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Data Point: *US Combines*

7,600

By *Carol Turner*, Senior Analyst, Global Operations

This is the estimate, by Power Systems Research, of the number of Combines that will be produced in 2018 in the United States. In 2017, the production was 7,331.

With 64% of total units produced, Deere captured the lead for combine production in North America (US). In second position is Case with 27%; third, is Agco with 5%.

Engines used by OEM: Agco: 100% Agco (347); Case: 33% FPT (654) and 67% Case (1318); Claas: 34% Mercedes (109) and 66% Cat (211), and Deere: 100% Deere (4692).

Collectively, 60% of this production is planned for worldwide export.

During 2016-2017, production of combines in the United States increased 3%. During 2017-2018, production is forecasted to gain an additional 4%. In recent years, demand for new equipment dropped significantly. Farmers were reluctant to buy or trade in pricey equipment because of lower commodity prices.

In 2017, production and purchases of new combines was on the rebound as portrayed with the gain in overall production figures. The gain can be attributed to an increase in commodity prices such as corn and soybeans that peaked in 2013/2014.

Expect production to remain flat in 2019 with a gain up to 5% over the next five years.

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

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*Dennis
Huibregtse*

What About Electrification of Off-Road Vehicles?

By *Dennis Huibregtse*, CEO of Power Systems Research

There is plenty of buzz about vehicle and powertrain electrification these days, much of it focused on incorporating the rapidly developing technologies into highway vehicles, ranging from small, compact passenger cars through the largest over-the-road trucks. But we seem to hear less about electrified powertrain technologies for off-road equipment, specifically in the agricultural, construction and industrial equipment segments.

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What About Electrification of Off-Road Vehicles?

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Looking at data from 2017, roughly 83% of passenger vehicles (including SUVs and minivans) produced globally had spark ignition engines, most of these equipped to run on gasoline, with diesel engines in about 16%. Just over 1% – about 1.2 million vehicles globally – featured other alternatives.

Different purposes, different product

There are reasons, of course, that penetration rates for electric powertrains are likely to be different in off-road applications than in passenger cars, trucks and buses. Part of that is due to fundamental differences in product design and purpose. Although a large majority of both on-highway and off-highway applications employ internal combustion engine-based powertrains, there is relatively little commonality beyond that.

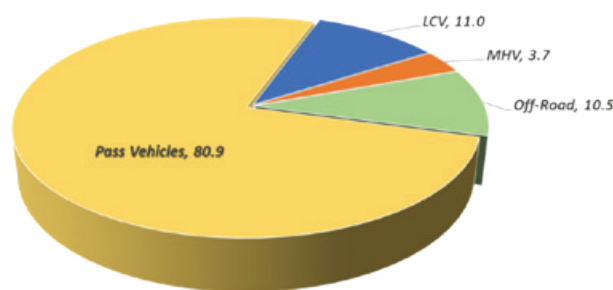
Engine preferences vary

One important difference is the type of engines being employed. Looking at data from 2017, roughly 83% of passenger vehicles (including SUVs and minivans) produced globally had spark ignition engines, most of these equipped to run on gasoline, with diesel engines in about 16%. Just over 1% – about 1.2 million vehicles globally – featured other alternatives.

This contrasts with medium-heavy commercial vehicles, where diesel engines powered nearly 94% of the vehicles produced that year. For the off-road segments noted above, 67% of the equipment had diesel engines. So, the preference for diesel power in these segments is much higher in percentage terms than it is for highway vehicles, although considerably lower with respect to annual unit volume.

Beyond the choice of engine type, vehicles and equipment for these segments are also differentiated by obvious variations in power ranges, size, weight and operating characteristics. Moreover, the respective market segments vary dramatically in size, when measured in terms of annual unit production.

Global OEM Production – 2017 (million units)



Volume-ROI relationships influence investment

Investment in new technologies tends to be directed initially toward products that are likely to achieve sales volume levels that will generate a return on investment within the shortest time. The passenger vehicle sector, which accounts for more than 80% of the units produced annually for the segments being considered here, has an advantage over the commercial vehicle and off-road segments for attracting investment in powertrain electrification because of its potential to more quickly generate ROI.

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What About Electrification of Off-Road Vehicles?

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Recharging vs. refueling

Reconfiguring today's infrastructure into one where recharging an electric vehicle can be as convenient as refueling with diesel fuel or gasoline is a huge task. This is already under way in many urban areas across China, Europe and the US, where electric vehicle recharging stations are no longer a novelty. But that's not the case in every country and certainly not in rural areas.

This is unlikely to change in the foreseeable future where population densities are insufficient to justify investment in electric vehicle charging capability. Commercial highway vehicles and non-road equipment operating in rural areas are likely to remain diesel powered for some years to come.

In the agricultural segment, farmers are highly unlikely to individually invest in recharging equipment for electric-drive tractors unless and until there is a distinct operational advantage over diesel power. Similarly, long-haul trucks are likely to remain diesel powered because the refueling infrastructure they require is far from reality, especially in sparsely populated areas.

Mixed picture for construction and industrial equipment

Construction equipment OEMs are evaluating various electrification options, including hybrid configurations where electric auxiliary drives are being adapted to replace traditional mechanical systems, including hydraulics, in some cases. But relatively few pure battery-electric machine designs have appeared, at this point.

It's different in the industrial segment where we find products such as fork-lift trucks, aerial lifts, many types of utility vehicles, and airport ground support equipment. All of these are well suited for battery-electric drives, since many operate in emission- and noise-sensitive environments. Preferences are likely to shift rapidly, and the momentum has already swung in that direction for some customer groups. Other industrial applications will follow, certainly.

