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Alternative Power Report

By *Guy Youngs*, Forecast & Adoption Lead



*Guy
Youngs*

240 Ton Electric Mining Truck Can Charge in 30 Minutes

A 240-ton mining haul truck is about to be fitted with a 1.4 megawatt-hour (MWh) prototype battery system that global green energy company Fortescue has developed with equipment maker Liebherr.

UK-based engineering company WAE Technologies, (acquired by Fortescue in March 2022), completed and delivered the battery system to Fortescue's workshop in Perth, Australia. The battery will be assembled and installed in the mining haul truck before it's transported to the Pilbara in Western Australia for onsite testing this year.

The battery system marks several firsts for an electric mining haul truck battery: In addition to having energy storage of 1.4 MWh, it also has the ability to fast-charge in 30 minutes, and it can regenerate power as it drives downhill.

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

PSR Analysis: This is a good view of the potential for all mining trucks, but it should be noted that a lot of these huge mining trucks are diesel-electric to start with, (a diesel generator powering electric drives), so this is a matter of replacing the generator with the battery pack. They also can recharge on the way down, so the battery size can be relatively smaller. **PSR**

Study Shows Plug-in Hybrids Dirtier than We Thought

Plug-in hybrids pollute up to three times more than advertised, even when fully charged, and emit five to seven times as much CO₂ when the engine is running, according to a new study commissioned by Belgian NGO Transport & Environment (T&E) and conducted by the University of Technology in Graz, Austria

The study measured emissions from three popular models: the BMW 3 series, Peugeot 308, and Renault Megane. Like many plug-in hybrids, these cars started as gas/diesel-powered models and then a battery was added on to improve emissions testing performance and mileage

Each of the vehicles were tested in real-world situations, in and around Graz, Austria. In all of the tests, the cars performed worse than official WLTP ratings would indicate and in fact T&E tested the cars in their all-electric modes as well and found them lacking. This is not the first time T&E has done a similar study. In 2020, it commissioned another test on the BMW X5, Volvo XC90 and Mitsubishi Outlander, all of which, again, polluted much more than official testing suggests

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

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Alternative Power Report

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PSR Analysis: The article concludes (amongst other things) that PHEVs should not be treated as zero emission and that privately owned PHEVs should not receive purchase subsidies. PHEVs are an attractive solution for automakers and drivers because they represent a middle-ground which allows for emissions reductions but doesn't require nearly as many manufacturing or habitual changes from those respective groups, and they reduce emissions as compared to gas- or diesel-only cars when used correctly. However, both ICCT and T&E's recommendations point out – it still seems apparent that BEVs are the better choice. **PSR**

From Diesel to DC

For a long while, it looked as if hydrogen fuel cells would be the technology of choice for emissions-free road transport. However, truck manufacturers and freight forwarders recently turned their attention to battery-electric vehicles.

For logistics companies, the shift to zero emissions will be difficult. While it only takes a few minutes to top up the tank of a truck with diesel, it takes hours to fully charge the battery of an EV, which presents a real challenge for logistics businesses with zero-emission aspirations.

Changing the type of drive unit and expanding charging capacity at the depot are associated with these high risks for freight forwarders; not least, because the companies often lack expertise in this area.

The consumption of a tractor unit shows that electricity is also no longer a minor issue. On average, the vehicle covers just over 200,000 km per year. Logistics company, Dachser moves around 4,000 such trucks. If they were all battery-powered, annual consumption would amount to 700 GWh.

Source: *PV Magazine* [Read The Article](#)

PSR Analysis: This articles examines the move to battery powered trucks which is potentially very difficult with current high energy costs. Solar panels on the roofs of depots will potentially mitigate part of this cost but they themselves have an up front capital cost too. **PSR**

Volvo Unveils Electric Concrete Mixer Truck

Best known for its world-class transport solutions, Volvo unveiled its first commercial electric truck –the Volvo FL Electric – in 2019, this was followed by the Volvo VNR Electric in 2020. Volvo introduced three 44-ton electric trucks this past September, some of the heaviest in its line up, bringing its portfolio to six commercial EV trucks, designed to cover everything from city distribution and handling to construction transport and regional hauling.

Volvo's latest zero-emission heavy-duty solution, the FMX electric concrete mixer truck, is a big step toward eliminating emissions in the construction industry. Volvo says the EV truck will begin operating at a ready-mix concrete plant in Spandau in Berlin this month

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Alternative Power Report
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The growth of drivers for the Motorcycle industry come from the requirement for cost-effective private transportation among people around the world.

