

### In This Issue

**Edge Computing Brings Data Closer To Home**

**New PSR PowerTALK Podcasts**

**North America:** Hydrogen Fuel Cell Truck Happenings in Europe

**DataPoint:** NA Harvesters

**Europe:** Mercedes Grows in EV Bus Market

#### South America

- Rio Plans 100% EV Buses
- Goods Transported in Brazil Climb in 2021
- Protests Affect Columbia Vehicles Market

**Taiwan:** Next-Generation EV Battery Development Pushed

**Japan:** Komatsu and Honda Jointly Develop EV Excavator

**South Korea:** SK Plans To Develop Hydrogen Base in Ulsan

**Thailand:** GWM Opens Smart Factory in Thailand

**India:** Second Wave COVID Will Have Limited Impact on Ag

#### Russia

- Rostselmash Starts Building Tractor Plant
- Aurus Car Powered by Hydrogen Created in Russia
- Tonar Shows First Articulated Dump Truck

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## PSR Research Report

By *John Krzesicki*, Business Development Manager

### Edge Computing Brings Data Closer To Home



*John  
Krzesicki*

It's often said that there's nothing new under the sun, only new ways of doing old things. That may be especially true in how we handle data.

Ever since Power Systems Research began tracking global production of engines and powertrains in 1976, its analysts have been alert to new trends surrounding power and data movement.

Today, as three essential metrics in data handling change— cloud costs, volume and processing time—, the structure of data networks also is changing. In many cases, it's not practical to send vast amounts of data to the cloud to be processed and then wait for the results. Now, it's often necessary to have smaller data centers located near the activity, at the edge of the action, if you will.

 [Click Here To Go To Page 1](#)

## **Database Update Report**

*Continued from page 2*



Consider automated vehicles. In a traffic situation with a high volume of automated vehicles transmitting data for processing, it's necessary to have instantaneous response times for each vehicle's data. Further, as that data is "use" data, there is no need for it to move to the cloud and move out of the cloud adding to the cloud bill. Many companies are repatriating their data from the cloud due to these costs alone.

Expanding further on the high volume of automated vehicles transmitting data at the same time, consider hundreds of automated vehicles moving on a roadway simultaneously within the same small area: what happens if many of them want to switch lanes or change speeds at **exactly the same time**? It's necessary to have virtually simultaneous responses for requests from all these vehicles. That's a problem that will severely test cloud computing; a pragmatic solution to this type of challenge requires many data centers near the roadways to handle the high volume of requests instantaneously.

Edge data centers also feature the concept of many microgrids, not a small number of wide-spread grids where a failure could disrupt large areas and hundreds of thousands of individuals. Adding to the case for increased use of microgrids are the aspects of sustainability and environmental stewardship that are only growing in importance and often easier to accomplish in smaller footprints.

There are growing advantages and applications for edge data centers.

These Edge data centers have specific needs that are like large data centers but at a smaller scale. Think power. Think cooling. Think storage. Think transmission. Think security. Edge data centers offer a resiliency boost as they also provide geographic diversity and a lowering of risks related to local power outages.

The concept of edge computing is not new, but the need for this approach is growing every day. The idea of edge computing comes from the Content Delivery Networks (CDN) developed in the 1990s to deliver heavy volumes of data for website and video applications from edge servers located close to users.

In the 2000s, applications were added to these data centers, thus creating essential commercial edge computing services.

As trends point towards a greater penetration and adoption of technologies requiring edge data centers, Power Systems Research analysts continue to maintain a close focus on the products and equipment that will be impacted by these trends. We realize that the way technologies are deployed in the field will ultimately impact future demand within the powered equipment markets as OEM's and various supply chain companies navigate the path forward. There are bound to be changes and detours along the way, but it is certainly helpful to step back and observe the roadmap that appears to be in front of us and anticipate the changes ahead. **PSR**

[↑ Click Here To Go To Page 1](#)

*In 2020 production of Harvesters in NA decreased 17%. Production is expected to increase 19% in 2021 over 2020.*

## **DATAPOINT: NA Harvesters**

### **550**

*By Carol Turner, Senior Analyst, Global Operations*

550 units is the estimate by Power Systems Research of the number of Harvesters to be produced in North America 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:** Dominating the NA market for Harvester production is Deere with 50.5% of total units produced. In second position with combined plant total of 20% is Oxbo “International; third is Flory with 13%.

