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Alternative Power

By *Guy Youngs*, Forecast & Adoption Lead

New Battery Could Lead To Big Leaps in Performance



*Guy
Youngs*

Researchers at Dundee and Warwick universities in the UK, have identified the key role oxygen plays in storing and releasing a battery's energy and this could lead to the development of batteries for electronics and vehicles that charge faster, last longer, and are safer to use

Previously it was thought that oxygen in the battery was "passive". But the study found that while phosphates showed little oxygen participation, the layered oxides (in the cathodes) showed "significant" electron extraction from oxygen

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

PSR Analysis: Our current battery technology is limited by our understanding of the underlying physics of how and why batteries fail over time. This research opens up new avenues to explore and will help design batteries with much longer lifetimes. **PSR**

New "Air" Battery Makes Larger Electric Aircraft Possible

The global aviation industry has been struggling to wean itself away from kerosene jet fuel, but there have been some signs that change is on the way. However, this may apply only to much smaller aircraft.

Full sized airplanes represent a significant challenge, which requires a completely new generation of lighter, higher performing (increased energy density) batteries. And, the US startup Air Energy may have a solution: solid State Lithium-Air batteries.

The idea is to use oxygen as a key ingredient in a rechargeable lithium-based battery, thereby saving considerable weight while potentially boosting energy density far beyond the capacity of ordinary lithium-ion technology

The US Energy Department's Argonne National Laboratory discovered that the cathode-centered assumption behind all the previous work, was mistaken. They observed lithium hydroxide forming on the anode during operation, causing the battery to degrade, and the research work kicked off.

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

PSR Analysis: Obviously we are not there yet, and the batteries are not suitable for the larger aircraft, but if the latest research can be upscaled into production, then light aircraft may just have found their zero-emission option. **PSR**

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Alternative Power

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The paper argues that not every ship needs to become battery-electric. This goes against the standard anti-eco argument, that states that marine transport is not suitable for electrification.

Batteries Don't Need To Electrify Every Ship To Reshape Shipping Fuels

Maritime transportation accounts for nearly 3% of global energy consumption, around 3% of greenhouse gas emissions and both energy consumption and emissions are expected to further increase over the coming decades. This paints quite a bleak picture, so when a paper is produced that argues that it's not all doom and gloom, it gets interesting.

The paper argues that not every ship needs to become battery-electric. This goes against the standard anti-eco argument, that states that marine transport is not suitable for electrification. Inland vessels, ferries, coastal ships, offshore support vessels, service craft, port craft and many short-sea routes operate in regular patterns that are much friendlier to electrification.

The report finds that, by 2030, roughly 30% of maritime energy consumption and nearly 20% of maritime greenhouse gas emissions are technically electrifiable.

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

PSR Analysis: The report / paper infers that by electrifying smaller vessels, maritime emissions can be significantly reduced. Meanwhile, when the industry focusses on larger, deep-sea vessels and looks towards alternative fuels such as ammonia or hydrogen, it may be missing a relatively easy win. And it's something that has already started to happen with vessels such as ferries. **PSR**

Fossil Fuels Are 40% Of Freight Shipping Tonnage, But Half Its Fuel Use

When one discusses maritime fuel use and its replacement, the discussion often is about bunker fuel and whether ammonia, methanol, hydrogen, LNG, biofuels, synthetic fuels or batteries can replace it.

Leaving aside the issue of Inland sea vessels, ferries, coastal ships, offshore support vessels, service craft, port craft and whether they can or should be electrified, one of the issues that is not being discussed (until now that is), is what happens to the marine market in terms of cargo capacity and cargo hauled, when fossil fuels are replaced.

Fossil fuels are roughly 40% of maritime tonnage, but they represent about half of maritime freight energy because coal, oil, and gas are mostly long-haul bulk trades.

