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In This Issue

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中国語や日本語で読みたいという読者様のニーズに応えるために、アジアから中国語と日本語の記事を提供しています。中国語をご希望の方は**こちら**を、日本語をご希望の方は**こちら**をクリックしてください。

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Power Systems Research Webinar Series

Power Systems Research and HDMA Plan April Webinar

On Wednesday, April 21, 2021, representatives of Power Systems Research and the Heavy Duty Manufacturers Association will present a one-hour webinar discussing important industry trends and forecasts. Details regarding content and registration will be available closer to the event.

The webinar is another in a series of webinar presented by Power Systems Research with industry partners. Most recently, PSR joined with JCB Power Systems to present a free one-hour webinar discussing production forecasts and emissions details for the Construction Industry in Europe and North and South America. **Presentation materials available**.

Interested in presenting a webinar with Power Systems Research? **Details here**. **PSR**

North America Report

Truck News: Ask The Expert

By Chris Fisher, Commercial Vehicle, Senior Commercial Vehicle Analyst

Chris Fisher

What changes do you see in the PSR Truck Production Index in the fourth quarter compared to the third quarter of 2020?

Overall, we are seeing stronger momentum for commercial truck orders and sales which bode well for production in Q1 2021.

Supply chain issues will impact short term production as companies are still having difficulty with staffing numbers and various virus protocols that disrupt production. These problems are expected to continue throughout at least the first half of the year.

What about year over year?

With the exception of China, PSR believes the worst of the pandemic effects on the commercial truck market are behind us and while we do not expect production levels to generally return to pre-pandemic levels, we believe demand will be significantly higher in 2021 than last year.

What are the primary drivers causing these changes?

In general, the "shock and awe" of the pandemic has passed and the global economies are generally stronger than they were six months ago. Freight continues to be hauled and fleets need to be upgraded. While we expect the

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Truck Production Index

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negative effects of the pandemic to remain throughout the year, it is not nearly as dramatic as it was last year.

What is your outlook for global production of medium and heavy trucks?

Overall, this year is expected to be an improvement in commercial vehicle demand compared with 2020. While the Coronavirus is expected to remain through much of this year, the negative impact on the global economy should not be as significant as it was in 2020.

In Europe, the fourth quarter showed significant improvement in sales and orders which will bode well for production this year. The medium and heavy bus segment also showed significant improvement toward the end of the year. While the Coronavirus will continue to be a drag on the regional European economies, PSR expects the worst to be behind and gradually improving demand is expected moving forward.

In South America, Medium and heavy commercial vehicle production declined by approximately 27% in 2020 with heavy truck and buses seeing the sharpest decline. Much like North America and Europe, demand started to improve during the fourth quarter of 2020 and PSR expects production to increase this year to the level seen in 2019 prior to the Coronavirus outbreak. Production will be driven by both the domestic and export markets this year. Over the longer term, Brazil is expected to implement the Euro VI emission regulations in 2023 which will likely drive a pre-buy in the second half of 2022. Basically, the higher cost of the Euro 6 emission technology is not offset by any significant improvement in fuel economy.

In Japan and Korea, PSR expects medium and heavy commercial vehicle production to improve by double digits this year. However, it will likely be 2022 before demand improves to replacement and expansionary levels. Export demand is expected to improve quicker than domestic demand in both Japan and South Korea.

What do you see for North America truck production?

Commercial truck demand rebounded in the fourth quarter of 2020 particularly in the class 8 segment. Order rates for class 8 came in stronger than expected which bodes well for production through at least the first half of 2021. However, there is concern surrounding the supply chain. Currently, the supply chain is struggling with the surge in demand and companies are having difficulty hiring enough workers. Imported parts are also experiencing delays at the ports. The supply chain issues are expected to continue through the first half of the year.

Freight rates remain relatively high and this trend is expected to continue throughout the year. Strong consumption, inventory restocking and solid growth in single family housing builds are positive factors affecting the trend in freight. Congress passed another round of economic stimulus which will also bodes well for commercial vehicle adoption. While the Coronavirus continues to negatively impact the economy, PSR does not believe the effects will cause a significant slowdown in demand this year. Increasing vaccinations should also lead to a

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Many large municipalities have already implemented or suggested legislation requiring transit buses to be converted to all electric between 2024 – 2040.

stronger economy heading into the latter half of the year.

Looking ahead, we believe heavy truck production will continue to improve through at least 2023 as truck capacity rebalances in the market.

President Biden is pushing climate changes in the US. How will emissions changes in the US affect truck production?

In the near term not much at all. However, if the administration effectively implements much of their agenda, we can expect heavy investment in infrastructure which would include recharging and refueling stations for electric and hydrogen fuel. Currently, the largest barrier to adoption for regional and long-haul trucks is the lack of infrastructure for these technologies. In the meantime, we should expect stricter emission regulations on diesel powered trucks at both the Federal and State level.

On a side note, many large municipalities have already implemented or suggested legislation requiring transit buses to be converted to all electric between 2024 – 2040. Since many of the barriers to adoption have been overcome, I suspect this conversion will ultimately happen.

