as a fuel. The companies signed a memorandum. These ships will be used on North Marine Route. At the beginning, the companies are talking about 4 ships. **Read The Article**

PSR Analysis: climate change in Arctic region has allowed to develop Northern Marine Route as part of Great Silk Road to transfer goods from

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China to EU. Also, Arctic gasfields (like terminal in Sabetta) will allow to resolve fuel problem in case of using LGN ice breakers. Novatek is second largest Russian gas extracting company. Rosatomflot – operator of Russian ice breaker, including nuclear powered ones. **PSR**

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