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

PSR Analysis: The construction industry (and cement in particular) is one of the biggest culprits of toxic CO2 emissions due to the strenuous demands that are required in the industry, so Volvo's latest electric concrete mixer is massive news for the construction industry. Electrifying concrete transportation has been challenging due to the heavy loads and continuous mixing demands. **PSR**

Global Report

By *Michael Aistrup*, Senior Analyst

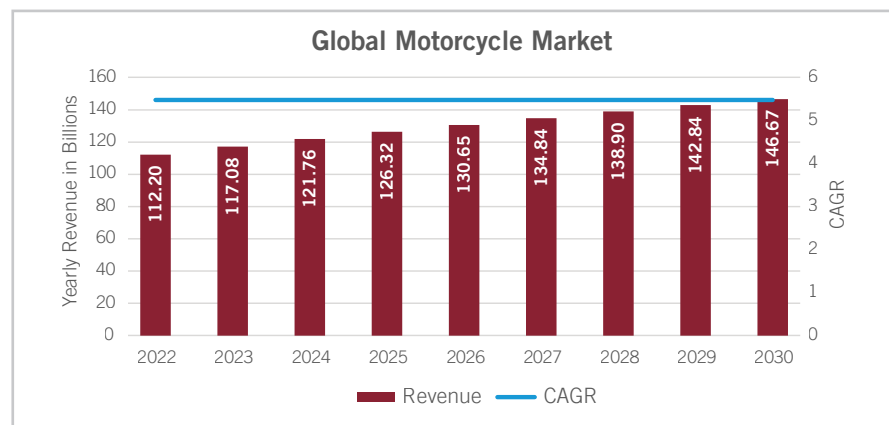
Global Motorcycle Market Grows at 5.48% Rate



Michael Aistrup

The global motorcycle market is growing at a healthy CAGR of 5.48%, according to Power Systems Research. Revenue for 2021 was approximately \$107.1 Billion and projected to be \$146.6 Billion by 2030.

Growth during this period is primarily due to increasing demand from China, India, and ASEAN countries. In addition, growth in traditional markets such as Europe and North America is also anticipated.



The growth of drivers for the Motorcycle industry come from the requirement for cost-effective private transportation among people around the world. Other drivers of growth are:

- **Increasing demand** for energy-efficient transportation supported by government tax rebates and subsidies for the use electric bikes.
- **The cost of** petroleum.
- **Increasing disposable** income of middle class consumers.
- **The rise in demand** for sports bicycles due to the increased use of bicycles in trekking and leisure activities. An increase in the number of cycling events and

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Global Report

Continued from page 4

biking expeditions to difficult terrains, including steep mountain ranges.

- **Development** of cutting-edge technologies to enhance safety, luxury, and comfort in motorcycles increases profitability.
- **Rapid urbanization**, change in lifestyle, surge in investments and increased consumer spending.
- **The increasing number** of appealing and high mileage motorcycles.

Restraints/Challenges faced by the Motorcycle Market. An increased risk of on-road accidents for motorcyclists is expected to slow market growth. The risk of death for motorcyclists is known to be 20 times that of car occupants.

High cost associated with sports bikes is projected to challenge the motorcycle market in the forecast period. However, various campaigns are initiated by governments and NGOs to use helmets and other protective measures while driving.

Regional Markets. Asian markets, including India, China and ASEAN countries are considered the largest market for motorcycles. With demand for motorcycles on the rise in developing countries, OEMs are gradually establishing new production facilities in these countries. This enables them to avoid import duties and enables them to maximize profits from the growing markets.

Investment in Electric motorcycles has pushed a rapid adoption across regions owing to their favorable environmental profiles and reduced operational costs per mile compared to traditional Internal Combustion Engine vehicles. This positive impact has helped investment in Electric Motorcycles. Investments being made by key industry players coupled with continued R&D efforts will further support market expansion.