You said China might be an exception to general growth trends globally. What's happening in China?

Medium and heavy commercial truck production achieved record levels in 2020 primarily driven by the government requirement to replace all China 3 and lower emission vehicles with vehicles meeting China 5 or China 6 emission requirements. This along with stricter punishment of overloaded vehicles not only in big cities, but also in some small cities and rural areas drove the sharp increase in demand. This will result in a significant drop in truck demand this year. The heavy truck segment will see the most significant decline. The China 6 emission regulation is scheduled to be implemented on July 1st which may cause some level of pre-buy in the first half of the year followed by a sharp drop off in demand in the latter half of 2021.

2020 was a very bad year for India, but there was strong recovery in production during the fourth quarter. What do you see happening to commercial vehicle demand in 2021?

Coupled with price hikes from the BS-6 emission regulations, increased fuel prices, economic recession, lower freight demand and driver & labor shortages the headwinds in the commercial vehicle industry were significant and 2020 marked the worst year for the Indian commercial vehicle market. Driven by social-distancing and work-from-home policies, there was little demand for buses from the education sector. The transit bus segment was also one of the worst hit with our estimates of only 10-15% in-service transit bus fleets were operational.

While demand was terrible during most of last year, the Indian commercial truck segment showed significant improvement during the fourth quarter of 2020. In the medium and heavy truck segment, class 6 & 7 performed better

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due to the rapidly expanding e-commerce sector and improving automotive sales. The utilization rate of the class 8 segment is improving but has yet to cross the threshold to trigger significant new long-term demand. The bus segment continues to struggle primarily because of the work from home push by the government, travel restrictions and people generally avoiding public transportation. We expect that trend to continue this year.

The industry is likely to witness a headwind due to overcapacity in the market, continued driver shortage along with rail transport gaining traction. The recently launched PLI scheme will provide an additional push to the market from 2022 (production linked incentive scheme).

While there are still issues negatively impacting the commercial vehicle market, the higher order levels in the fourth quarter continuing into the first quarter of this year signals much higher production levels. **PSR**

NA Electric Motorcycle Segment Growing

By Michael Aistrup, Senior Analyst

Michael Aistrup

Motorcycling in America is changing as industry leaders and new technology competitors are trying to attract newer/younger riders who want something different from Harley-Davidson's big cruisers or screaming Japanese and European performance bikes.

The changes are in response to younger riders who are attracted to the efficiency and fun of two-wheel travel associated with e-motorcycles, while older riders are losing interest, or simply becoming unable to ride any longer.

At present, e-motorcycles remain a niche market. Riders are typically city dwellers in their early 40s--slightly younger than the average age of a U.S. motorcycle rider, which is 47, according to the Motorcycle Industry Council's U.S. Motorcycle Owner Survey — and uses the bike to commute.

"Millennials and Gen X'ers, they aren't always seeking to make motorcycling a lifestyle, where it's kind of everything you live for," said Tim Buche, past President and CEO of the Motorcycle Industry Council. These younger riders are looking for motorcycles suited to a more casual relationship rather than a serious commitment. The kind of people who "tend to have both the discretionary income to go and just buy a brand-new electric motorcycle and have the mindset to be an early adopter of technology," according to Sam Paschel, CEO of Zero Motorcycles.

Almost 70% of millennial riders are interested in e-motorcycles, according to the 2018 Motorcycle Industry Council ownership survey. Women, who account for 20% of motorcycle riders, make up 40% of e-motorcycle owners.

Like electric cars, e-motorbikes make up about 1% of the national market for new vehicles purchases, but the segment is expected to grow as battery prices come

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down in price. E-motorcycles currently cost about 50% more than their g-powered motorcycles but are expected to reach price parity by 2025.

Motorcycle sales, particularly in the United States, have been struggling ever since the 80's. The industry is hoping that e-motorcycles might be the key to attracting new riders. According to Market Research Future, they expect the global electric motorcycles market to witness a 10.35% CAGR from 2019 to 2025.

The market for electric motorcycles in the Asia Pacific is projected to rise at the highest CAGR. This is due to increasing concerns about carbon and greenhouse gas emissions, which contribute to a rise in the need for fuel-efficient vehicles. The growing population, the rise in traffic congestion, the dropping prices of electric motorcycles, and increasing environmental issues add to the growth in the Asia Pacific sector. Constantly growing demand for e-motorcycles in developing countries, such as India and Thailand, is expected to provide growth opportunities in the global market for e-motorcycles.