Where is the advantage?

Clearly, powertrain electrification is advancing rapidly for light vehicles. As technologies evolve, it is expected that ownership cost advantages will favor electric drives in many other applications, as well. Commercial and professional users buy vehicles/equipment to generate revenues and produce profits. Rest assured that they will gravitate to the most efficient solution for their requirements, regardless of how it is powered. **PSR**



Dennis Huibregtse, CEO, Power Systems Research

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Most industries are doing well, and the short-term outlook remains positive to flat for most market segments. We expect such positive conditions to last at least for another 12 months.

North America Report

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

North America Economy Going Strong, Despite Politics



*Yosyf
Sheremeta*

(Part Two of Two Parts)

SUMMARY. During H1 2018, the economy remained stable, and economic conditions in the region still are favorable. Most industries are doing well, and the short-term outlook remains positive to flat for most market segments. We expect such positive conditions to last at least for another 12 months.

At the same time, there will be some minor differences among market segments, especially those that are consumer oriented.

Additionally, we have seen that some markets have bottomed out and started a new up-trend in 2018; this trend should further strengthen in 2019.

Going forward, we expect the near future growth will be mainly tied to economic factors and performance, and not political speculations, either global or domestic, as in past years. However, some risks remain on the horizon due to possible global trade disagreements, tariffs and policies that potentially could have an impact long term.

The general economy in the U.S. is in its ninth year of growth and markets are performing well. What we like about this cycle is that we do not see any rapid ups or downs, which is the outcome of some lessons learned from previous cycles and financial crises.

We believe slower growth for some products will continue for the next year or two. For example, the Agricultural segment is finally coming off a major decline (2014-2016) and is nicely positioned to regain ground in 2018-2019; however, activities in 2017 were somewhat flat with no significant activities to boost the recovery across the segment. The Agricultural sector bottomed in 2016-2017, and we forecast it to gain stronger recovery speed in 2020-2021.

The job market is very strong, and combined with strong housing starts, favorable and low interest rates and extra cash in the hands of the consumers, 2018 is turning out to be an even stronger year overall. Additionally, after the implementation of the tax reform in the US, consumers and companies alike are promised more cash in their pockets, which already has boosted spending and investments and that alone helped sustain the high level of demand for goods and services.

As we projected in 2015, the Federal Reserve Bank started rate increases in Q4 2015; since then the rate was increased eight times, and currently is 2.25%.

Going forward, we expect one more rate increase in 2018 and two more increases in 2019 and two more increases in 2020. However, the number of rate increases will greatly depend on inflation rates and economic performance, as well as new policies of the Trump Administration and the new Federal Reserve Bank

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North America Report

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chairman. We may see even more rapid rate increases if inflation becomes a significant concern, especially in 2019

Nevertheless, we do not think rate increases will have any significant immediate impact on most segments in the region during 2018 or 2019. Consumer oriented products such as personal transportation and recreational products will be among the first to feel the impact of rising rates.

Business fixed investments, as well as consumer spending, are very strong and show signs of continued performance at present levels. Wall Street (The Dow) hit a record high in January 2018, mainly due to continued very strong quarterly earnings as well as passing of the new tax code. The long overdue market correction took place in February; however, most indices recovered nicely, and the technology heavy NASDAQ hit record highs in March 2018. During Q2 2018-Q3 2018, financial markets in the US were mainly unchanged as most sectors were consolidating.

Then came October and things changed very rapidly, as many analysts projected a correction that always happens in October of mid-year elections. This downside in October has put two-thirds of technology stocks into a correction mode, but we believe this decline is temporary. The fundamentals are still very strong, and we believe markets will recover over the next 3-6 months. After that, future growth will really depend of the health of economy and not the politics.

While consumer spending is still strong, we believe spending and consumer confidence might reach its peak by end of 2018 and early 2019. Current strong consumer spending levels are driven by low interest rates and the strong job market. Employment statistics were strong over the past few years and will carry over into 2019. The reports from September 7, 2018, showed a record low unemployment rate in August at 3.9%. Employment continued to trend up in several industries, including construction and mining.

In August, the labor force participation rate, at 62.7%, and the employment-population ratio, at 60.3%, showed little change. We project the labor market will remain strong in 2018 with a projected unemployment rate of 3.9%.

Employment in construction continued an upward trend in August (+23,000) and has risen by 297,000 over the past 12 months. Within the industry, nonresidential and commercial trade contractors added 15,100 jobs that month, which signals improvement in infrastructure spending. The Mining sector lead the way, adding 6,000 jobs in August. Employment in mining has risen significantly by 97,000 jobs since reaching a recent low point in October 2016; most of the gain has come in support activities for mining. Sector gained 49,000 jobs in 2018 YTD. This is an encouraging sign, especially for heavy construction/mining equipment OEMs.

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North America Report

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Across all market segments, we expect overall total OEM equipment production numbers to be flat in 2018, which is slightly lower than our previous projection in Q2 2018 at 0.6%. We see an almost flat to slightly lower level of overall activity in 2019, as the overall economy reaches its peak in productivity, as well as lower demand levels.

At the same time, we do expect tax reform implementation to give a major boost to the U.S. economy in the long run, but not in 2018. Furthermore, we have already started to see upbeat interests from the corporate world and activities related to tax reform, such as new investment plans, job creation and new production capacity planning. On the opposite side, current trade rhetoric and proposed policies most likely will bring some disruptions in the market.