Conclusion. Motorcycles have become one of the most preferred modes of transportation, especially among the middle-class population. Consumers are considering electronic bikes as an ideal substitute for smart cars, public transport and scooters. Around 200 million motorcycles are said to be in use around the world, or about 33 motorcycles per 1000 people. These bikes are highly beneficial in tackling traffic congestion as these bikes are smaller in size and attain higher speed. **PSR**

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North America Report

By *Chris Fisher, Senior Commercial Vehicle Analyst*

Charging Infrastructure Is Greatest Barrier to Adoption for BEV's

According to John O'Leary President and CEO of DTNA, charging infrastructure is the greatest barrier to adoption for battery electric heavy trucks. Speaking to journalists in Las Vegas, he said customers are happy with the electric vehicles

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North America Report

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Chris
Fisher

they have received but they are unable to expand their fleets with additional electric vehicles primarily due to the lack of charging infrastructure.

“Overwhelmingly, infrastructure is slowing us down in terms of EV deployment,” said Daimler Truck North America **President and CEO John O’Leary**. “Site prep, permitting, and construction delays all contribute to deployment times being measured in years, not weeks or months.”

“There’s a lot of will in the regulatory and political arenas to make that happen, but when you start talking about moving large megawatt lines of electricity around and building new substations, it just takes time,” he said.

Source: HDT

PSR believes other issues such as total cost of ownership (TOC), reduced payload for class 8 trucks, resale value and possible range issues in cold climates can also be significant barriers to adoption.

Disruptions in the supply of rare earth minerals may also cause problems in the near and medium term. Other types of technologies such as fuel cell electric vehicles (FCEV) hydrogen powered ICE’s along with continued fuel economy improvements to diesel ICE’s may also impact electric battery truck adoption moving forward. Many of these issues will not be fully understood until more field testing is complete.

PSR also believes that eventually these issues can be worked out but not as quickly as the industry and the various state and federal governmental agencies would like. Hopefully, the United States and Europe do not significantly reduce the fossil fuel infrastructure before renewable energy and zero-emission infrastructure is ready for prime time. **PSR**

DATAPOINT: N. America Dumpers/Tenders 1,790

By *Carol Turner*, Senior Analyst, Global Operations

1,790 units is the estimate by Power Systems Research of the number of Dumpers/Tenders to be produced in North America (United States and Canada) in 2023.

A Dumper/Tender is a vehicle designed for carrying bulk material, often on building sites. Dumpers are distinguished from dump trucks by configuration: a dumper is usually an open 4-wheeled vehicle with the load skip in front of the driver, while a dump truck has its cab in front of the load.

This information comes from industry interviews and from two proprietary databases maintained by Power Systems Research: **EnginLink™**, which provides

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Datapoint Report

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information on engines, and **OE Link™**, a database of equipment manufacturers.

Exports: Up to 15% worldwide.

Market Share: With 66% of total units produced, Country Home Products leads in production of Dumpers/Tenders in North America. In second position is Allen Engineering with 18%; third, is Indy Equipment with 10%.

Electric (Battery) Data: Manufacturers continue to develop battery-powered equipment to replace units powered by diesel and gasoline powered internal combustion engines.

2021: 103 battery-powered units

2022: 108 battery-powered units

2023: 132 battery-powered units

From 2021-2023 production of Electric (Battery) powered units gained nearly 5%. In 2023, production is expected to gain 22%.

Trends: In 2022, production of Dumpers/Tenders in NA increased 9% over production volume in 2021. Expect production to increase 7% in 2023 from that of 2022. The increase is attributed to gains in the global economy along with the demand for new products for construction and mining related activities.

The decline in 2020 was attributed to product saturation in the market and somewhat related to COVID-19 shutdowns, despite the fact that consumers/contractors were still purchasing products.

To date, many manufacturers are having longer production lead times due to lack of parts from suppliers and staffing shortages. Dumper/Tenders, commonly referred to as a Power Buggy, are sought after pieces of equipment because they are much faster than a conventional wheelbarrow and their use accelerates job site related activities. Expect production to increase an additional 5% by 2025. **PSR**

Brazil/South America Report

By *Fabio Ferraresi*, Director Business Development South America



Fabio Ferraresi

Hitech Electric To Produce 100% EV LCVs

Hitech Electric to produce 100% electric LCVs by March, with sales plans of 1,000 vehicles per year. In partnership with Positivo Tecnologia, (and its corporate venture capital (CVC) program) the assembly line will start with 50 units per month and possibly expand to 100 in the short term. The plant will be located in Campo Largo, Parana.

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South America Report

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Colombia emission regulation allow the use of less complex and less expensive engines not used in Brazil since the introduction of Proconve L7.

The vehicles will have a powertrain and battery produced by WEG, the Brazilian Electric equipment manufacturer. The batteries will feature non-flammable lithium iron phosphate. Product lineup includes a last mile utility vehicle and a 1.2-ton light truck.