Factors Contributing To The Growth of Electric Motorcycles

- A supported network of DC Fast Charge (DCFC) stations that are easy to locate with mobile telephone Apps. Riding an e-motorcycle to a station and charging up is easy with many convenient stations.
- Regenerative braking.
- Low noise levels.
- With an electric motor, there's no need to shift gears, which is easier for American drivers to ride.
- Electric motorcycles also qualify for federal and state tax credits, like those for electric cars, although in smaller amounts. Any e-motorcycle that can go at least 45 mph is eligible for a 10% tax credit, up to $2,500.
- The bikes also don't have hot engines and exhaust pipes that can burn riders, especially kids.
- They are built for higher speeds, quick acceleration and high-speed handling at the same time they are capable of slow urban trips.
- Some industry experts estimate the cost of running an e-bike is about one-tenth that of a conventional motorcycle — but you can still ride longer on a tank of gas.

Some Tradeoffs:

- E-motorcycles have the same disadvantages as e-cars. The price for a new car is very high and the range is limited. E-motorcycles can only accommodate a small battery, so they have a lot less range than traditional motorcycles. The range diminishes greatly during high-speed highway cruising because the bike's e-motor has to compensate for increased wind resistance against the rider's body.
- The distribution network, especially for smaller less known brands, is still very low and concentrated in major metropolitan cities.

The effect of COVID-19 on the overall motorcycle industry is high due to the closure of manufacturing facilities, which has resulted in a decline in motorcycle

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Despite the COVID-19-related production problems, 2021 will see the best year-to-year growth in 25 years, according to the International Snowmobile Manufacturers Association (ISMA).

and e-motorcycle production. Delays in product launches and delays in distribution and final assembly also impede the growth of the industry.

In the future, when shutdowns are lifted, the rebound of the manufacturing sector is expected to improve the production and sales of e-motorcycles.

E-powered motorcycles are catching on at a rapid pace. These new motorcycles may not have the deep, rumble of their gas-engine counterparts, but the payoff for comes in cost efficiency, eco friendliness and quick acceleration. **PSR**

DATAPOINT: *Global Snowmobiles*

107,250

By Carol Turner, Senior Analyst, Global Operations

107,250 units is the estimate by Power Systems Research of the number of Snowmobiles to be produced in Canada, Finland, Italy, Japan, and the U.S. in 2021.

This information comes from industry interviews and from two proprietary databases maintained by Power Systems Research: **EnginLink™** , which provides information on engines, and **OE Link™**, a database of equipment manufacturers.

Market Share: With 52% of total units produced, Bombardier Recreational Products (BRP) leads in production of Snowmobiles. In second position is Polaris Industries with 19%. Arctic Cat is third with 17%.

Trends: Production of snowmobiles decreased nearly 19% in 2020 from 2019. Despite the COVID-19 shutdowns at Arctic Cat/Textron and Polaris, production was back on track for the winter '21 season.

Despite the COVID-19-related production problems, 2021 will see the best year-to-year growth in 25 years, according to the International Snowmobile Manufacturers Association (ISMA). Expect snowmobile production to gain 16% in 2021 over that of 2020.

The demand for snowmobiles is skyrocketing. Recreationalists are choosing snowmobiling as a new hobby since many other activities have been shut down by COVID-19 restrictions.

The decline in 2020 was attributed to the lack of snowfall in many key riding areas worldwide, especially during the months from January - March. Despite weather related issues, manufacturers introduced an array of new models that will entice buyers.

Even though consumers struggle with economic difficulties and fuel prices are unstable, it appears that when it snows, powersports enthusiasts still want to play. Expect production of snowmobiles to increase an additional 10% by 2025. **PSR**

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Europe Report

By Natasa Mulahalilovic, Marine Pleasure Boat Analyst Europe - Europe

Volvo Penta: Sustainability First, Zero-Emissions by 2050

Natasa Mulahalilovic

Volvo Group announced that the company will focus on sustainable solutions in all business areas, from trucks and buses through construction to its marine division. The group objective is to become a zero-emission company by 2050, at the latest.

As part of this changeover, the Volvo Penta division, the world leader in marine engine and propulsion systems, is cutting its outboard engines production and sales. This reverses a major acquisition the company made in 2017.

Seven Marine was acquired by Volvo Group in 2017 in a move to enter and expend the outboard engine market globally. Top models of Seven Marine, 527 hp, 577 hp and 627 hp, were launched in 2018 and quickly were recognized as the most powerful outboard engines in the world.

Volvo Penta integrated all Seven Marine outboards within the company's Electronic Vessel Control (EVC) and associated solutions such as DuoProp in 2019. The Volvo Penta Integrated Outboard Experience was launched with the Tiara Sport 38LS. The system won the NMMA Innovation Award in the outboard category at the 2019 Miami Boat Show. Serial production was started at the Volvo Penta gasoline engines plant in Tennessee in February 2020.

However, despite this evident success, Volvo decided to stop selling and marketing the Seven Marine engines after Jan. 1, 2021. Further investments in the outboard segment do not meet the group's new priorities. Deemed non-sustainable, the Volvo Penta outboard range will be discontinued once the 2020 demand is met.

Committed to achieve the ambitious goal of greater fuel efficiency and the zero CO2 emission in three decades, Volvo Penta is focusing now on new technologies and further development of its Integrated Propulsion System (IPS) and sterndrive engines. The electric, hybrid and renewable fuels are in the center of the research and development of sustainable solutions.