During the last few quarters, we have seen a significant increase in construction equipment activities. Major OEMs like CAT, Deere and Cummins showed increased sales and orders in 2017-2018, and we expect that trend to continue in 2019. Again, trade rhetoric might have an impact on these OEMs in the future, which will force industry re-grouping and global rebalancing.

Production in 2016-2017 reached record levels for some segments such as Minivan/SUVs and Passenger Cars, with very strong demand levels throughout the region. However, we believe these markets peaked in 2017, and we already see a slight decrease in production numbers in 2018.

We saw a slight drop in demand for consumer products, starting at the end of 2016. This slower demand carried forward into 2017, but the overall level of demand remained stable. We project these markets to be flat this year. Most of the decline is cyclical and is mainly due to markets having reached their peaks in 2016-2017. At this point, over the mid-term and long-term, we do not expect any major or significant declines in any of the segments.

Across other markets, we forecast that short-term growth is expected to be flat to slightly positive at low-single digits annually for some segments such as Construction and Industrial, with the mining sector likely to experience much stronger growth.

The Agricultural segment has not yet delivered the promised recovery, but we expect activities to improve in 2019-2022. Other segments, such as Passenger Cars, and Minivan/SUV, will experience a slowdown and will most likely turn into negative territory by the end 2018-2019.

AGRICULTURAL. While some activities stabilized in 2016-2017, they did not provide us with enough evidence of complete recovery. Production volumes in 2017 were higher by 6.8% over 2016 and we project an additional gain of 4.1% in 2018 against 2017. The market will remain on this recovery trend going into 2019-2022. Overall, we believe 2018 will be a slightly positive year for the industry in terms of overall equipment growth in production units, but the market will not completely recover for another few years.

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North America Report

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We believe the Construction sector bottomed out in 2016, and 2017 started a new trend with fresh new cyclical growth. Furthermore, an increase in activities within the sector in 2018 has given the market a boost.

CONSTRUCTION EQUIPMENT. We believe the Construction sector bottomed out in 2016, and 2017 started a new trend with fresh new cyclical growth. Furthermore, an increase in activities within the sector in 2018 has given the market a boost.

While some OEMs within the segment booked double digit increases for 2017 and H1 2018, PSR remains cautiously optimistic in terms of the size of the growth. Trade tensions will certainly be a factor in the long run for the sector, but not in the short term. Our most recent projection is rather flat to slightly positive at 4.4% in 2018, compared to 2017; this is slightly higher than our projections from last quarter (at 4.0%).

INDUSTRIAL. We see very similar trends in growth for this segment, with a gain of 2.9% in 2018 over 2017. This is in line with our previous quarter projections. The overall growth dynamic is closely mirroring the Construction segment. The main drivers for the segment are material handling and forklift applications, where the demand remains flat.

MINING EQUIPMENT. A strong level of activities and developments in 2017 give the industry much needed hope and optimism going forward. The main catalysts for the change have been increased commodity prices, new developments within the oil and gas industries and speculation on future administration policies and infrastructure spending. Increased employment rates in the mining sector also support this trend; the segment added over 49,000 new jobs in 2018 YTD.

PSR does not project any rapid recovery of machinery equipment for the mining sector, due to the prolonged market decline and stagnation. Instead, it is shaping up to be a long but steady recovery. It will take several years for the industry to reach its previous production levels.

Consumer sectors, including **LAWN AND GARDEN, PASSENGER CARS, MINIVANS AND SUVs** as well as **RECREATIONAL PRODUCTS** continue to benefit from the strong economy. These segments performed very well over the past few year (2016-2017).

We are seeing a trend reversal for the Passenger Cars and Minivan/SUVs segment, which has experienced a slight slowdown in demand since late 2016 and 2017. The overall sales decline was just 1.8% in 2017 vs 2016 and we project an addition 2% decline in 2018.

Overall, for 2018 we expect the Passenger Car segment production to be slightly negative at -12.8%, as many consumers transition into small SUV sector. Additionally, the average lifespan of a vehicle remains above 11.6 years and that

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North America Report

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does not add to the demand for new cars. In 2015, the average life of a vehicle was 11.4 years, it climbed to 11.6 in 2016 and is expected to continue to rise slowly in the coming years.

The Minivan and SUVs segment showed very high growth over the past few years; however, we believe 2016 was a peak year. For example, while the overall sales of minivans in 2016 grew 6% over 2015, the demand in 2017 was flat.

Many consumers switched from a car to an SUV and that helped to drive demand for the segment even further. The production rates for 2018 will be positive at 5.5%, which is still a very healthy overall production number in comparison to record high levels and demand in previous years.

Another point worth mentioning is the adoption of electric vehicles, which has been gaining ground very rapidly. Most OEMs have or will have solid electric product offerings within a few years, and we expect to see a more rapid increase in sales of electric vehicles. At this point, the overall share of electric vehicles is still insignificant; however, we expect that to change over the next 5-10 years. While we expect that electric cars will gain in popularity over the next few years, they will not gain any significant share of the market.

Considering these factors, we believe the personal transportation segment reached its peak in 2017, but that it will remain healthy to slightly negative over the next couple of years. We forecast production levels in North America will decline 3.5% in 2019.

LAWN AND GARDEN as well as **RECREATIONAL VEHICLES** are still showing steady demand, and the growth trend will remain positive in 2018, shifting into a slight downward trend into flat to negative territory in 2019. The key drivers for this segment are solid housing starts and a strong economy; however, interest rates are expected to rise and slow down the growth in these segments, especially recreational products.