**Trends:** In 2020 production of Harvesters in NA decreased 17%. Production is expected to increase 19% in 2021 over 2020. The Ag industry has fluctuated over the years and demand for new products has declined. Due to falling commodity prices in recent years, farmers/cultivators can’t afford new equipment and have spent years of refurbishing existing units.

Uncertainties of COVID-related factors led farmers avoid spending nominal profits on new machinery. Over the past several years, the dramatic fall in net farm income in 2015 and 2016 seems to be leveling out at a lower level. However, America’s farmers are enduring the impact of a continuation of the current trade war with China.

On the flip side, the harvester production increase is attributed to the desire for new machines to increase productivity and to end up with a profitable yield. Expect production to fluctuate over the next 3-5 years with a slight gain of 5% by 2025. **PSR**

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## **North America Report**

### **Hydrogen Fuel Cell Truck Happenings in Europe**




*Chris  
Fisher*

*By Chris Fisher, Senior Commercial Vehicle Analyst*

We have heard during the past few years that battery electric commercial trucks will ultimately replace the diesel-powered internal combustion engine for commercial trucks. At some point in the future this might be true for short and regional haul freight carriers, but what about the long-haul heavy truck segment?

Currently, the lack of charging infrastructure, range anxiety and the extreme weights associated with the batteries will be a significant deterrent to mass adoption of long-haul battery electric trucks.

 [Click Here To Go To Page 1](#)

## North America Report

Continued from page 4

However, hydrogen fuel cell trucks for long-haul applications appear to be a viable option in this segment. Even though fuel cell trucks currently have a greater range and lighter weight than battery electric trucks, they have the same problem as the electric trucks due to a lack of infrastructure.

According to a Hydrogen Council study, in 2019 there were approximately 170 operational hydrogen re-fueling stations in Europe with a goal of adding 3,700 stations by 2030. Increasing the number of re-fueling stations to that level seems like a lofty goal and the question is how will they possibly achieve this? The EU will likely provide subsidies for the infrastructure, but it will be the private sector that will likely drive this.

Earlier this year, Shell and Daimler announced the rollout of a hydrogen-based trucking initiative in which Shell will initially establish a hydrogen-refueling network which joins the Port of Rotterdam with Cologne and Hamburg, thus creating an infrastructure corridor.

Daimler plans to introduce hydrogen fuel cell trucks to customers starting in 2025. The corridor is expected to include 1,200 kilometers with 150 hydrogen re-fueling stations. Daimler plans to introduce approximately 5,000 heavy duty fuel cell trucks by 2030. This is a good initiative, but more of these types of ventures will be needed for mass adoption of hydrogen fuel cell trucks to take place.

In April 2021, Daimler and Volvo announced a joint venture to manufacture hydrogen fuel cells for trucks in Europe starting in 2025, and they called upon European Union policymakers to boost incentives for climate-neutral technologies. The plan is to begin testing fuel cell trucks in 2023 or 2024 and launch mass production by the end of this decade.

Daimler and Volvo are also pushing the EU to add incentives including taxing carbon and emissions trading to make up for the higher cost of climate-neutral trucks. Daimler and Volvo have also cited the need for 300 high-performance hydrogen refueling stations for heavy-duty vehicles by 2025 and 1,000 stations by 2030.

Both companies have stated that battery electric trucks will work for short haul applications, but hydrogen fuel cells should play a major role in the longer haul segment. It should be noted that Daimler and Volvo will continue to be competitors even though they share this joint venture.

The takeaway from these initiatives is that Europe is starting to organize and focus on the need for additional hydrogen fueling infrastructure to help meet their climate objectives for the next decade. **PSR**

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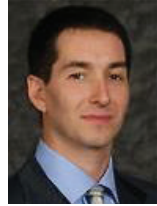
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## Europe Report

By *Emiliano Marzoli*, Manager European Operations



*Emiliano Marzoli*

### Mercedes Grows in EV Bus Market

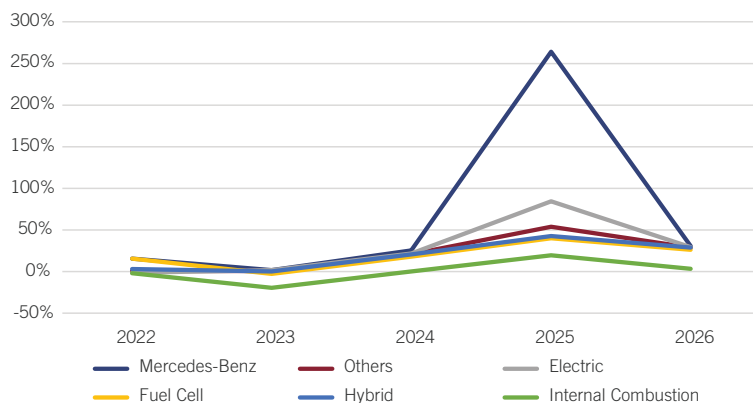
While smaller players are struggling to remain competitive in the EV bus space, Mercedes-Benz is targeting more clients and more volumes.