Source: *Automotive Business* [Read The Article](#)

PSR Analysis: Product prices are set between US\$ 22K-25K are appealing for testing, but have limited market potential due to range (80-160km) and six hour battery charge time, suitable only for short distances.

Car-like versions may have higher success and volume potential than light truck versions when considering replacing car and motorbike tasks.

Hyundai Keeps Gamma Engine in Vehicles Produced for Colombia

The new HB20 auto landed in Colombia with new body but is powered by an old engine. Hyundai Motor Brazil started exporting the new face lifted compact with an engine that the hatchback no longer fits versions running in Brazil.

The Colombian version is exported with the 1.6 16V aspirated Gamma engine.

The versions for Brazil are also produced in Piracicaba (SP) but only use the 1.0 three-cylinder engines, aspirated or turbocharged. The hatchback was the country's best-selling car in 2022, with just over 96,000 units sold.

Source: *Automotive Business* [Read The Article](#)

PSR Analysis: Colombia emission regulation allow the use of less complex and less expensive engines not used in Brazil since the introduction of Proconve L7. Using this approach, Hyundai can compete better in a complex market with multiple brands and country sources, but still with interesting volumes and well established companies with local production.

Legislation for AG Tractor Cabins in Brazil Has Changes

The law requiring the use of cabin tractors for spraying includes changes in applications and timing. Under the new wording, cultivation methods in which the use of the original or adapted closed cabin is unfeasible depending on the spacing between lines, a sprayer trailer pulled in a machine without closed cabin may be used, provided that it meets certain conditions.

New deadlines vary from 120 months for small properties and 60 months for large properties. [Read The Article](#)

PSR Analysis: Given the long deadlines, the market total volumes should not be impacted, but product lines should have volume changes within the application the product and model level. These should be reflected in next publish of PSR's OE Link™ Forecast.

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South America Report

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January Truck Production in Brazil drops 72%

Truck production in Brazil in January was 4,049 units vs. 14,614 units in December per Anfavea (the association that represents the automakers installed in the Brazil) monthly. [Read The Article](#)

PSR Analysis: This decline was expected due to the introduction of PROCONVE P8, the regulation in line with Euro VI, that reduces the toxic gas emission limits and therefore increases the complexity and the price of new trucks.

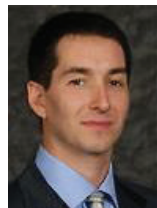
Under that regulation, OEMs have the right to sell Trucks at PROCONVE P7 (Euro V) produced in 2022 until March 31, 2023. This caused a pre-production and inventory increase to sell trucks with lower price at the beginning of 2023.

The Anfavea forecast points to a reduction in MHV production from 192,000 to 154,000, but their calculation on Sales, Exports and Stock does not match. Subscribers of Power Systems Research data and intelligence can see a well-balanced forecast, considering different stock level by subsegment of GWV. **PSR**

Europe Report

By *Emiliano Marzoli*, Manager European Operations

Deutz and Daimler Enter Strategic Alliance



*Emiliano
Marzoli*

Daimler Truck and Deutz have entered a strategic partnership to manufacture engines. Under the plan, Daimler Truck acquires 4.19% of the shares in Deutz AG, in return for which Deutz pays for access to Daimler Truck internal combustion engines.

The move is a consequence of Daimler's decision to stop investing in the development of their medium duty engines (MDEG Series) from 5.1 to 7.7 Litres. At the same time, Deutz will be able to access Daimler technology and further develop it for off-road applications, such as construction and agriculture machinery. The heavy-duty engines will continue to be manufactured by Daimler Truck at the Mercedes-Benz plant in Mannheim and be delivered to Deutz to complete the engine system. Production of the medium-duty engines is expected to take place at Deutz in 2028. [Read The Article](#)

PSR Analysis: Daimler announced in 2021 that they would not invest further in the development of Medium Duty engines for Euro 7 emissions regulations. Moreover, they have a goal to reduce their CO2 emissions by 40 to 60%, by developing battery or fuel cell trucks.

The volumes of the MDEG platforms are a small part of the Daimler line-up of truck and busses engines. According to our database EnginLink,™ roughly 30%

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Europe Report

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China's new energy vehicle industry has achieved success. In 2022, sales of all vehicles reached 6.887 million units, ranking first in the world for 8 years straight.

of engines produced by Daimler for the Truck and Bus industries belong to the MDEG series.