MEDIUM AND HEAVY VEHICLES. Production levels for class 8 trucks continue to be strong, driven by record order levels that are expected to continue well into 2019. Order boards are basically filled through the first half of next year. The strong economy is driving the need to replace or expand the fleets. While not as strong as the heavy truck segment, the medium truck segment is having another good year driven in part, by strong consumer and vocational demand.

POWER GENERATION. While the overall market showed healthy growth over the past few years, the future demand in the segment will slow down a bit but will remain steady. Currently, we forecast the segment to grow 2.1% in 2018 over 2017 and be almost flat in 2019 at 1.0%. **PSR**

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Brazil/South America Report

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



*Fabio
Ferraresi*

Vale Plans First Mine in Brazil with Only Autonomous Trucks

Huge haul trucks, with a capacity of 240 tons, circulate on the roads of a large mining area without operators in the cabins. Controlled only by computer systems, GPS, radars and artificial intelligence, the vehicles move efficiently between the mining front and the unloading area. What sounds like a futuristic film is the reality that begins to appear in the Brucutu mine owned by Vale in Minas Gerais.

The result of six years of research and testing, seven trucks used to transport iron ore from the mining front to the processing plant began to be part of the daily operations alongside six other traditionally operated vehicles. When the entire fleet is replaced by trucks with the new technology, in early 2019, Brucutu will be the first mine to operate autonomously in Brazil.

Based on technological market data, Vale expects to obtain an increase of around 15% in the equipment lifespan. Fuel consumption and maintenance costs are expected to decrease 10% and the average speed of trucks are expected to increase.

Source: *Estado de Sao Paulo newspaper* [Read The Article](#)

PSR Analysis: The trend of using of autonomous vehicles for off-highway applications was included in our presentation in the SAE Diesel Forum 2018 as well as in the AUTODATA Seminar Caxias do Sul, held in August. Additionally, VALE is implementing a program for electrification of vehicles involved on mining and transportation. Contact us for more information on our presentation. info@powersys.com

SCANIA will invest additional \$ 300 million of dollars in Brazilian plant until 2020

As part of \$ 750 million of dollars investment plan for 2016-2020 period to expand and modernize the Sao Bernardo truck plant, SCANIA will invest the remainder amount of \$ 300 million until 2020.

The plant is now working in two shifts and in three shifts in some critical areas recovering the production level reached in 2013, before the market downturn, but with more productivity and flexibility.

The sales forecast for 2018 is more concentrated on exports, which will represent 70% of total sales.

Source: *M&T Magazine* [Read The Article](#)

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Brazil/South America Report

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The motorcycle industry in Brazil will grow 10% this year, but the industry does not contain the euphoria it has seen at other times, such as in 2011, when it produced 2 million units

PSR Analysis: The trend of using idle capacity to export is included in our comments related to the growth rates for CV in South America. It is interesting to note that exports are now reaching markets while Euro VI emissions level is required, while in Brazil the requirement is still Euro V. This means that most of the OEMs are prepared for Euro VI introduction, but legislation requirement is expected only by 2023.

Motorcycles: Growth of 10% in 2018 and 5% in 2019

The motorcycle industry in Brazil will grow 10% this year, but the industry does not contain the euphoria it has seen at other times, such as in 2011, when it produced 2 million units. Abraciclo (Brazilian Association of Manufacturers of Motorcycles) is cautious in forecasting production of 1 million motorcycles in Brazil next year.

Source: AUTODATA Congress 2018 [Read The Article](#)

PSR Analysis: Volumes are aligned with our forecast for Brazil. Reasons for this growth are based on increasing of credit availability, reduction of interest rates, and consumers looking for ways to reduce fuel expenses due the increase of gasoline prices. OEMs are also looking for Ethanol as a fuel alternative for motorcycles. **PSR**

China Report

By *Qin Fen*, PSR Business Development Manager-China.

秦奋，佩赛迩中国业务拓展经理



Qin Fen

Weichai Power and Yuchai Roll Out National 6b Diesel Engine

Weichai and Yuchai rolled out their National 6b diesel engine in Beijing and Nanning, Guangxi.

Sources: D1CM [Read The Article](#) People's Daily Online [Read The Article](#)

PSR Analysis: Good and healthy competition always cheers up people. That's exactly what has happened between China's Weichai Power and Yuchai Machinery this month. Moves like this also tell the industry, after Cummins' Euro 7 concept and hybrid engine roll out in IAA, Weichai Power and Yuchai Machinery are helping to improve environment in their own way, too. More diesel engine makers will follow.

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China Report

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Massive adoption of National 6b compliant engines will help Chinese companies improve air quality and also gain market share in countries where there are stricter emission standards. **PSR**

潍柴玉柴推出国六b柴油发动机

潍柴和玉柴各自在北京和广西南宁推出了国六b柴油发动机。

新闻来源: 第一工程机械网 - 2018年10月9日 [阅读原文](#) 人民网广西频道 - 2018年10月2日 [阅读原文](#)

佩赛迩分析: 良性竞争总能让人振奋不已，这个月潍柴动力和玉柴机器发生的事情便是如此。继康明斯在IAA展推出国七概念和混合动力发动机之后，潍柴动力和玉柴机器也在用自己的实际行动改善环境。更多的柴油机厂家会紧跟这一趋势。

随着国六b发动机的大规模应用，这不仅会帮助中国厂家改善空气质量，同时也会帮助这些厂家在排放标准更加严格的其他国家获得更多的市场份额。

佩赛迩

Three-year Transportation Restructuring Plan Launched

The State Council recently issued a three-year plan to push forward restructuring transportation in a bid to efficiently tackle pollution, raise the efficiency of transportation and lower logistics costs.