Mercedes-Benz has handed over one eCitaro G electric articulated bus with solid-state batteries each to Hamburger Hochbahn and Verkehrsbetriebe Hamburg-Holstein. The two new electric articulated buses each have seven battery packs with solid electrolyte and an energy content of 441 kWh, allowing up to 200km range, depending on operational conditions.

The vehicles will be charged at the depot. 18 meters long, the buses will carry 100 passengers on the Hamburg roads. In the coming months, Mercedes will supply another 60 plus buses to the two transportation companies in Hamburg. Both companies have been ordering EV buses only since 2020. **Read The Article**

**PSR Analysis:** Battery electric, (solid, or other types of batteries), present the most positive outlook in Europe according to **CV Link™**, our commercial vehicle and buses production database. While Internal combustion buses will decrease at a -1% CAGR in the next five years, their Battery alternative will grow at a 19% CAGR.

**European EV Bus Forecast**



Source: **PSR CV Link™**

We think Mercedes-Benz will outperform the market by a wide margin, with a staggering 38% growth, positioning it as the fastest growing manufacturer between 2021 and 2026. While this is undoubtedly impressive, it must be said that Mercedes-Benz is currently trailing in the race for EV Buses supremacy in Europe. In fact, even with its strong forecast, it won't be able, according to our analysis, to close the gap with the market leaders in the next five years. **PSR**



[↑ Click Here To Go To Page 1](#)

*The Mayor of Rio de Janeiro has announced a package of alternative power measures and goals with two important milestones for 2030 and 2050.*

## Brazil/South America Report

*By Fabio Ferraresi, Director Business Development South America*

### Rio de Janeiro Plans 100% Electric Buses by 2050

The Mayor of Rio de Janeiro has announced a package of alternative power measures and goals with two important milestones for 2030 and 2050. Here are the main goals affecting the mobility and transportation industry:

#### 2030

- Replace 20% of Public Service of Bus Transportation by Zero Emission Vehicles.
- Reduce by 10% the average time of commuting by public transportation.
- Increase by 400% the number of trips by bicycle.
- Reduce by 20% the emission of GHG.
- Reach 100% of city regions with selective refuse collection.

#### 2050

- Neutralize GHG emission
- 100% of the Transit Bus Fleet is Electric.

**Source:** *Diario do Transporte* [Read The Article](#)



*Fabio  
Ferraresi*

**PSR Analysis:** The Climate Plan announced by the mayor goes beyond electrification and has a positive impact on urban mobility and society, especially when looking to 2030, but the effectiveness is questionable when looking to 2050.

PSR believes that it makes sense to think about vehicle electrification on fixed routes and known destinations, such as for transit buses. However, for the long term, there are several alternative propulsion technologies competing as the best alternative to provide lower emissions of greenhouse gases, particulates and other pollutants, ones that are potentially more economical and sustainable. These could have a broader and more positive impact on society.

The best technology is still uncertain and will be defined according to the evolution of several technologies in the coming years and the availability of infrastructure that allows their introduction. A more adequate path than the definition of technology is the definition of maximum limits for the emission of greenhouse gases and pollutants per kilometer.

It is still unclear whether Rio de Janeiro will set the electrification of 100% of the fleet with a battery solution (BEV) or if it will leave it open for an electric drive train solution with fuel cell power supply. This is a technology that possibly could mature by 2050 with primary sources well aligned with the natural resources of the Brazilian energy matrix, with abundant and competitive natural gas and an important presence of Ethanol.

[↑ Click Here To Go To Page 1](#)

## South America Report

Continued from page 7



Therefore, for 2050, simply stating that the city of Rio de Janeiro will electrify 100% of its fleet seems like a remarkable effort, but it may be premature and superficial. The only certainty is that the matter will be reviewed, better defined and detailed latter.

## Goods Transported in Brazil Increases in 2021

From January to April, the amount of total of goods transported in Brazil was R\$ 2.9 trillion, while in the same period of 2020 it was R\$ 2.1 trillion, an increase of 39%. This metric is used as a barometer for the Brazilian economy.