In order to give more visibility to the initiative, Volvo Penta is participating in the Science Based Targets movement promoted by the non-profit World Resources Institute. SBT provides companies with a clearly-defined path to reduce emissions in line with the Paris Agreement goals. **PSR**

Sources: *Volvo Penta Press Releases, IBI News, Boating, Trade Only Today*

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The demand for motorcycles remains high and the forecast is 10% growth over 2020.

Brazil/South America Report

By Fabio Ferraresi, Director Business Development South America

Fabio Ferraresi

New Wave of COVID-19 Cuts Brazil Motorcycle Production by 50%

Manaus-AM had the biggest impact of COVID 19 in Brazil and it is where Honda and other Motorcycle OEMs have production plants. Honda, responsible for over 80% of the production, had to stop twice in January due to the pandemic effects. The consequence is that the production in January 2021 fell by 50% when compared with January 2020 and by 27% when compared with December 2020.

Source: Press Release **Read The Article**

PSR Analysis: The demand for motorcycles remains high and the forecast is 10% growth over 2020. These stops are punctual. Volumes should be recovered as pandemic effects slow down during 2021 with the vaccines and the growth forecast is kept so far.

Vehicle Exports from Brazil Grew 22% in January

With 25,000 units shipped in January 2021, exports of vehicles grow 21.9 % compared with January 2020 and 24.2% compared with December 2020. The volume surprised ANFAVEA, which was expecting worse numbers because of the effects of the pandemic in the South American Countries, traditional destinations for Brazilian vehicle exports. **Read The Article**

PSR Analysis: This result is positive compared to our initial forecast of a slow recovery of South American countries. On the other hand, the production in countries such as Argentina and Colombia has been affected by a shortage of raw materials, creating an opportunity for imports from Brazil in these countries, even with lower demand. **PSR**

TAIWAN REPORT

By Erik Martin, Director – Asia Region

Gogoro Network Powered through Innovative Solutions

To date, there have been over 151 million battery swaps, an average of 2.8 per second

TAIPEI (Taiwan News) — Imagine being asked to design and build a totally new, green energy infrastructure for an entire country — from scratch.

This was the goal given to Gogoro Network (GN) General Manager Alan Pan (潘璟倫) by Gogoro founder and CEO Horace Luke (陸學森). Sitting down for an

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Taiwan Report

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interview with Taiwan News, Pan described some of the issues electric scooters faced before Gogoro, including limited charging solutions due to lack of space in Taiwan and high battery and maintenance costs.

Erik Martin

The battery alone accounted for as much as a third to one half of an electric scooter's price tag, which when combined with the cost of replacing the battery every two to three years presented a significant hurdle to the widespread adoption of e-scooters. This led Gogoro to come up with a rather ingenious solution: the swappable battery station, or GoStation.

After developing the GoStation, Gogoro ran into another issue: how to sell battery-powered electric scooters without an energy system in place. So Pan was transferred to the energy services department and tasked with building GN.

With safety, reliability, scalability, and replicability in mind, Pan and his colleagues designed an open, wireless platform applicable to any city or country looking for innovative energy and transportation solutions.

Source: *Taiwan News* **Read The Article**

PSR Analysis: Two key challenges impacting the adoption of electric vehicles are range anxiety and charging time. Gogoro has addressed these issues by implementing a comprehensive plan that meets the needs of consumers in an affordable and practical way. By establishing their Gogoro Network (GN) nationwide, Gogoro has enabled riders in Taiwan to travel freely around the island without the fear of being stranded, and with the confidence that recharging during their journey will not result in long delays.

The Gogoro Network is an excellent example of developing infrastructure in concert with new products to achieve viability. Too often new product designs fail to incorporate practical factors and thereby never make it to market. And, in this field, excessive analysis over which charging method is best – fast-charge versus battery swapping - can delay decisions for years.

By committing to the battery swapping model, implementing it within a relatively small regional network, then investing the proper time and money to be sure all regulatory and technical hurdles were addressed, Gogoro was able to prove the concept in a matter of several years. That has now expanded nationwide to become a model for OEMs, battery makers, government agencies and forward thinkers to consider.

Success in the alternative energy world requires cooperation. Gogoro has partnered with several top motorcycle and scooter OEMs and a growing logistics firm to establish a critical mass for GN. Now, in cooperation with Taipower, Gogoro is working on expanding into the Vehicle to Grid (V2G) power sharing model. Such V2X technology is an important factor in the development of smart cities and may prove to be a vital part of the long-term power generation solution. Continued innovation will ensure Gogoro remains a principal player for years to come. **PSR**

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Far East: Japan Report

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

Honda Launches Electric Bike for Business

Akihiro Komuro

Honda announced the "GYRO e:" and "GYRO CANOPY e:" as planned commercial models of electric three-wheeled scooters for business use that use replaceable batteries. The new models will be marketed as the Honda e: Business Bike series together with the BENLY e: business electric two-wheeled scooter, which has been sold to corporate customers since April 2020.