The plan is part of supply-side structural reform and will improve the overall transportation network by transferring some of the road volume to railroads and waterways.

Sources: *State Council* [Read The Article](#)

PSR Analysis: Five years ago, when the Ecology and Environment Ministry issued notice on air pollutants emission limits, nobody took it seriously, certainly, not as much as in 2017, when the Ministry circulated a similar draft notice regarding the Beijing-Tianjin-Hebei province region.

This time the Central government did the same to transportation; people need to take this seriously, particularly railway, ship and truck industries, as these industries are directly impacted by this scheme.

If it comes true, truck demands, particularly logistics, will shrink or be shifted to rail and ship. Of course, we need to study the impact case by case, but this is a policy that deserves more attention than it is getting now. **PSR**

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China Report

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国务院办公厅关于印发推进运输结构调整三年行动计划（2018—2020年）的通知

国务院办公厅印发了《推进运输结构调整三年行动计划（2018—2020年）》（以下简称《行动计划》）。

《行动计划》要求，以京津冀及周边地区、长三角地区、汾渭平原等区域为主战场，以推进大宗货物运输“公转铁、公转水”为主攻方向，通过三年集中攻坚，实现全国铁路货运量较2017年增加11亿吨、水路货运量较2017年增加5亿吨、沿海港口大宗货物公路运输量减少4.4亿吨的目标。到2020年，全国货物运输结构明显优化，铁路、水路承担的大宗货物运输量显著提高，将京津冀及周边地区打造成为全国运输结构调整示范区。

新闻来源：中华人民共和国中央人民政府 - 2018年10月9日 [阅读原文](#)

佩赛迩分析：5年前的2013年，当时的环境保护部就印发了《关于执行大气污染物特别排放限值的公告》，要求在京津冀、长三角、珠三角等“三区十群”19个省（区、市）47个地级及以上城市的火电、钢铁、石化、水泥、有色、化工等六大行业以及燃煤锅炉项目执行大气污染物特别排放限值。

但是当时公众并没有像2017年一样，把这个公告太当回事。2017年，环境保护部向有关各方发出《关于京津冀及周边地区执行大气污染物特别排放限值的公告（征求意见稿）》，最初发布的公告4年以后，人们终于知道这回可是来真的了。

这次中央政府对交通运输行业印发的《推进运输结构调整三年行动计划（2018—2020年）》，人们同样应该认真对待，特别是铁路，船舶和卡车行业，因为这三个行业受到这个计划的冲击最为直接。

如果计划最终实施，卡车行业的需求，特别是物流行业，会极大收缩，或者转移至铁路及航运行业。具体行业的影响，我们当然需要去具体行业具体分析，但是大家应对这一政策有更多重视。 **佩赛迩**

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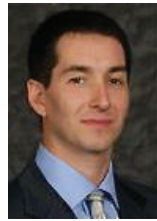
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With a market share of some 31% in the first nine months of 2018, TRATON remains the leader in the truck market of the EU28+2 region (EU, Norway, Switzerland).

Europe Report

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

VW Group Delivers Solid Performance in 2018



*Emiliano
Marzoli*

BRUSSELS – TRATON AG achieved a significant increase in deliveries of commercial vehicles in the first three quarters of 2018. Between January and September, the Group delivered some 15% more vehicles than in the prior-year period. In total, this amounted to 166,330 vehicles of the MAN Truck & Bus, Scania and Volkswagen Caminhões e Ônibus brands.

Read The Article

PSR Analysis: The persistently positive economic performance in the most important markets around the world provided tailwinds for this business in the first nine months of 2018.

With a market share of some 31% in the first nine months of 2018, TRATON remains the leader in the truck market of the EU28+2 region (EU, Norway, Switzerland). Benefiting from the continuing good performance of the European commercial vehicle market, the Group delivered 83,030 trucks, an increase of around 9% compared with the previous year.

In South America, the brands sold 29,630 trucks, thus boosting their vehicle deliveries by some 40% compared with the very poor prior-year period. Growth benefited from increased demand in Brazil, following that country's continuing economic recovery. TRATON remains the clear market leader in the Brazilian truck market, accounting for around 40% share.

As a result of the sustained recovery of the Russian economy, the number of vehicles sold to customers in Russia increased significantly, by some 17%, to 8,000 units

In the Asia/Pacific region, the number of vehicles delivered declined by around 6% year-on-year, to 10,530 trucks, driven by factors such as weaker demand in China

In Africa, the number of deliveries was stable at the previous year's level, at 5,320 trucks. In the Middle East region, deliveries were down by around 10% to 5,220 trucks.

While we are starting to see a slowdown in growth, our forecast for 2019 remains positive in most of the regions.

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Europe Report

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India and South America will continue to show the strongest performances, growing around 10%. Europe and North America will show a timid growth, but will show growth. On the other hand, China will suffer a decrease in production and demand, with all the top producers reducing their outputs. New state policies are driving the market toward smaller and more efficient vehicles, more investments in rail transportation and thus a decline for Heavy duty vehicles demand.