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

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PSR Analysis: Fossil fuel cargos travel long distances in very large tonnages, so any decline removes more than a proportional share of cargo mass. It removes a larger share of the ocean work and the fuel burned to do that work. This means that elimination of fossil fuels from the high seas may have a greater effect than simply a reduction in the fuels burnt by shipping. **PSR**

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Alternative Power

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Paving the Way for Lithium–Nitrogen Batteries

Scientists from Belgium’s University of Namur and China’s Wuhan University of Technology have proposed a plan to advance lithium–nitrogen (Li–N₂) batteries.

The researchers argue that the development of Li–N₂ batteries is hindered by poor reversibility, limited cycling stability, and sluggish nitrogen activation.

They go on to suggest that improved electrolytes, catalysts, separators, and cell designs, alongside standardized testing and flow-type architectures, are needed.

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

PSR Analysis: These batteries were first demonstrated nearly a decade ago but development of the technology has been limited. One reason why these batteries may be important in the future is that in the battery, lithium reacts with nitrogen gas to form lithium nitride (Li₃N) during battery discharge and, ideally, regenerates lithium and nitrogen during charging. If researchers can resolve these issues, this battery has great potential. **PSR**

DATAPOINT: *North America Hydroseeder 2026 Production* **4,000**

By Carol Turner, Senior Analyst, Global Operations

4,000 units is the estimate by Power Systems Research of the number Seeders/Hydroseeder expected to be produced in the United States during 2026.

Hydroseeding sprays a slurry of seed, water, fertilizer, and mulch to rapidly establish grass. Demand is driven by its massive cost savings (up to 80% cheaper than sod), rapid germination, and superior erosion control. It is the premier method for large-scale landscaping, land restoration, and climate-resilience projects.

This product 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 37.5% of total units produced, Easy Lawn leads in production of Seeders/Hydroseeder in the United States (NA). In second position is Finn Corporation with 16%; third, Turbo Technologies with 12%.

Exports: Up to 10% worldwide.

Trends. In 2025, production of Seeders/Hydroseeder in the United States decreased 4.4%. Production is expected to gain 3% in 2026. The gain is attributed

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DataPoint

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Ongoing tariffs along with the conflict in the Middle East and the shipping disruption in the Strait of Hormuz are currently putting pressure on truck demand.

to healthy lawn needs that include parks, residential, commercial/professional landscaping and sport fields. Expect production to increase by 10% by 2035.

Battery Production:

2024: 24

2025: 23, 4.2% decrease

2026: 25, 8.7% increase

Finn Corporation: T30E Hydroseeder **PSR**

Truck Production Report

*By Jim Downey, Vice President-Global Data Products and
Chris Fisher, Senior Commercial Vehicle Analyst*

Q2 2026 Truck Production Index (PSR-TPI) climbs 11.3%



*Jim
Downey*



*Chris
Fisher*

St. Paul, MN — The Power Systems Research Truck Production Index (PSR-TPI) increased from 115 to 128, or 11.3%, for the three-month period ending June 30, 2026, from Q1 2026. The year-over-year (Q2 2025 to Q2 2026) gain for the PSR-TPI was 127 to 128, or 0.8%.

The PSR-TPI measures truck production globally and across six regions: North America, China, Europe, South America, Japan & Korea and Emerging Markets.

This data comes from **OE Link™**, the proprietary database maintained by Power Systems Research.

All Regions. MHCV demand will vary by region in 2026. North America and Europe have seen orders increase through much of the first half of the year and vehicle demand is expected to improve somewhat over last year. China is expected to see a single digit decline in production much of the decline comes on the heels of very high levels of production in 2025.

Power Systems Research



Truck Production Index

North America. Medium and heavy truck production in North America is expected to increase by 9.5% this year compared with low 2025 production. While class

Global Index. Overall, global production is expected to decline slightly in 2026 over last year. Ongoing tariffs along with the conflict in the Middle East and the shipping disruption in the Strait of Hormuz are currently putting pressure on truck demand. However, at the time of this writing fuel prices have been declining as more vessels are able to pass through the Strait.