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

**PSR Analysis:** This result is aligned with what we see in the sales of new trucks and trailers and confirms our increase in FY 2021 sales and production. Part of the increase is due to inflation in local currency, but part is due to good results in Agribusiness and Mining. Other segments of the economy have had a lower increase because of COVID19 if compared with 2020, when the uncertainty in March and April had a higher impact than in 2021.

## Protests Affect Columbia Vehicles Market

Sales of vehicles in Colombia were affected by protests and roadblocks in May. Because of the protest, dealers were closed and vehicles are blocked at the ports of Cartagena and Barranquilla. Even with the reduction from April to May, when 14,700 units were sold, below the 18,000 in April, the YTD result in 2021 is 50.2% better than 2020.

**Source:** *AutoData* [Read The Article](#)

**PSR Analysis:** The recovery of the Colombia economy, seen in light of the vehicle market, is faster than expected, even with the continued health crisis due to the pandemic and the social and politic problems. For the full year, there is a significant amount of uncertainty with a bias for increase in the forecasts. **PSR**

## Taiwan Report

By *Erik Martin*, Director – Asia Region



*Erik Martin*

## Taiwan Pushing into Next-Generation EV Battery Development

**TAIPEI.** As electric vehicle (EV) development becomes a global effort, batteries that play a vital role to EVs' cost-performance ratios are a focus to manufacturers with ambitions to expand in the EV market...

Taiwan's battery industry may not be backed by well-known brands and abundant natural resources. Nevertheless, a large part of Taiwan-based battery suppliers

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## Taiwan Report

Continued from page 8

*Most manufacturers have high hopes for solid-state batteries to replace lithium-ion batteries. Solid-state batteries use solid electrolyte instead of liquid one to significantly reduce the risks of short circuits and accidents.*

have been assembling battery modules for Taiwan's ICT industry. For example, Simplo, Dynapack and Celxpert with a long-term focus on manufacturing battery modules for consumer electronics such as notebook only started to set foot in EV battery solutions in recent years...

Batteries for future EV applications are expected to feature higher energy density, faster charging and discharging time, lighter weight and friendlier costs. Whether lithium-ion batteries and LFP batteries can maintain their leading positions at the moment in the EV market still remains to be seen...

Most manufacturers have high hopes for solid-state batteries to replace lithium-ion batteries. Solid-state batteries use solid electrolyte instead of liquid one to significantly reduce the risks of short circuits and accidents. By packing higher-power anode and cathode, solid-state batteries also enable higher energy density, allowing them to outperform ternary lithium-ion batteries in terms of charging time, working temperature and cell longevity.

In view of the multiple benefits of solid-state batteries, Toyota, Volkswagen, Nissan and GM are all engaging in the development of solid-state batteries. Foxconn, the initiator of the MIH Open Platform Alliance, reiterated its plans to introduce demo solid-state battery products by year-end 2021 and launch commercialized solid-state batteries by 2024...

It will be difficult to catch up with or compete against international manufacturers that have long been devoted to lithium-ion battery development if Taiwan only now starts to build its own patent portfolio from scratch. Taiwan should also seek joint development opportunities from international manufacturers. By leveraging Taiwan's accumulated experience and technological strength in the ICT sector to help expand the applications for solid-state batteries, Taiwan-based battery suppliers still have a shot at establishing market presence.

**Source:** DIGITIMES (by Ninelu Tu) [Read The Article](#)

PSR Analysis: Taiwan is forging an important path forward in the development of EV batteries by exploring technologies that can compete with the lithium-ion batteries currently on the market. Companies with prior experience manufacturing cells for hi-tech communications companies are finding opportunities in the EV sphere, and are using a combination of experience, technical expertise, and ingenuity to catch up relatively quickly.

A key aspect of this advancement is the focus on solid-state batteries. The potential for solid-state batteries to outperform lithium-ion batteries in terms of energy density, longevity, charge time, cost and safety makes this juice worth the squeeze. Cooperative efforts now underway further improve the chances for success on both technologically and financially.

Foxconn's MIH Open Platform will engage hundreds of companies in the expansion of EV production. But it is their work on solid-state batteries, as well as that being carried out by Pro-Logium and other Taiwanese companies that may bring us into a new era that has the greatest impact on adoption of EVs far beyond Taiwan's borders. **PSR**

 [Click Here To Go To Page 1](#)

## Far East: Japan Report

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



*Akihiro  
Komuro*

Komatsu has announced that it plans to develop an electric excavator in cooperation with Honda and bring the product to the market during FY2021. The two companies will also jointly develop electric excavators up to the 1-ton class and will also collaborate on services such as battery replacement for construction equipment.