Despite that, given the strong presence of Traton brands in Europe and south America, we expect the group to continue its growth in 2019, with Scania and Volkswagen vehicles leading the flock. —EM

Deutz Creates e-Deutz Engine Portfolio

Read The Article

PSR Analysis: Most engine manufacturers have embarked on a race to deliver full working hybrid and electric engines ahead of competitors and to be ready for future policy changes. Although the policies haven't been announced, most engine manufacturers are spending a considerable amount of resources to cash in on this likely winning bet.

Although the finish line is still pretty blurry, each contestant is finding its own path to reach its goals. With this in mind we are going to look at how the German engine Manufacturer Deutz is approaching this new challenge.

To get a head start, rather than starting from scratch, Deutz bought another German firm, Torqueedo – a manufacturer of electric drive motors for watercraft. They produce everything from tiny fishing kayaks to trolling motors, rescue watercraft and large ferries. This acquisition gives Deutz industrial scale, “ready-made technology solutions for battery management, electric motors, controllers and the software that ties it all together,” says Michael Wellenzohn, a member of the Deutz board of management.

With access to this new technology and expertise, Deutz has developed prototypes of electric and hybrid engines. Deutz has demonstrated the new technology working in machines including two Manitou and two Liebherr telehandlers. Although these are still in the prototype phase, Deutz believes it will start production of hybrid and full electric products by 2019, and they will be on the market by 2020.

Deutz, like many other engine manufacturers, is not putting all its eggs in one basket; it also is researching and developing engines that run on renewable fuel technology including biodiesel, multi-fuel (CNG, propane and mixed fuels), hydrogen and synthetic fuels.

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Europe Report

Continued from page 15

Japan-based IHI has agreed to sell the commercial engine-focused small engine business of IHI's wholly-owned subsidiary IHI Agri-Tech (IAT) to U.S.-based Caterpillar.

Dr. Frank Hiller, Deutz's CEO, says these other renewable technologies will be the best option for certain industries to reduce greenhouse gasses and environmental problems. This multiple technology strategy (hybrid, electric and renewable fuels) is necessary due to the wide range of applications and power requirements in the off-road equipment industry. —**CB PSR**

Far East/Southeast Asia Report

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

小室明大 極東および東南アジア PSRリサーチアナリスト

Far East: Japan

IHI to Sell IAT Small Engine Business to Caterpillar



*Akihiro
Komuro*

Japan-based IHI has agreed to sell the commercial engine-focused small engine business of IHI's wholly-owned subsidiary IHI Agri-Tech (IAT) to U.S.-based Caterpillar.

The closing of the transaction is expected to take place at the end of December 2018. Furthermore, IAT's equity shares in its engine joint ventures with Caterpillar in England, the U.S. and China have been sold to Caterpillar, effective immediately.

Following the close of the transaction, the manufacture, sale and after-service of Shibaura engines that are currently performed by IAT will be taken over by a new-formed subsidiary of Caterpillar–Perkins Japan. This newly-formed subsidiary will be responsible for the continued manufacture, sale and servicing of products for customers of the small engine business.

Source: *Monitor Daily* [Read The Article](#)

PSR Analysis: The development cost compliant with strict exhaust gas regulation has expanded sharply, and it is afflicting manufacturers. The collaboration between IHI and Caterpillar has been close since several years and it was at a level to exchange opinions and to reflect on the product from the development stage. Caterpillar gained an engine that was easier to install on products, and IHI aimed to respond to the cost of securing the unit sales. Despite these hard efforts, this business transfer is symbolic of the difficulty of engine manufacturers to take exhaust gas control by only themselves.

The heavy industry conglomerate is actively reviewing the project to secure higher profitability. In the case of IHI, in order to allocate resources to their strengths, aviation engines and space fields, they have sorted out construction

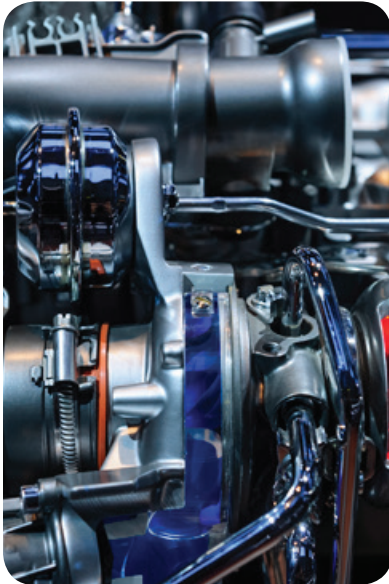
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Far East/Southeast Asia Report

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machinery business to Kato Works, selling garbage disposal business, closing shipbuilding factories, etc. It can be forecasted that we will see this kind of collaborate with other OEMs and promote business transactions often in the market in the future. **PSR**

極東：日本

IHIが産業用エンジン事業売却 米キャタピラーに

IHIは農機や建機などに使われる産業用ディーゼルエンジン事業を、米キャタピラーに売却する。売却額は100億円強。各国の環境規制の強化で開発コストが上昇しており、主力の航空エンジン事業に経営資源を集中する。同社は収益改善を見込めない建機や造船などの切り離しを進めており、今回のディーゼル事業売却で不採算事業の整理にメドがつく。子会社のIHIアグリテック（北海道千歳市）が手掛ける事業のうち、中小型ディーゼルエンジンの事業を譲渡する。日本国内でのエンジンの販売権や知的財産、米国、英国、中国にあるキャタピラー子会社との合併会社の持ち分などを売却する。

ニュースソース: 日経新聞, 2018年9月27日 [記事を読む](#)