Furthermore, we forecast that the same platform will decrease to 20% in 2028. Daimler thus is focusing its investments on alternative drives. On the other hand, Deutz, which had a significant production of on-road engines until 2012, would be able to access this industry again.

When we also add the off-road applications, the potential for growth becomes even bigger, as Daimler is currently producing some 60,000 engines in the medium and heavy duty range. While demand will decrease in future years, we expect this trend to be slower compared to the on-road segments, particularly for the heavy-duty series. **PSR**

China Report

By *Jack Hao*, Senior Research Manager - China



*Jack
Hao*

China To Boost Adoption of New Energy Commercial Vehicles

Pilot cities must embrace EVs in official vehicles, public transport, taxis, sanitation, postal express, urban logistics, airport vehicles, aiming to achieve 80% NEV proportion by 2025. A balanced and efficient charging infrastructure must be established, with public charging piles proportional to NEV promotion, and 10% charging facilities in expressway service areas.

Innovation in tech, green energy supply, and new information/communication networks must be applied to efficiently integrate NEVs with power grids and other fields. Innovations such as intelligent charging, high-power charging, rapid power change have been expanded, and vehicle-network integration verified.

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

PSR Analysis: China's new energy vehicle industry has achieved success. In 2022, sales of all vehicles reached 6.887 million units, ranking first in the world for 8 years straight. New energy vehicles made up 25.6% of total vehicle sales, surpassing the 2025 goal set in the New Energy Vehicle Industry Development Plan. China leads in core technologies like batteries, motors, and electronic control. The production and sales of new energy vehicles will continue to grow rapidly in 2023.

In 2022, commercial vehicles were only 25% of total vehicles, but consumed 40% of automobile oil and produced over 50% of carbon emissions. Electrifying public vehicles will reduce emissions and dependence on foreign oil.

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China Report

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Currently, new energy vehicles only make up 10% of public vehicles, compared to 20% in the market. The penetration rate of new energy commercial vehicles is below 9%, and 7% for trucks. The nationwide pilot project aims to speed up electrification by being progressive and inspiring other cities. **PSR**

Far East: Japan Report

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



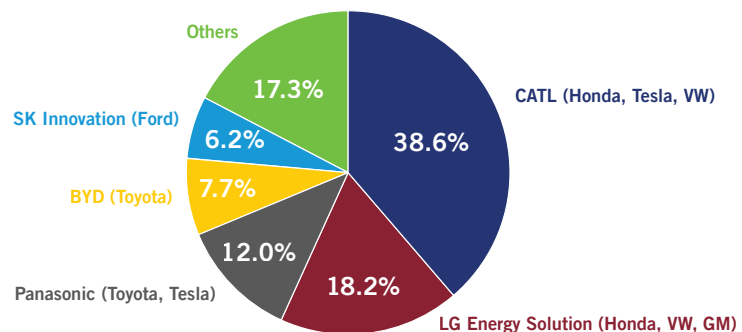
*Akihiro
Komuro*

Japanese Auto OEMs Seek Battery Production Channel in NA

batteries. Nissan is leading among the Japanese automakers, followed by Honda and Toyota. Along with the motor and inverter, the vehicle-mounted lithium-ion battery is considered one of the "Three Sacred Treasures" of EVs.

In particular, the on-board battery is the most important as it is the source of power. In many cases, EV production will not be possible without securing a large supply of batteries through partnerships with major battery manufacturers. However, the number of battery makers with which the major automotive companies have partnered is limited: CATL ranked first in the global automotive battery market in 2021, with 39% of the market. It was followed by LG Energy Solutions (18%) and Panasonic Holdings (12%), with the top three companies accounting for 70% of the market.

Global Share of Automotive Battery Manufacturers (and Major Partner Automakers)



North America is the area where the largest investments are being made. In Europe and China, there are many cases where construction of factories has already begun. Meanwhile, in the U.S., the Biden Administration has shifted gears toward decarbonization. Since then, GM and Ford Motor have been focusing on EVs and have teamed up with LG Energy and Korea's SK Group to promote massive investments, each estimated to be worth about 1 trillion yen.

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Far East Report

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The cost of purchasing batteries will be higher than that of other companies, and this will be reflected in the selling price of automobiles.