The GYRO series will be used in many business applications such as deliveries. The GYRO series is a three-wheeled model with one wheel in the front and two in the rear to increase stability, and there is also a "CANOPY" model with a roof and wipers that can handle a little rain.

Major companies such as Japan Post and McDonald's Japan have already taken the lead in introducing commercial electric bikes for delivery and sales purposes. If the batteries can be replaced at convenience stores, the only question is the price. If it becomes possible to deal with issues such as running out of battery power, we can expect to see the spread of electric bikes among the general business population as well as in

Source: ***NetRabo*** (The original article was partially revised by the author.)

PSR Analysis: Honda's electrification of motorcycles began with the CUV ES in 1994. This model was sold on a limited lease basis, and this CUV ES was succeeded by the EV-neo, which was released in 2011. In the 2000s, many electric two-wheeled scooters were released by Yamaha, Suzuki, Pro Staff, Terra Motors, and other venture-backed manufacturers. However, the image of electric two-wheeled scooters deteriorated due to the appearance of low-quality models from foreign brands around the same time, and the domestic market almost disappeared, with only the E-Vino, introduced by Yamaha in 2015, fighting a lone battle. The question is whether the release of Honda's business-use EV scooter will be the catalyst to break out of this situation.

Currently, Honda, Yamaha, Suzuki, and Kawasaki have established a consortium for interchangeable batteries for electric motorcycles in April 2019 and are working on specifications and standardization so that interchangeable batteries can be used across manufacturers.

The wave of electrification is coming very fast, and motorcycles are no exception. In Taiwan, KYMCO and GOGORO have already released a number of interchangeable battery models to increase the number of users. In China, the number of EV scooters is exploding as engine models are banned in urban areas. Looking at these trends overseas, it must be said that Japanese motorcycle manufacturers are far behind the curve in electrification at the moment. It is often

Honda's electrification of motorcycles began with the CUV ES in 1994. This model was sold on a limited lease basis, and this CUV ES was succeeded by the EV-neo, which was released in 2011.

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said that four Japanese companies currently manufacture more than half of the world's motorcycles, but this situation is likely to change drastically in the next three years or so. **PSR**

極東 > 日本レポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

ホンダ、ビジネス電動バイクを発売

ホンダは、交換式バッテリーを使用したビジネス用電動三輪スクーターの市販予定車として「GYRO e:」「GYRO CANOPY e:」を発表した。これにより、2020年4月より法人向けに販売しているビジネス用電動二輪車「BENLY e:」とあわせてHonda e: ビジネスバイクシリーズとして展開していく。

GYROシリーズは配達などのビジネス用途で多く活用される。安定性を高める前1輪、後2輪の3輪仕様で、少しの雨ならば平気な屋根とワイパー付き仕様「CANOPY」もある。

配達や営業用途に向けた商用電動バイクは日本郵政や日本マクドナルドといった大手が既に率先して導入している。コンビニなどでバッテリーを交換できるならば、あとは価格が問題だ。バッテリー切れなどの課題へ対応できるようになれば、一般ビジネス層にも、また個人用モデルにおいても電動バイクの普及が進むことに期待できる。

出典: ねとらぼ (一部筆者により元記事内容を改編しました)

PSR 分析: ホンダの電動化は、1994年の「CUV ES」から始まった。このモデルは限定リース販売だったが、このCUV ESは2011年に発売した「EV-neo」に受け継がれた。2000年代に入ると、ヤマハやスズキ、プロスタッフやテラモータースなどのベンチャー系メーカーからも一斉に電動2輪スクーターが発売された。しかし、同時期に海外ブランドの低品質なモデルが出回って、電動2輪のイメージは悪化し、国内市場はほぼ消滅し、2015年にヤマハから登場した「E-Vino」だけが孤軍奮闘している状況だった。今回のホンダの業務用EVスクーターのリリースが、こうした状況を打破するきっかけになるかどうかが問われる。

現在、ホンダ、ヤマハ、スズキ、カワサキの4社は、2019年4月に電動二輪車用交換式バッテリーのコンソーシアムを設立し、メーカーを跨いで交換式バッテリーを利用できるように仕様や標準化を検討するとしている。

電動化の波はとても早く、二輪もその例に漏れない。台湾ではKIMCOやGOGOLO

がすでに交換式バッテリーモデルを多数リリースしてユーザーを増やしている。中国では都市部でのエンジンモデル禁止に伴ってEVスクーターが爆増している。海外のこうした潮流を見る限り、現時点での日本の二輪メーカーの電動化は相当遅れていると言わざるを得ない。現在、日本の4社で、世界全体の半分以上の二輪車を製造しているとよく言われるが、そうした状況は向こう3年程度で激変する可能性がある。**PSR**

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Far East: South Korea Report

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

Hyundai To Custom Design EVs for Each Customer

South Korea's Hyundai Motor Group is launching a new business to produce EVs to order, according to customer preferences. It is designed to be used for corporate purposes such as delivery and car sharing, and the body design and loading capacity can be flexibly changed to suit the intended use.