PSR 分析: 段階的に厳しくなる排ガス規制適合のための開発コストは大きく膨れ、メーカーを苦しめている。IHIとキャタピラーとの協業は数年前から密接で、開発段階から意見を交換して製品に反映するレベルにあった。キャタピラーはより製品に搭載しやすいエンジンを調達し、IHIは販売台数を確保して増えるコストに対応する狙いがそれぞれあったわけだが、そのような懸命のアクションにも関わらず決定されたこの事業譲渡は、エンジンメーカーが1社単独で排ガス対策をする難しさを象徴している。重工業メーカーはより高い収益確保のための事業見直しを積極的に進めている。IHIの場合、彼らの強みである航空エンジンや宇宙分野にリソースを割くため、建機事業を加藤製作所に売却し、ゴミ処理事業の売却や造船工場の閉鎖など、整理を進めてきた。このような事業の統廃合と他社との協業、事業売買は今後も加速すると見て良い。 **PSR**

Far East: South Korea

Doosan Infracore To Supply Engines for ARBOS Tractors

Doosan Infracore Co., a South Korean construction heavy equipment maker, has sealed a deal to supply 27,000 diesel engines to Italian tractor maker ARBOS, further expanding its presence in the European machinery and equipment market.

Under the terms of the agreement, the Korean company will develop 1.8 to 3.4-liter class G2 engines for farm machines that meet the European Union's tougher 'Stage V' emission standards and supply 27,000 units to the Italian

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Far East/Southeast Asia Report

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tractor company for six years starting in 2020. The EU's stricter emission rule will take effect in January 2019.

Source: *The Construction Equipment News* [Read The Article](#)

PSR Analysis: The engine supply to ARBOS, Europe's top small tractor OEM, will greatly improve the Doosan brand presence in Europe. An LOI signing on this scale suggests that Doosan's engine is competitive in terms of cost. This is a big step for Doosan, which has already received support for construction equipment, to advance into agricultural equipment field. The agricultural machinery market is expected to grow globally. The fact that Doosan has secured a position in Europe where entry barriers are very high will have a positive effect on sales in markets where demand growth is expected in the future such as Southeast Asia and Africa. **PSR**


極東：韓国

斗山インフラコア、欧州小型トラクターのトップ企業にエンジン供給

斗山インフラコアはイタリアのトラクター生産会社であるアルボスとディーゼルエンジンの開発や供給のための協力意向書(LOI)を締結したと4日、明らかにした。今回のLOIの締結で、斗山インフラコアはヨーロッパの排気規制を満たす1.8~3.4リットル級のG2エンジンを農機具向けに開発、2020年から6年間で、アルボスに2万7000台あまりを供給することになる。アルボスは小型トラクター分野で欧州市場のトップ企業だ。従来の製品の商品性を高め、中型トラクター市場へ事業領域を拡大しようとする計画であることが分かった。

ニュースソース: 亜州経済, 2018年10月5日 [記事を読む](#)

PSR 分析: 小型トラクターで欧州のトップOEMとして知られるアルボスへのエンジン供給は、斗山ブランドの欧州でのプレゼンス向上に大きく貢献するだろう。排ガス規制先進国である欧州のOEMに採用されるということは、斗山製品のクオリティが十分にその基準を満たすことは言うまでもない。また、この規模でのLOI締結は斗山のエンジンがコスト的にも競争力があることを示唆している。たしかに農機市場はグローバルに成長が期待できるが、実際には飽和状態になっているリージョンも多い。参入障壁が非常に高い欧州で斗山が一定の立場を確保したことは、今後東南アジアやアフリカなど需要の成長が期待できる市場でのセールスにも好影響を与えるだろう。 **PSR**

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Far East/Southeast Asia Report

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Southeast Asia: Indonesia

AISI Expects 7% Increase in 2018 Indonesian MC Sales

The Indonesia Motorcycle Manufacturers Association (AISI) said it expects motorcycle sales this year will increase by 5%-7% (6.2-6.7 million units). They expect exports to increase 23% to 530,000 units. Sales in January to September were about 4.7 million units.

More than 60 companies are expected to participate in the motorcycle festival "Indonesia · Motorcycle Show (IMoS)" held Oct. 31 to Nov. 4. There were 34 exhibitors at the last show held two years ago. In addition to motorcycle manufacturers, affiliated companies such as motorcycle finance, lubricants and parts dealers will exhibit.

Source: *NNA Asia* [Read The Article](#)

PSR Analysis: Considering that their expectations were 3%-4% at the beginning of the year, this figure suggests Indonesia's willingness to purchase motorcycles is strong. The currency is stable, so that personal consumption is steadily growing. The increase in the middle-income group is significant, which is a welcome situation for the motorcycle market. The expansion of the ride share movement is regarded as a business that can be started with a small investment and this is also the reason for purchase. **PSR**

東南アジア:インドネシア

今年の二輪車販売台数は7%増、協会予想

インドネシア二輪車製造業者協会(AISI)は15日、今年の二輪車販売台数が前年比5~7%増の620万~630万台に達するとの見通しを示した。輸出台数は23%増の53万台に上ると予想している。AISIのヨハネス・ロマン会長は、消費者の購買力やコモディティー価格の上昇を背景に今年の二輪車市場は好調に推移していると説明した。1~9月の販売台数は約470万台だった。10月31日~11月4日に開催する二輪車の祭典『インドネシア・モーターサイクル・ショー(IMoS)』には62社が出展する。2年前に開催した前回の出展社数は34社。二輪車メーカーのほか、二輪車金融や潤滑油、パーツ販売店など関連会社が出展する。

ニュースソース: *NNA Asia* [記事を読む](#)

PSR 分析: 年初に彼らの予想が3~4%だったことを考えると、この数字はインドネシアの二輪車購買意欲が強いものであることを示唆している。通貨は安定しており、それによって個人消費も安定的に成長している。このことも購入を後押ししている。人口増はすでによく知られているが、特に中間所得層の増加が著しく、これは二輪市場にとっては歓迎すべき状況と言えるだろう。ライドシェアの拡がりは小額投資で始められるビジネスとみなされこれも購入の理由となっている。強い追い風が吹いている。 **PSR**

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The government's decision to exempt EVs and automobiles run on alternative fuel from permit requirements has pushed the demand for 3-wheelers in the country in the past 12 months driven.