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

**PSR Analysis:** As mentioned in the **April issue of PowerTALK™ News**, four Japanese motorcycle manufacturers, Honda, Yamaha, Suzuki and Kawasaki, have agreed to share the same battery specifications for electric motorcycles. The joint development announced this time will benefit from Honda's knowledge from its extensive battery research. The interchangeable type has the advantage of shortening the waiting time for recharging, which is an advantage for construction equipment. Japan's small construction equipment is highly regarded worldwide, and Komatsu must be looking to expand overseas. **PSR**

### 極東 > 日本レポート:

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#### コマツ、ホンダと電動ショベルを共同開発

6月10日、コマツはホンダと共同で電動の小型ショベルを開発すると発表した。コマツのショベルで最も小型な機種に、ホンダの着脱式交換バッテリーを搭載して電動化する。2021年度中の市場投入を目指す。さらに1トン級までの電動ショベルも共同で開発するほか、建機のバッテリー交換などのサービス面でも連携を進める。

**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: 4月号のPowerTALK™ News**でも触れたが、ホンダ、ヤマハ、スズキ、カワサキの二輪車メーカー4社は、電動バイクのバッテリー仕様を共通化することに合意した。今回発表された共同開発には、バッテリーの研究を重ねてきたホンダの知見が生きるだろう。交換式は充電の待ち時間を短縮できるメリットがあり、これは建設機械には優位に働く。日本の小型建機は世界的にも高評価であり、海外展開も視野に入れているはずだ。 **PSR**

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## Far East Report

Continued from page 10

*South Korea's SK Group has announced plans to build a 140,000 square meter hydrogen fuel base in Ulsan. A liquid hydrogen production plant will be built, and a hydrogen-fueled power plant will also be constructed.*

## Far East: South Korea Report

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

### SK Plans To Develop Hydrogen Base in Ulsan

South Korea's SK Group has announced plans to build a 140,000 square meter hydrogen fuel base in Ulsan. A liquid hydrogen production plant will be built, and a hydrogen-fueled power plant will also be constructed.

With the participation of Lotte Chemical, the project aims to promote the accumulation of hydrogen-related industries in the city. SK Gas will be the main proponent of the project. The company plans to invest 2.2 trillion won (about 216 billion yen) over the next five years to build infrastructure for the generation, storage, and transportation of hydrogen energy in anticipation of its widespread use, and has also announced plans to build 100 hydrogen filling stations in South Korea by 2030.

The complex will also have facilities to receive LNG vessels and to extract and liquefy hydrogen from LNG. It will use a technology that generates hydrogen by reacting natural gas with steam at high temperature and pressure. The CO<sub>2</sub> emitted in the process will be recovered and stored to produce hydrogen. The company will establish a joint venture with Lotte Chemical for hydrogen-related technology within this year.

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

**PSR Analysis:** You can find hydrogen-related news almost every month in Korea, but SK's aggressive investment stands out in particular. SK has invested 18 trillion won (1.7 trillion yen) for the development of hydrogen infrastructure over the next five years, and 1.6 trillion won in Plug Power, a US fuel cell manufacturer. The city of Ulsan is home to Hyundai's flagship plant, and it is almost certain that this will become the cluster for the hydrogen business in Korea.

If you look for global FCV success stories, California and South Korea are probably the two most popular. Both have a large number of FCVs on the road. Right now, the real choices for FCVs are Toyota, Honda, and Hyundai. Chinese manufacturers may catch up in the future.

Europe and the United States are in a situation where they are almost completely devoted to EVs. The FCVs being explored by Japan and South Korea have yet to reach the stage of widespread use, but from a long-term perspective, the day may come when these investment efforts will be rewarded. **PSR**

## 極東 > 韓国レポート:

SK、蔚山に水素拠点の整備計画 ロッテケミカルも参画

韓国SKグループが蔚山市に14万平方メートルの水素燃料基地を整備する計画

[Click Here To Go To Page 1](#)

## Far East Report

Continued from page 11

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を明らかにした。液体水素の生成工場を建設し、水素を燃料とした発電所も整備する。ロッテケミカルも参画し、同市に水素関連産業の集積を進める狙い。SKガスが事業主体となってプロジェクトを推進する。同社は今後5年間で2兆2000億ウォン（約2160億円）を投資する計画で、水素エネルギー普及を見越した生成・貯蔵・運搬といったインフラを整える。2030年までには韓国国内に水素充填所100カ所を構築する計画も明らかにした。複合団地にはLNG船の受け入れ施設を建設し、LNGから水素を抽出し液化する設備も導入する。天然ガスを高温・高圧の水蒸気と反応させて水素を発生させる技術を使う。その過程で出るCO2を回収・貯蔵することで水素を生み出す。ロッテケミカルとは年内に水素関連技術の共同出資会社を設立する。