The company will take advantage of the characteristics of EVs, which have a higher degree of freedom in design than gasoline vehicles. The company will also introduce a business model that does not involve mass production to accelerate the growth of its EV business.

Kia, a subsidiary of Hyundai Motor Company, announced a "standard platform" with onboard batteries and motors. On top of this platform, the interior, including the driver's seat, cargo space, and body can be assembled according to the customer's needs. It is expected to be possible to increase the battery capacity for long-distance driving. The company expects its customers to include logistics companies, car-sharing services, and operators of small community buses. The timing and price of the business will be decided in the future, but it is rare for a major automobile company to develop an EV business where the specifications are drastically changed according to the customers.

Source: *The Nikkei*

PSR Analysis: The Hyundai Motor Group will take advantage of its collaboration with startups for this new business. The business model of freely changing the vehicle design will leverage the expertise of British EV maker Arrival, which invested 100 million Euros (about 12.5 billion yen) in 2020. The company has received an order for 10,000 delivery EVs from UPS, a major logistics company in the U.S., and the order value will reach one billion dollars. They are building a new plant in the US.

Not only Hyundai, but automakers' alliance strategies with IT companies and the enclosure of startups are intensifying. There are customized production methods as well, for example, custom-made mountings for commercial vehicles. But their concept is very different from the conventional concept of automobile production, which requires a large factory.

For the Arrival vehicle, there is no assembly line in the Arrival factory, but rather autonomous vehicles that move between booths to carry parts. The vehicle body is manufactured by joining extruded aluminum parts rather than metal stamping. It is based on a concept similar to manufacturing a smartphone. In fact, the owner of Arrival was once the founder of a Russian smartphone company. It remains to be seen on what scale Hyundai will implement such a concept in the future. But at least at this point, the wave of change is big enough to seriously consider such a concept. **PSR**

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極東 > 韓国レポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

現代自、顧客企業ごとにEV設計　デザインや性能柔軟に

韓国の現代自動車グループが顧客の好みに応じたEVを受注生産する新事業を始める。配送やカーシェアなど企業向けを想定し、車体デザインや積載量を用途に合わせて柔軟に変更する。ガソリン車に比べて設計の自由度が高いEVの特徴を生かす。大量生産でないビジネスモデルも導入し、EV事業の成長を加速させる。現代自傘下の起亜が、車載電池とモーターを搭載した「標準プラットフォーム」を発表した。この上部に、顧客の要望に応じて運転席など内装や荷台スペース、車体などを組み付けていく。長距離を走る用途には、電池容量を増やすといった対応も可能となる見通しだ。物流会社やカーシェアサービス、小型のコミュニティーバスの運営事業者などを顧客に想定している。事業の開始時期や価格などは今後詰めるとのことだが、自動車大手が顧客に応じて大幅に仕様を変えるEV事業を展開するのは珍しい。

出典: 日経 (一部筆者により元記事内容を改編しました)

PSR 分析: 現代自グループは今回の新事業のためにスタートアップとの連携を生かすことになるだろう。車体デザインを自由に変えるビジネスモデルでは、2020年に1億ユーロ (約125億円) を出資した英国のEVメーカー、アライバルのノウハウを活用する。同社は米国の物流大手UPSから配送用EVを1万台受注し、その受注額は10億ドルに達する。彼らは米国に新工場を建設中だ。

現代に限らず、自動車メーカーのIT企業とのアライアンス戦略やスタートアップの囲い込みは激化している。これまでも商用車では架装などのオーダーメイドはあったが、彼らの発想は今までの自動車生産のような大規模な工場を必要とするコンセプトからは大きく異なっている。アライバルの車両は、アライバルの工場内には組み立てラインはなく、ブース間を自律走行する車両が移動してパーツを運んでいる。車台は金属プレス加工をするのではなく、押し出し加工をしたアルミニウム部品を繋げて製造している。それはまるでスマートフォンを製造するようなコンセプトに基づいている。実際にアライバルの経営者はかつてロシアのスマートフォン企業を創業した経歴を持っている。

現代が今後このようなコンセプトをどのくらいの規模で実施していくのかはまだ分からない。だが、少なくとも現時点でこうしたコンセプトを真剣に検討するほど、変革の波は大きいということだろう。**PSR**

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SouthEast Asia: Indonesia Report

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

Indonesia, the world's largest producer of nickel, the raw material for EV batteries, announced a policy last year to ban exports.

Tesla Proposes Investment in Indonesia To Promote EVs

The Indonesian government announced on Feb. 5 that it had received an investment proposal from Tesla. The country is the world's largest producer of nickel, which is essential for the production of batteries for EVs. In order to promote the EV and battery related industries, Indonesia had invited Tesla to invest in the country.