India Report

By *Jinal Shah*, Regional Director, South Asia Operations

Piaggio Banks on Alternative Fuel Powertrains



*Jinal
Shah*

Piaggio is preparing BS VI 3-wheeler products, and aims to add a petrol and CNG engine to its four-wheeled mini truck segment, where the company is a minor player.

Read The Article

PSR Analysis: The government's decision to exempt EVs and automobiles run on alternative fuel from permit requirements has pushed the demand for 3-wheelers in the country in the past 12 months. It's especially popular in states such as Maharashtra, Karnataka, Andhra-Pradesh and Delhi. We believe the demand for 3-wheelers is likely to remain robust in the next 2-3 years, especially ones using alternative fuels.

The strategy of Piaggio to focus on alternative fuel seems well-timed, especially as it aims at Bharat Stage VI homologation, which comes into place at the beginning of 2020. We believe use of alternative fuels will be targeted towards the development of new vehicles and upgrading current models and will help Piaggio increase its market share from less than 10% today to double-digits in alternative fuel market going forward.

Two-Wheeler Prices Could Climb 10-15% After BS6

While the official transition to BSVI takes place April 1, 2020, companies plan to start migrating to the stricter emission norms earlier to prevent the build-up of heavy inventory of the outgoing BS4 products. **Read The Article**


PSR Analysis: Two-wheeled vehicles are the largest vehicle class in India, both in terms of vehicle population, and in new vehicle sales. India's two-wheeler production in 2020 could be around 26 million units, and it will be interesting to see how the commuter segment is impacted by price-rise of about 10-15%.

Two of the biggest technological changes in two-wheelers will be fuel injection and on-board vehicle diagnostics, which are being introduced for the first time in BSVI regulations.

Most of the Indian two-wheelers use carburetors, which are cost-effective, but in order to comply with BSVI norms, Electronic Fuel Injection (EFI) needs to be adopted. This is a critical item and localization would play an important role to control the cost impact on two wheelers going forward into the BSVI era. **PSR**

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Russia Report

By *Maxim Sakov*, Market Consultant, Russia

FAW May Start Passenger Car Assembly in Vladivostok



*Maxim
Sakov*

A Chinese company has offered to create JV in the Russian Far East for car production. Currently, the share of Chinese cars in the region is insignificant because of custom duties.

According to this offer, a car production plant would be built in the region. Joint car assembly would reduce the cost of Chinese cars by cutting custom duties, which is the main obstacle to sell the cars.

Russian officials have shown an interest in the offer. It's important to note that the assembly of FAW trucks is already performed in the region. **Read The Article**

PSR Analysis: Russian Far East is a specific region, and the vast majority of the cars there (about 85%) are used Japanese cars with right side steering wheel (in comparison, the share of such cars in Moscow and St. Petersburg is about 1%). Even barrier import duties have not stopped the flow of used vehicles from Japan. The reason? These used cars are extremely cheap and have good quality. Russian authorities are looking for a way to expel these cars from the market (direct ban could provoke riots in the region). Chinese companies, in turn, are seeking entrance to the Russian car market.


Ural Starts Production of On-highway Trucks

Ural has started mass production of Ural-Next 6X4 wheeled model, making its entry into the on-highway truck segment. This segment is new for the plant, and expands opportunities for export.

The new truck family includes dumpers with 15.6 ton capacity and on-hwy tractors with full truck-and-trailer weight up to 62 tons. There also are plans to build up to 200 types of body on the new chassis.

The new trucks are powered by YAMZ engines, meeting Euro-5 emission standards. **Read The Article**

PSR Analysis: Only a few years ago, the Russian automotive industry did not produce on-hwy tractors at all. For cargo moving it used side/box trucks or imported models. Recently, KAMAZ began production of this type vehicle. Ural is the second domestic manufacturer to begin production of on-road tractors in Russia (besides foreign companies, which have production/assembly in Russia).

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Russia Report

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Yaroslavl Motor Develops New Diesel Gen-sets

YAMZ has introduced a new range of gen-sets of its own development. Gen-sets with power output from 40 to 400 kWt will be used as main or reserve power sources in various applications. One new model was shown at the Agrosalon 18 trade fair. The AD-100 gen-set (100 kilowatts) comes with an 8 cylinder YAMZ engine of 14.86 liters. Service life is 25,000 hours. Mass production will be started in 2019. **Read The Article**

PSR Analysis: YAMZ is a main supplier of diesel engines for gen-sets in Russia. While its share in making finished product is relatively small, there are many companies that use YAMZ engines, repackaging them for sale to end-users. It looks like YAMZ is going to take part of this business for itself. This move could initiate changes in the Russian gen-sets market in low and medium power segments. **PSR**

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