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Truck Production Report

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8 truck production is expected to increase by 13.5% this year as order rates for class 8 trucks have improved strongly throughout much of the year. Improvement in freight rates and freight demand along with tightening truck capacity and some level of truck pre-buy ahead of the 2027 GHG emission regulations is expected to drive increased truck production this year. While truck sales have been down for much of this year, production levels are expected to be strong in the second half of the year. Oil prices have been recently declining which will also help drive truck demand in the third and fourth quarters of 2026. **PSR**

South America/Brazil Report

By Fabio Ferraresi, Managing Director - South America

Bus Chassis Production Shows Gains Despite Likely Downturn



*Fabio
Ferraresi*

Brazilian bus chassis production reached 16,200 units in the first half of 2026, up 3.2% year-over-year, but June output fell 20.8% from May and 15.1% from June 2025, signaling a possible reversal in the production curve. Registrations totaled 10,200 units in the first half, down 11.6% year-over-year, despite a June rebound supported by subsidized credit from Move Brasil 2.

Anfavea revised its 2026 outlook downward, projecting 22,500 registrations, 25,000 chassis produced, and 4,400 exports, reflecting weaker demand, high interest rates, public procurement delays, and the electoral calendar.

Source: AutoData

PSR Analysis. Anfavea's revised projections are now converging with the scenario anticipated by PSR in Q4 2025, based on high interest rates and a decline in the volumes of public funding programs. The segment's production level is dependent on subsidized credit and government procurement, while delays in Caminho da Escola reduced volumes for the year. Move Brasil 2 supports short-term demand, but the structural outlook remains constrained by financing conditions, public budget timing, and weaker exports. **PSR**

Chinese Vehicle Imports Reduce Brazilian Exports to Argentina

Brazilian vehicle exports to Argentina fell 35.4% in the first half of 2026, totaling 106,000 units, according to Anfavea. The decline was attributed to the increase in Chinese vehicle imports into Argentina, which reduced demand for Made in Brazil models in Brazil's main external market. Total Brazilian vehicle exports reached 216,600 units from January to June, down 21.2% year over year. Automakers now

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South America Report

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project a 12.8% decline in exports for 2026, reversing the 1.3% growth forecast issued in January.

Source: *Automotive Business*

PSR Analysis. Automakers producing in Brazil are facing in Argentina the same competitive pressure from Chinese brands seen in the Brazilian market, and potentially with greater intensity. Chinese vehicles combine high technological content, aggressive pricing, and broader equipment packages, reducing the competitiveness of Brazil made models. The historical rejection of Chinese products is also declining, weakening one of the previous barriers to adoption in regional markets. **PSR**

Scania Brazil Plant Prepared for Electric Truck Production

Scania has completed the industrial investments required to produce electric trucks at its São Bernardo do Campo plant in São Paulo state, Brazil, but is waiting for sufficient market scale before starting local manufacturing.

According to Christopher Podgorski, President and CEO of Scania Latin America, the factory already produces electric bus chassis and has the full industrial structure ready for electric truck assembly. The company currently sells the imported 30 G electric truck from Sweden in Brazil, focused on urban and regional operations, with only one unit sold so far to Reiter Log.

Local electric truck production had previously been indicated for November 2027, initially at a pace of one unit per day. The project is part of Scania's \$391.93 million USD (R\$ 2 billion) investment cycle for 2024 to 2028. The company expects early adoption to concentrate on logistics corridors in the South and Southeast, especially between Rio de Janeiro, São Paulo and Campinas, while maintaining a multi-energy portfolio that includes diesel, natural gas, biomethane and electric platforms.

Source: *Revista M&T, based on Transporte Moderno.*

PSR Analysis. Scania is adopting a portfolio readiness strategy, preparing its Brazilian industrial base for different propulsion technologies to avoid losing sales opportunities due to lack of product availability. While the company leads the CNG and biomethane truck segment in Brazil, it is also positioning itself to serve future demand for electric trucks, even if this market remains a niche in the short term. The electric truck opportunity is likely to involve lower volumes but higher ticket prices, concentrated in fleets with decarbonization targets and specific niche applications. **PSR**

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South America Report

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Sany Announces Production Plant in Campinas – Brazil

Sany plans to begin assembling trucks and construction equipment in the Campinas-SP during the second half of 2026. The initial operation in a former Mercedes operation area is expected to use an existing industrial warehouse and a CKD production model, with components imported from China for local assembly. The company affirms its intention to progressively increase local content, develop Brazilian suppliers, reduce logistics costs, and strengthen parts and aftersales support. The exact municipality, investment value, production capacity, and number of jobs have not been officially disclosed.