**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:** 2021年に入ってから韓国を観察するとほぼ毎月水素関連のニュースが見つかるが、特にSKの積極的な投資が目立っている。インフラ整備に今後5年間で18兆ウォン（1兆7,000億円）、米国の燃料電池メーカーであるプラグパワーにも1兆6,000億ウォンを出資している。蔚山市は現代自動車の旗艦工場があり、ここが韓国における水素事業の集積地になることはほぼ間違いない。

グローバルでFCVの成功事例を探すと、ZEV規制のカリフォルニア州と韓国が挙げられるだろう。ともに多くのFCVが走っている。今、FCVの実質的な選択肢はトヨタかホンダ、そして現代自動車となっている。今後は中国メーカーが追い付いてくるかもしれない。乱暴な言い方だが、現在の欧州と米国は、ほぼEVに一边倒という状況だ。日本と韓国が模索しているFCVはまだ普及ステージには至らないが、長期的見地に立った場合、こうした投資の努力が報われる日が来るのかもしれない。 **PSR**

## SouthEast Asia: Thailand Report

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

### GWM Opens Smart factory in Thailand, Renovates GM's Factory

China's Great Wall Motor (GWM) has announced the official opening of a plant in Thailand. The company acquired the plant from General Motors (GM) in 2020 and has been working to make it smarter by installing advanced AI-based equipment. It is the company's first smart factory to be opened in Southeast Asia. The amount of investment for the renovation has not been disclosed, but the company has indicated that it plans to invest 22.6 billion baht (about 79 billion yen) in Thailand.

The production capacity is 80,000 units per year, and it is expected to produce HVs first. In the future, the plant will also produce EVs. The company plans to allocate 60% of the vehicles produced to the Thai domestic market and 40% for export to neighboring countries in Southeast Asia and Australia.

GWM announced in March that it would open 17 showrooms in Thailand, and it plans to increase the number of showrooms to 30 by the end of 2021, aiming to

 [Click Here To Go To Page 1](#)

## Far East Report

Continued from page 12

*Chinese brands are challenging the Southeast Asian market, where Japanese brands have long held an overwhelming share. Thailand in particular is a stronghold of Japanese automakers.*

capture a share of the Thai market where Japanese cars account for about 90% of the market. The company has production bases mainly in China, but also in Malaysia and Ecuador. The plant in Rayong Province is its first production base in Thailand. The company plans to position Thailand as its production and sales base for electric vehicles in Southeast Asia and increase its presence in the region.

### Source: The Nikkei

**PSR Analysis:** Chinese brands are challenging the Southeast Asian market, where Japanese brands have long held an overwhelming share. Thailand in particular is a stronghold of Japanese automakers, and we are at a crossroads to see how the market share structure in the region will change in the future, or whether it will remain the same.

Unlike other Southeast Asian countries such as Malaysia, Thailand did not have a national car concept to manufacture cars on its own and has been building its industry by accepting foreign automakers.

The first Japanese automaker to enter the country was Toyota, which established its Bangkok office as a sales base in 1957. Toyota and Nissan set up their production bases in 1962, followed by Honda and Isuzu due to the Thai government's policy of inviting them to the country. Toyota was aware of the need to localize its business from an early stage and had a long-term vision for the development of the entire Southeast Asian region. Honda positioned itself as an export base in the region and started out with two-wheeled vehicle related business.

From the mid-1960s onward, Japanese manufacturers began to play a major role in the Thai automobile industry, replacing European and American manufacturers. Subsequently, Thailand overcame the currency crisis of the 1990s and 2000s and succeeded in developing local parts manufacturers with international-level automobile production capacity and the ability to supply parts for international-level automobiles. As such, Thailand's automobile manufacturing industry, which has historically had a close relationship with Japan, may undergo a major change in the future. Great Wall Motor's entry into the market may be a trigger for this.


In 2017, the Thai government set the industrial goal of "Thailand 4.0". This is aimed at attracting foreign investment in high-value-added, cutting-edge industries to further upgrade domestic industry. Within this Thailand 4.0, the government plans to make Thailand a production base for electric vehicles, with the aim of popularizing electric vehicles in the country and expanding exports.