Japanese auto giants, which account for a large percentage of their sales in North America, have all announced new investment strategies. In response to the requirement to produce in North America as a condition for receiving tax credits under the Inflation Control Act, automakers are trying to restructure their supply chains to be completed within the region. EVs equipped with batteries using materials procured from China, Russia, and other countries are likely to be excluded from the subsidy. Nissan procures batteries from Envision AESC, which is 80% owned by Chinese capital, but there is a risk that this will not be subsidized and is seeking other procurement routes.

Honda is planning to build a \$4.4 billion joint venture plant in the U.S. with South Korea's LG Energy. Toyota plans to build a plant in the US with its group company Toyota Tsusho. Subaru, Mazda, and Mitsubishi have a large percentage of their sales in North America, but they do not have the investment capacity to rebuild their own supply chains. It is said that they may be seeking alliances.

Source: The Nikkei

PSR Analysis: Investments aimed at increasing battery production facilities and competition among automakers to procure batteries are already intensifying.

In a world where capital power is the key, smaller automakers will be forced to form alliances with other companies. EVs cannot be produced without batteries, and if OEMs cannot procure batteries on their own, they will have to purchase them from other companies.

The cost of purchasing batteries will be higher than that of other companies, and this will be reflected in the selling price of automobiles. As a result, the company's price competitiveness will be affected, making it difficult for the company to sell its own vehicles. All companies are aware of this, which is why they are making such large investments, but from a long-term perspective, the possibility of an excess of production facilities in the market cannot be ruled out. Although this risk is not often mentioned now, an overcapacity will have an impact on battery prices.

I believe that while competition for procurement is intensifying today, it is unlikely that this situation will be the same in 10 years. **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

EV電池確保できるか 北米で工場新設相次ぐ

車載リチウムイオン電池を巡り、自動車大手の投資が活発だ。日系勢では日産が先行し、ホンダやトヨタが追いかける構図だ。車載リチウムイオン電池はモーター、インバーターと並ぶEVの「三種の神器」の一つとされる。特に車載電池は動力源であり最も重要だ。多くの場合、電池大手と提携して電池の供給量を確保しなければ、EV生産がままならない。ただ、自動車大手が手を組む電池

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Far East Report

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メーカーの数は限られる。2021年の世界の車載電池市場では、1位がCATLの39%だった。以下、LGエネルギーソリューション（18%）、パナソニックホールディングス（12%）などが続き、上位3社で7割を占める。

巨額投資が相次いでいるのは北米だ。欧州や中国ではすでに工場建設が着工している事例が多数ある。一方、米国ではバイデン政権が脱炭素へシフトチェンジした。その後、GMやフォード・モーターはEVへ本腰を入れ、LGエネや韓国・SKグループと組み、それぞれ約1兆円ともされる巨額投資を進める。売上高に占める北米比率が高い日系自動車大手はこぞって新たな投資戦略を発表している。

インフレ抑制法で税控除を受ける条件として北米生産が要求され、自動車メーカー各社はこれへの対応を進めており、域内完結型のサプライチェーンを再構築しようとしている。中国やロシアなどから調達した材料を使った電池を搭載したEVは補助の対象外になる可能性が高い。日産は中国資本が8割を出資するエンビジョンAESCから電池を調達しているが、これが補助にならないリスクがあり、他の調達ルートを模索している。本田は韓国のLGエネと44億ドル規模の合弁工場を米国に建設予定だ。トヨタはグループ会社の豊田通商と米国内に工場建設を予定している。スバル、マツダ、三菱は売上高に占める北米の割合が大きいが、自社でサプライチェーンを再構築する投資の余力がない。提携を模索しているのではないかとされている。

PSR 分析: バッテリー生産設備の増強を狙った投資と、自動車メーカーによる調達競争はすでに激化している。資本力がものをいう世界で規模が小さい自動車メーカーは他社との提携を迫られることになっていくだろう。要するに、バッテリーを確保しなければEVは生産できない。自社で調達できない場合は他社から購入するしかない。そのバッテリー購入費用は他社よりも高くなり、自動車の販売価格に反映する。その結果他社との価格競争力に影響が出て、自社の車を売りにくくなる。それを各社とも認識しているのでこうした大規模な投資を進めているわけだが、長期的視点に立つと、市場に生産設備が過剰となる可能性は否定できない。このリスクは、今はあまり語られないが、生産設備が過剰になればバッテリーの価格にも影響が出るようになるだろう。現在は調達競争が激化しているが、その状況が10年後も同じであるとは考えにくい、と私は考えている。

参考: 日経 (一部筆者により元記事内容を改編しました)

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Far East Report
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Far East: South Korea Report

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

Hyundai To Start Operations at Plant in Vietnam

A joint venture between South Korea's Hyundai Motor and Vietnamese conglomerate Thanh Cong Group has started operations of an automobile plant in the northern Vietnamese province of Ninh Binh.