Source: *Click Petróleo e Gás*

PSR Analysis. Sany has historically operated in Brazil as an equipment importer and previously reversed plans for local production in Jacareí-SP. Starting CKD assembly at the former Mercedes Benz facility does not fundamentally change this strategy, although it may generate tax and cost benefits depending on the pace and scope of nationalization. Expectations for local sourcing should remain cautious, but production volumes, locally assembled models, and nationalized components should be closely monitored to identify supply opportunities accurately. **PSR**

Far East: Japan Report

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

IHI Tests 6 MW Ammonia-Fueled Land-Based Engine



*Akihiro
Komuro*

IHI Power Systems in July began operating a demonstration plant using a 6,000kW ammonia-fueled reciprocating engine at its Ota Plant in Gunma Prefecture. The engine uses ammonia and heavy fuel oil in a dual-fuel configuration and can also operate entirely on heavy fuel oil. The company is targeting both an ammonia fuel ratio and a greenhouse gas emissions reduction of more than 90%.

The demonstration will evaluate the complete power generation system, including engine performance, fuel supply equipment, exhaust aftertreatment, leak detection and safety controls. Fuel handling and exhaust treatment are particularly important because ammonia is toxic and can produce unburned ammonia and nitrous oxide under certain combustion conditions. IHI Power Systems plans to complete the testing during fiscal 2026 and begin commercial sales in fiscal 2027.

The 6 MW unit is based on the 1.6 MW 28ADF ammonia-fueled engine developed for coastal vessels and has been scaled up to a V18 configuration for stationary power applications. It also incorporates power generation control technology developed for auxiliary marine engines.

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Japan Report

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Rather than developing an entirely new engine platform, IHI Power Systems is scaling up a 1.6 MW engine that already has operating experience on a commercial vessel.

IHI Power Systems is targeting industrial power generation, remote islands, data centers, mines and industrial parks. The system will be marketed as an option for replacing or upgrading existing diesel and heavy-fuel-oil generating equipment.

Source: *IHI*

PSR Analysis: The significance of this announcement is that ammonia engine technology developed for marine applications is now being extended into the land-based stationary power market. Rather than developing an entirely new engine platform, IHI Power Systems is scaling up a 1.6 MW engine that already has operating experience on a commercial vessel. This should allow the company to apply its existing knowledge of combustion control, fuel supply, exhaust treatment and ammonia safety to the land-based system.

The initial product will use a dual fuel configuration rather than operating exclusively on ammonia. The ability to switch to heavy fuel oil means that power generation can continue if ammonia is unavailable or if a problem occurs with the ammonia-related equipment.

For mines, remote islands, industrial parks and data centers, where continuity of power supply is essential, fuel flexibility is likely to be an important consideration when evaluating the system.

Commercialization will involve more than the engine itself. An ammonia-based generating plant also requires fuel storage and supply equipment, leak detection, ventilation, safety controls and exhaust aftertreatment. Because ammonia is toxic and corrosive, additional specifications will also be required for piping, seals, valves and other fuel-handling components. The development of ammonia power generation could therefore create demand for engine manufacturers, and for suppliers of auxiliary equipment, control systems, exhaust treatment and fuel-handling equipment.

The commercial outlook will depend heavily on the price and availability of ammonia. Even if the engine performs as planned, the addressable market will remain limited if the cost of the fuel, storage equipment and safety systems is substantially higher than that of conventional diesel generation. Initial demand is therefore more likely to come from large industrial users that operate generating equipment for long periods, consume significant volumes of fuel and have both the financial capacity and a clear reason to invest in lower-carbon alternatives.