Of course, government subsidies and tax incentives for companies moving into the country are already in place. Great Wall Motor will manufacture HVs and EVs at this Thai plant and will compete head-to-head with Japanese manufacturers. The biggest focus will be on price. It is a well-known fact that the Southeast Asian market is particularly strict about costs. If they can introduce high quality eco-friendly vehicles at a reasonable price, it could be a big threat to other automakers. The current automotive market is undergoing a major transition where anything can happen in any sense, and of course Southeast Asia is no exception. **PSR**

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 [Click Here To Go To Page 1](#)

## Southeast Asia Report

Continued from page 13



## 東南アジア > タイレポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

### 長城汽車、タイにスマート工場開設 GMの工場を改修

6月1日、中国の長城汽車はタイに工場を正式開設すると発表した。2020年に米ゼネラル・モーターズから工場を取得し、AIを使った先端設備などを導入してスマート化を進めていた。東南アジアでのスマート工場の開設は同社として初という。改修の投資額は明らかにしていないが、これまでにタイに226億バーツ（約790億円）を投じる計画を示している。工場の生産能力は年間8万台で、まずはHVを生産する見通し。将来的にはEVも生産する。生産した車は6割をタイ国内向け、4割を東南アジアの周辺国やオーストラリアへの輸出向けに振り向ける方針だ。長城汽車は3月にタイで17のショールームを開くと発表していた。2021年内にも30店舗を増やす計画で、日本車のシェアが約9割を占めるタイ市場でシェア獲得を狙う。

同社は中国を中心に、マレーシアやエクアドルなどに生産拠点を構える。タイではラヨン県の工場が初の生産拠点。タイを東南アジアにおける電動車の生産・販売拠点と位置づけ、東南アジアでの存在感を高める。


**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:** 長らく日本ブランドが圧倒的なシェアを保持してきた東南アジア市場に中国ブランドが挑戦している。特にタイは日本の自動車メーカーのお膝元とも言える牙城であり、同国でのシェア構造が今後どのように変わっていくのか、また変わらないのか、非常に大きな岐路にあるともいえる。

そもそもタイはマレーシアなどとは異なり、自国で自動車製造を行うという国民車構想を持たず、国外の自動車メーカーを受け入れることで産業形成を図ってきた。日系自動車メーカーの進出は、1957年にトヨタが販売拠点となるバンコク営業所を置いたことに始まる。トヨタと日産は1962年に生産拠点を構え、次いでホンダ、いすゞがタイ政府の誘致政策により進出した。トヨタは早い段階から事業の現地化を意識しており、東南アジア地域全体での展開を踏まえた長期的なビジョンを持っていた。ホンダは同地域の輸出基地として位置付け、2輪車関連の事業からスタートした。1960年代半ば以降は欧米系メーカーに代わり、日系メーカーがタイ自動車産業において大きな役割を果たすようになった。その後タイは1990~2000年代の通貨危機を乗り越え、国際水準の自動車生産能力を持ち、国際水準の自動車に部品を供給できるローカル部品メーカーを育成することに成功した。このように、日本とは歴史的にも蜜月関係にあるタイの自動車製造産業が今後大きく変化する可能性がある。長城汽車の進出はそのトリガーになるかもしれない。

2017年にタイ政府は「Thailand 4.0」という産業目標を掲げた。これは国内産業の更なる高度化のために高付加価値化、先端型産業の外資誘致を狙ったものであり、このThailand4.0のなかで、電動車両の国内普及と輸出拡大を目指す



 [Click Here To Go To Page 1](#)

## Southeast Asia Report

Continued from page 14

て、タイを電動車両の生産拠点とする計画だ。もちろん政府の補助金や進出企業への税制優遇などの仕組みもすでに存在している。長城汽車はHVやEVをこのタイ工場で製造するとしており、日本のメーカーと真っ向勝負するかたちになる。

最大の焦点は価格になるだろう。特に東南アジア市場はコストに厳しいことは周知の事実である。リーズナブルな価格で高品質な環境車を市場投入できれば、それは他の自動車メーカーにとっては大きな脅威となり得る。今の自動車市場はあらゆる意味で何が起きてもおかしくない大転換期を迎えているが、もちろん東南アジアもその例に漏れない。 **PSR**

## India Report

By *Aditya Kondejkar*, Research Analyst – South Asia Operations.