Details of the talks between Indonesia and Tesla cannot be disclosed due to confidentiality agreements, but it is said that they have mainly discussed battery and energy storage solutions. The Indonesian vice-minister said, "If Tesla only wants to buy raw materials, we are not interested. The proposal is more than the procurement of raw materials and extends to energy storage systems such as MegaPack, PowerPack and Powerwall," he said.

Indonesia halted nickel exports in 2020. It aims to build an integrated nickel supply chain system, from mining to processing, to meet the demand for EVs. Tesla pointed out in 2020 that the cost of batteries remains a hurdle to expanding its business and revealed that it is looking for stable sources of nickel around the world.

Source: Reuters Japan (The original article was partially revised by the author.)

PSR Analysis: Talks between Indonesia and Tesla are still in the early stages of discussion, and details are still undecided. However, Indonesia, the world's largest producer of nickel, the raw material for EV batteries, announced a policy last year to ban exports. Since then, many companies, not just Tesla, have begun to explore opportunities to set up production bases in Indonesia. South Korea's LG Energy Solution plans to start building an EV battery plant in the first half of 2021.

China's CATL is also planning a similar project in cooperation with an Indonesian state-owned company. Hyundai Motor Company has also announced an investment of US$1.55b.

According to a Reuters report, Indonesia is increasing its nickel production capacity to 550,000 tons, up 46% from a year earlier. Nickel and cobalt are the main raw materials for batteries, and Indonesia is the world's No. 1 producer of nickel and the world's No. 2 exporter. Congo supplies 60% of the world's cobalt, but due to political instability, mining in Indonesia is expected to grow.

The drive by automotive companies to secure the resource will heat up further, which will further increase Indonesia's international importance and contribute to the country's development. Indonesia has a large population and strong domestic demand for automobiles. FDI in Southeast Asia as a whole has been declining due to the Corona disaster, but it will intensify in the future with or without the COVID-19 issue, especially for EV and battery production. **PSR**

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Southeast Asia Report

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東南アジア > インドネシアレポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

米テスラ、ＥＶ産業振興へインドネシアに投資を提案

インドネシア政府は2月5日にテスラから投資の提案を受け取ったことを明らかにした。同国はＥＶ用バッテリーの生産に欠かせないニッケルの世界最大の産出国である。ＥＶやバッテリー関連の産業を振興するため、テスラに投資を呼び掛けていた。秘密保持契約があるため、詳細は明らかにできないが、主にバッテリーとエネルギー貯蔵ソリューションについて協議してきたという。インドネシアの次官は「テスラが原材料の購入だけを望むのであれば、われわれとしては関心がない。原材料の調達以上の提案であり、蓄電システムのメガパック、パワーパック、パワーウォールなどにも及んでいる」と述べた。

インドネシアは2020年にニッケルの輸出を停止した。採掘から加工まで一貫したニッケルのサプライチェーン体制を構築し、ＥＶの需要に対応することを目指している。テスラは2020年、バッテリーのコストが依然として事業拡大のハードルになっていると指摘し、安定したニッケルの調達源を世界各地で探していることを明らかにした。

出典: ロイター日本語版（一部筆者により元記事内容を改編しました）

PSR 分析: テスラとの協議はまだ議論が始まった段階であり、詳細は未定だ。だが、EVバッテリーの原料となるニッケルの世界最大の産出国であるインドネシアは、昨年に輸出禁止の政策を発表した。それ以降、テスラに限らず多くの企業がインドネシアに生産拠点を設置する機会を模索し始めている。韓国のLG Energy Solutionは2021年上半期にEVバッテリー工場建設を開始する予定だ。中国のCATLも、インドネシアの国営企業と協力して同様のプロジェクトを計画している。現代自動車も1.55bUSドルの投資を表明している。

Reutersのレポートによると、インドネシアはニッケルの生産能力を前年比46%増の55万トンに増加させている。バッテリーの主な原料はニッケルやコバルトがよく知られており、インドネシアはニッケルで世界1位の生産量、世界2位の輸出量を誇る。コバルトはコンゴが世界の60%を供給しているが、政情不安から、インドネシアでの採掘が期待されている。

自動車関連企業による資源確保の動きは今後さらに加熱し、それはインドネシアの国際的な重要度をさらに高め、同国の発展に貢献するだろう。インドネシアは大きな人口を抱えており、国内の自動車需要も旺盛だ。東南アジア全体ではコロナ禍の影響を受けてFDIは落ち込んでいるが、ことEVやバッテリー生産に関してはCOVID-19の問題の有無にかかわらず、今後さらに激化する。**PSR**

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India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations.

Aditya Kondejkar

Union Budget 2021 Misses Mark for Autos

The Union Budget 2021 is very important since it comes during an unprecedented pandemic. The most significant pain points of the economy are the lack of demand and liquidity. The shrinking market's impact and the weak demand is evident after the Economic Survey said that the country would experience a current account surplus for the first time in 17 years.