IHI Power Systems' plan to begin commercial sales in fiscal 2027 indicates that ammonia-fueled reciprocating engines are moving beyond the research stage toward a defined product offering. The next points to watch will be continuous operating performance, maintenance intervals, the durability of the exhaust aftertreatment system, and the location and fuel supply arrangements of the first commercial installation. **PSR**

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Far East: South Korea Report

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

Government Links Semiconductor, AI Investments



*Akihiro
Komuro*

The South Korean government announced a large industrial investment program in June centered on semiconductors, physical AI and AI data centers. The plan is intended to expand domestic production capacity and connect the country's semiconductor industry with growing demand for computing infrastructure and industrial automation.

Samsung Electronics and SK Hynix are expected to invest a combined \$541.03 billion USD (KRW 800 trillion) in new semiconductor capacity in southwestern South Korea. Samsung has selected Gwangju as a candidate location for a new production base, while SK Hynix is also considering an additional site in the region. A separate advanced semiconductor packaging cluster, involving approximately \$54.78 billion USD (KRW 81 trillion) in investment, is planned for the Chungcheong region.

South Korean companies, including SK Group, GS Group and Naver, are also planning major investments in AI data centers. Initial projects are expected to total around \$371.96 billion USD (KRW 550 trillion) and provide 8.4 GW of capacity. Construction is scheduled to begin by the first half of 2028, and cumulative investment could exceed \$676.28 billion USD (KRW 1,000 trillion) by around 2035.

The physical AI program aims to make South Korea a leading producer of industrial and humanoid robots by 2030. The government plans to support the development of robots for ten major industries, with initial commercial applications targeted for 2028. The program also includes industrial data collection facilities, a domestic physical AI foundation model and training programs for engineers and researchers.

A robotics and component manufacturing cluster is planned for the Saemangeum area on the west coast. The government intends to combine robot production, component supply, AI development and industrial testing within the same regional base.

Source: *Reuters*

PSR Analysis: The plan is notable because South Korea is not treating AI as a software or semiconductor issue alone. It combines chip production, data centers, power and cooling infrastructure, robotics, component manufacturing and workforce development. The objective is to turn rising demand for AI computing into a broader cycle of domestic manufacturing investment.

The scale of the program will create substantial demand for industrial equipment before physical AI has a major direct effect on machinery markets. Semiconductor plants and data centers require construction equipment, standby and distributed power systems, cooling equipment, material-handling systems, uninterruptible

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South Korea Report

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power supplies and electrical control equipment. These investments are likely to generate measurable equipment demand earlier than the planned deployment of humanoid robots.

The decision to place new facilities outside the main semiconductor centers also reflects capacity constraints in existing industrial areas. Large semiconductor and data center projects require reliable electricity, water, logistics infrastructure and skilled labor, as well as access to equipment and material suppliers. Building an equivalent industrial base in new regions will take time, even with strong government support.

The physical AI component is more uncertain. Developing robot platforms and AI models is only one part of commercialization. Industrial users will also require reliable hardware, application-specific engineering, safety systems, maintenance networks and evidence that the equipment can reduce operating costs. Early adoption is therefore more likely in structured manufacturing and logistics environments than in applications requiring highly flexible human-like operation.

The main near-term impact of the strategy will come from the construction of semiconductors and data center capacity. Physical AI may become more important over the longer term, but its development will depend on whether South Korea can connect its strength in semiconductors and electronics with competitive robot hardware, components and practical industrial applications. **PSR**

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Southeast Asia: Thailand Report

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



*Akihiro
Komuro*

Thailand Approves AutoAlliance Investment for MHEV Production

Thailand's Board of Investment in July approved a THB 7 billion, approximately USD 210 million, investment by AutoAlliance Thailand (AAT). The joint venture between Mazda Motor and Ford Motor will upgrade its existing production facilities, mainly for Mazda vehicles, in preparation for a B-segment SUV using mild

hybrid electric vehicle technology.