With an annual production capacity of 100,000 vehicles, the combined annual production capacity with the existing plant will reach 180,000 by 2025. The company will ship domestically as well as to neighboring countries. The new plant, operated by the joint venture Hyundai Thanh Cong, will have an investment of 3.2 trillion dong (about 18 billion yen). The plant will cover an area of approximately 50 hectares and include a test driving course.

Hyundai Motor Company entered the Vietnamese market in 2009, and in 2021 the company sold approximately 70,000 new vehicles in the country, more than Toyota. They are now believed to have surpassed Toyota Motor Corp. to become the largest domestic automaker by brand.

Source: The Nikkei

PSR Analysis: The presence of Korean products in Vietnam is high. It is easy to see Korean brands not only in automobiles, but also in home appliances. This news is a remarkable indication of the penetration of Korean-made products in the local market. Korean car manufacturers are increasing their market share in Vietnam partly because of their lower prices compared to Japanese cars, but also because of the success of their customization strategies tailored to local needs. A market source analyzed the local models of Hyundai and Kia, saying, "Compared in the same class, Hyundai and Kia have an advantage over Japanese cars in that they sell customized models with various options at a lower price." **PSR**

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

現代自がベトナムで新工場稼働 2025年に年18万台

韓国の現代自動車とベトナムの複合企業ティンコン・グループの合併企業はベトナム北部のニンビン省で自動車工場を稼働した。年産能力は10万台で、既存工場と合わせた年産能力は2025年までに18万台になる。国内だけでなく近隣国にも輸出する。合併会社、現代ティンコンが運営する新工場の投資額は3兆2000億ドン（約180億円）。工場の敷地面積は約50ヘクタールで走行試験用のテストコースも併設した。

現代自動車は2009年にベトナム市場に進出した。2021年の現代自動車のベトナム国内での新車販売台数は約7万台でトヨタ自動車を上回り、ブランド別で

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Far East Report

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In Thailand, one of the most industrialized countries in Southeast Asia, automation is accelerating in the manufacturing industry as the working population tapers off.

国内最大になったとみられている。

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: ベトナムでの韓国製品の存在感は高い。自動車はもちろん、家電製品などでも韓国ブランドを容易に目にすることができる。このニュースは現地での韓国製自動車の浸透を顕著に示している。韓国メーカーがベトナムでシェアを伸ばしている背景には、日本車に比べて価格が安い点があるが、現地のニーズにあわせたカスタマイズ戦略が奏功していることもある。現代や起亜の現地モデルについて、市場関係者は「同等クラスで比較した場合、各種オプションを備えたカスタマイズ車種を安く販売している点で日本車よりも優位」と分析した **PSR**

South East Asia: Thai Report

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

Thailand Kubota Takes Measures To Secure Manpower

In Thailand, one of the most industrialized countries in Southeast Asia, automation is accelerating in the manufacturing industry as the working population tapers off. Workers' attitudes are changing, and fewer Southeast Asians are migrating to Japan. Business models based on cheap labor are no longer viable in Asia.

When I visited the Amata City plant of Siam Kubota, a locally incorporated subsidiary of agricultural machinery giant Kubota Corporation, I saw countless automated guided vehicles (AGVs) running in every direction.

Sales of tractors and combine harvesters are booming, thanks in part to the government's special demand for subsidized farm machinery for those who lost their jobs due to the COVID-19 disaster and are now returning to their hometowns to start farming. The fruits of this policy are being returned in the form of year-end bonuses, and Siam Kubota is not suffering from a labor shortage at this time.

Nevertheless, there is a strong sense of crisis that in five to ten years' time, it will become considerably more difficult to secure workers in the manufacturing industry. To dispel the image of factory work as "hard, dirty, and dangerous," the company has begun to steadily implement measures with an eye to the future. The large number of AGVs is an indication of this.

According to the Thai government's May 2022 forecast, the total population is expected to peak at 67.19 million in 2022 and then begin to decline. The manufacturing industry has begun to prepare for future labor shortages.