The automotive industry is the key stakeholder of the country's economy. It suffered extensive sluggishness in the past 10-12 quarters after introducing GST, the new safety norms, insurance regulations, axle, and emission norms. These led to a hefty increase in purchase costs. The industry was waiting for direct announcements to reduce purchase cost and improve customer sentiment

Here are the key points with respect to the automobile industry

1. Voluntary scrappage policy. Positive Impact: Low to moderate

The announcement comes after a wait of over a decade. However, this has to be adequately incentivized. Further, to address the volume of scrap, the matching infrastructure has to be present in the country

2. Augmentation of public bus transport services. Positive Impact: Moderate to high

M&HCV segment was the hardest hit segment of the automobile industry. In the M&HCV segment, buses are the worst hit sub-segment, and its demand recovery is not near. Hence, solid support is required from the government to push demand. In this scheme, the government will provide funds of INR18,000 crore to support the augmentation of public bus transport services. The scheme will enable private sector players to finance, acquire, operate and maintain over 20,000 buses.

3. No relaxation of automobile GST. Negative Impact: Moderate to high

The automotive sector required an instant boost, especially for the commuter 2-wheeler and entry-level cars, decreasing GST from 28%. All the automotive products are currently taxed at the levels of luxury items.

4. No direct policy for EVs

It was disheartening to see no significant direct announcement for the promotion of EVs. Many state governments have rolled out their incentive schemes for investment and incentives for EVs. The sector was expecting significant investment in terms of charging infrastructure.

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India Report

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Transmash-Holding has several engine and OE plants in its portfolio. It includes such engine makers as Kolomna diesel and Penzadieselmash.

5. Rising fuel prices. Negative impact: Moderate to high

From Jan. 31, 2020, to Jan. 31, 2021, diesel prices soared by 20%, and petrol prices have spiked at 14%.

Fuel (petrol and diesel) currently attracts a total of almost 70% tax, including state, and central GST, which is playing a spoilsport for the overall economy and demand for automobile products. **PSR**

Russia Report

By Maxim Sakov, Market Consultant, Russia

Maxim Sakov

Transmash-Holding Purchases Rolls-Royce Plant in Norway

TMH-international, the international division of TMX, has agreed to purchase the British Rolls-Royce Group engine plant in Bergen, Norway. The plant makes Bergen diesel and natural gas engines.

Bergen includes metal processing, assembling, precise casting, repair workshops, design bureau and service network in seven countries.

With the purchase of Bergen Engines, TMH international is considering expanding into the global engine market. First, it would consider NG engines for isolated power systems, providing electric power in small population centers or large industrial enterprises.

Since being founded in 1946, Bergen has produced more than 7,000 engines, and 5,000 of them are still working. Today, Bergen Engines employs 900 workers.

Read The Article

PSR Analysis: Transmash-Holding has several engine and OE plants in its portfolio. It includes such engine makers as Kolomna diesel and Penzadieselmash. Therefore, one purpose of the deal may be to obtain technologies for HHP engines production. Bergen Engines generated sales of 239 million British Pounds (with losses of 18 million) in 2019.

Haval Recalls All F7 and F7x Cars

Haval Motor Manufacturing has recalled 16,075 cars F7/F7x, sold from May 2019 until January 2021. This affects about all the cars in the market.

A fuel system problem in some cars in low temperatures has caused several cars to catch fire in cold weather.

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Russia Report

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PSR Analysis: The recall campaign relates to all the cars produced in the Russian Haval plant since its opening in 2019. Currently there were several self-ignition cases on Haval cars in Siberia during recent cold weather of minus 40 degrees Celsius. OEM has agreed to replace damaged cars to the new ones or to make refund at customer's choice.

KAMAZ Intends To Double Production of Electric Powered Buses

In 2020, NEFAZ, a subsidiary of KAMAZ, made 202 electric buses. In 2021, it plans to double the production of this innovative transport.

Today, in Moscow has 400 working KAMAZ electric buses, half of which were supplied during 2020. "We can make machine, which became tech leader on domestic market. We could enter Moscow passenger transport market. It changes the scale of the business and our respect to own product," says KAMAZ general director Sergey Kogogin.

In regions where price is a key factor, the complicated machines are not so much in demand. Although electric buses are more expensive, they have an advantage on technical specifications. Nefaz has completed an annual business plan calling for production of 1,560 vehicles made at a profit. The plant makes eight buses per day, but next year they plan to double this volume.

Also, KAMAZ has a program calling for further development of a 9-meter bus; an 18-meter vehicle is assembled and being tested now. It's expected that this business will bring 30 Bln rubles in sales. (about 0.45 billion US$)

On top of this, reconstruction of a Sokolniki railcar repair plant is about to be finished. This plant is going to be an assembly site for electric buses in Moscow. It's planned to start working this March, with production capacity of 450 buses per year.

Read The Article

PSR Analysis: It appears, NEFAZ made 1,560 electric buses in 2020, and shipped 202 of them to Moscow.

Electric buses for large cities is a centralized, State-sponsored project. The public transport operators with large fleets have sufficient recourses for service and battery charge, and the fleet is concentrated in a limited area. So, the project has a good chance for success even with an unfavorable climate. **PSR**

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