*Aditya  
Kondejkar*

### Second Wave COVID Will Have Limited Impact on Ag Sector

"COVID-19 cases started spreading in the rural areas in the month of May, with the beginning of the month of May, and agriculture activity in the month of May is bare minimal, particularly land-based activities," Niti Aayog Member (Agriculture) Ramesh Chand. **Read The Article**

**PSR Analysis:** The second wave of COVID-19 started spreading in the rural areas in May 2021, but agriculture activities in May are minimal, and are mainly land-based activities. Agri activities peak in March or the middle of April, after which it drops significantly and again peaks with the arrival of monsoon.

COVID cases surged from the second week of April until the 3rd week of May. So, even if there is less availability of labor in May till mid-June, it won't hamper the agri activities. Reverse migration will likely follow the same trend followed a year back. The Labour force is moving to rural areas as there has been a lot of increase in COVID-19 cases in urban areas, and these laborers are willing to work in the agriculture sector for livelihood. Hence, the large segment of rural income, remains intact and rural demand on that count will not be affected.

Post-first-wave, agriculture activities propelled the overall economy and drove the automotive sector. Historically it is evident that good Agri income leads to the healthy production of two-wheelers. Furthermore, in the past few years, we have seen an increased penetration of passenger vehicles in rural areas. So the segment of the on-road vehicle is likely to benefit to some extent. **PSR**

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## Russia Report

By *Maxim Sakov*, Market Consultant, Russia

### Rostselmash Starts Building Tractor Plant in Rostov-Don



*Maxim  
Sakov*

Russia's largest maker of AG machines – Rostselmash Group of Companies – this month starts construction of a tractor plant located near Rostselmash's main production site. Rostselmash plans to invest US\$ 66 million (5 Bln Rubles).

Construction must be completed within two years, and the plant will reach its production capacity in 2023. The plant's capacity is 3,000 machines per year.

The plant will consist of a production building of 62,000 sq. meters, and a building for engineering and commercial departments. Total territory of new plant will reach 14 hectares. Rostselmash plans to assemble five tractor models with rigid and articulated frame.

Rostselmash plant is controlling 70% of grain-harvesting machines in Russia and about 17% of World market. Rostselmash Group consists of 17 companies located on 11 production sites in 5 countries.

#### Read The Article

**PSR Analysis:** This project apparently is targeted to finally shift production of Versatile products from Canada to Russia. The shifting started in 2016, and now Rostselmash makes more than 1,500 Versatile tractors per year in Russia.

### Aurus Car Powered by Hydrogen Created in Russia

NAMI (Automotive Research Institute) has developed a prototype Aurus car powered by hydrogen fuel, according to Russian Minister of Industry and Trade Manturov during the launch of mass production of the Aurus Senat model. According to the minister, this is the only project in the world in the premium car segment.

The price of base Aurus car will be US\$ 240,000 (18 million Rubles). Next year it's planned to start mass production of Aurus Commendant SUV.

Mass production just started in Elabuga. Production capacity of the plant is up to 5,000 cars per year.

#### Read The Article

**PSR Analysis:** Aurus is a top luxury car model, developed in Russia by NAMI. It's used by the Russian president and top State officials during protocol events, including parades, ceremonial receptions and visits. It has a look similar to the Rolls-Royce Phantom and is equipped with a domestic hybrid 600 hp motor. It's unknown whether the hydrogen modification will come to serial production.

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 [Click Here To Go To Page 1](#)

## Russia Report

Continued from page 16

*Tonar is targeting for about 25%+ of the articulated trucks sales market in Russia. Current sales volume of such trucks here is 150-200 vehicles.*

## Tonar Shows First Articulated Dump Truck

The development was conducted with support of the Ministry of Industry and Trade. Ministry subsidized R&D expenses of US\$ 800,000 (60 million Rubles).

The model, called “Tonar-35” reflects the number of tons of cargo it can lift. It has an Cummins QSZ13 engine of 450hp/2100N.m. As an option, it’s possible to install a YAMZ-6585 of 420hp. It has an automatic transmission Allison 4500. Besides engines and some reducers, the T-35 is all assembled of Russian components.

The weight of the vehicle is 30 tons. The bed has a volume of 20 cubic meters. The OEM now is preparing a 40-ton modification.

The prototype has been under development for about a year. Tonar is targeting for about 25%+ of the articulated trucks sales market in Russia. Current sales volume of such trucks here is 150-200 vehicles. **Read The Article**

**PSR Analysis:** This article is interesting as an actual example of State financial support of construction machine makers. For the creation of new components, the State has provided a significant sum of money to bring the work to life. **PSR**

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