Source: The Nikkei

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South East Asia Report

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PSR Analysis: Local manufacturing sites are improving their benefits packages and investing in equipment for automation. By raising the salary level, they are trying to deter the exodus of labor to other countries in search of better income. This seems to be the right direction to take. Automation at manufacturing sites is in high demand in Thailand and other Southeast Asian countries such as Indonesia. **PSR**

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

タイ・クボタの危機感、人手確保へ施策

東南アジア屈指の工業国タイでは労働人口の先細りで、製造業で自動化が加速している。働き手の意識も変わり、東南アジアから日本への出稼ぎも減る。安価な労働力を前提にした事業モデルはアジアで通用しなくなりつつある。

農業機械大手クボタの現地法人サイアムクボタのアマタシティ工場を訪れると、数え切れないほどの自動搬送車 (AGV) が縦横無尽に走り回っていた。COVID-19禍で職を失い、故郷に帰って就農する人々への支援策として、政府が農機導入への補助政策を打ち出したことによる特需もあって、トラクターやコンバインの販売は好調。その果実を年末の賞与という形で還元できていることから、サイアムクボタは現時点で人手不足には見舞われていないという。それでも、5年後、10年後には製造業の現場で人手を確保するのは相当厳しくなるだろうという危機感は強い。工場勤務につきまとう「きつい、汚い、危険」のイメージを払拭しようと、将来を見据えた手を着々と打ち始めている。大量のAGVはその表れだ。

タイでは少子高齢化が進行しており、同国政府が2022年5月に示した見通しによれば、総人口は28年の6719万人をピークに減少に転じる見通しだ。製造業の現場では将来の人手不足への備えが始まっている。

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: 現地の製造業の現場では、福利厚生充実を図り、自動化への設備投資がすすめられている。給与水準があがり、より良い収入を求めて海外に労働力が流出することを抑止しようとしているようだ。今後さらに現地の製造業が発展するためには労働力の確保は極めて重要であり、その意味でこの方向性は正しい。製造現場での自動化はタイをはじめインドネシアなどの東南アジアでも高い需要がある。 **PSR**

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As part of its 2023 Budget, the government has reiterated its focus on capital expenditures, the vehicle scrappage policy, and a reduction in customs duty for electric vehicle components that is designed to stimulate new vehicle sales.

India Report

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



*Aditya
Kondejkar*

Union Budget 2023 Focuses on Capex

As part of its 2023 Budget, the government has reiterated its focus on capital expenditures, the vehicle scrappage policy, and a reduction in customs duty for electric vehicle components that is designed to stimulate new vehicle sales. A reduction in customs duties and a plan to replace older, polluting vehicles will boost the adoption of green mobility.

“The increase in capex on infrastructure and the emphasis on green growth will help the mobility sector,” said Sudarshan Venu, MD, TVS Motor Company. “This budget gives something to everyone, from rural India and start-up India, to middle-class India and digital India. It is about inclusive growth and building on the recovery we are seeing after the pandemic. It strikes a fine balance between growth and fiscal prudence.” [Read The Article](#)

Commercial Vehicles. This Union Budget has allocated INR 10 lakh crore for capital investments and INR 79,000 crore for affordable housing. At the same time, the government has increased the capital expenditure on roads, railways and airports by 33%. This move will ensure continuation of the recovery cycle and is likely to improve CV demand by about 25%. Major beneficiaries will be heavy-duty multi-axle vehicles and tippers.

Furthermore, the LCV industry is expected to gain from the Rs 75,000 crore investment in enhancing first- and last-mile connectivity. Apart from it, the PM Awas Yojana that is planned for boosting rural housing would create more jobs and bring more projects for the CV industry

Green Energy. The government has provided INR 19,500 crore outlay for green hydrogen development. This will benefit the future of heavy-duty trucks and the logistics industry.

On lithium batteries, the government has also reduced the customs duty from 21% to 13% and extended the subsidies on EV batteries for one more year. This will boost the Indian EV market. [PSR](#)

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Russia Report

By *Maxim Sakov*, Market Consultant, Russia Operations

Editor's Note: Power Systems Research has paused all research and business development activities in Russia. We have maintained a presence in Russia since 2013 to bring important updates to our clients about the powered equipment markets within Russia. We are monitoring the current situation on a daily basis and hope to again establish this presence when the conflict with Ukraine is resolved. Please contact us at info@powersys.com if you have questions regarding business conditions in Russia. Thank you. **PSR**



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