The investment will introduce additional automation and robotic equipment in chassis welding, body assembly, painting and final assembly. The upgrades are intended to improve production efficiency and accuracy while allowing the plant to handle the additional components and manufacturing requirements of the new MHEV model.

Mazda announced a broader investment plan in February 2025 to develop Thailand as a production base for electrified compact SUVs. The company said the vehicles

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Thailand Report

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would be supplied to the Thai market and exported to Japan and other ASEAN countries, with annual production targeted at 100,000 units.

Mazda currently operates the AutoAlliance vehicle plant in Rayong and Mazda Powertrain Manufacturing Thailand in Chonburi. The latter produces engines and automatic transmissions. The company's investment plan also covers powertrain and battery-related production, although the configuration of the MHEV system, the detailed configuration of the MHEV system has not been disclosed. But Mazda has previously indicated that production will begin in 2027, with annual capacity of 100,000 units and a local content target of more than 70%.

Thailand continues to support several types of electrified vehicles rather than focusing only on battery-electric models. The country has attracted investment in BEV, HEV and related component production, while retaining a large existing supply base for engines, transmissions and other conventional vehicle components.

Sources: *Reuters / Thailand Board of Investment*

PSR Analysis: The investment shows that Thailand's automotive strategy is not based on a single powertrain technology. The country is developing production capacity for ICE, MHEV, HEV, PHEV and BEV models at the same time. This is relevant in Southeast Asia, where income levels, fuel prices, electricity supply, charging infrastructure and vehicle usage vary considerably between markets.

MHEVs continue to use an internal combustion engine as the main source of power, allowing manufacturers to retain much of the existing engine, transmission, fuel and exhaust supply chain. At the same time, the vehicles require batteries, starter-generators, inverters and additional power-control components. This provides a route for existing Thai suppliers to add new products without requiring an immediate replacement of their existing manufacturing capabilities.

The focus on upgrading an existing plant is also important. Auto Alliance is investing in welding, body, paint and assembly automation rather than building an entirely new factory. This reflects the need for Thai vehicle production to compete through quality, accuracy, utilization and manufacturing flexibility, rather than labor cost alone.

Japanese and Chinese manufacturers are taking different approaches in Thailand. Chinese investment has concentrated heavily on new BEV capacity, while Japanese manufacturers are making greater use of existing plants, local suppliers, export networks and powertrain production. Both groups are likely to compete for the Thai market and for exports, but with different product and manufacturing strategies.

The main point to watch will be the local sourcing of the MHEV system. If batteries, starter-generators and power electronics continue to be imported, much of the additional value will remain outside Thailand. If production of these components is localized, the Auto Alliance investment could support a broader upgrading of the country's automotive supply chain. **PSR**

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China is the world's largest manufacturer and user of agricultural machinery, but most of the agricultural machinery lacks high-end R&D and manufacturing capabilities.

China Report

By *Jack Hao*, Senior Research Manager - China



*Jack
Hao*

XCMG Group, ZF Establish Joint Venture for Ag Machinery

XCMG Group of Friedrichshafen, Germany, and ZF Group have signed a joint venture agreement to establish "ZF (Xuzhou) Machinery Co., Ltd.", headquartered in Xuzhou Economic and Technological Development Zone, Jiangsu Province.

In 2024, ZF expressed its plan to localize the production of power shift transmissions in China. With this joint venture, we see a collaboration that may be a technology transfer or a long term strategy to localize China's high-end agricultural equipment.

China is the world's largest manufacturer and user of agricultural machinery, but most of the agricultural machinery lacks high-end R&D and manufacturing capabilities. This predicament of being "large but not strong" has reached a point where it must be addressed.

Source: 360trucks

PSR Analysis. In 2014, when Zoomlion acquired Chery Heavy Industry and officially entered the agricultural machinery sector, to 2015 when the Xinjiang company of CRCC Heavy Industry was founded, 2016 when Liugong Agricultural Machinery Co., Ltd. was established, 2020 when XCMG set up Xuzhou Agricultural Equipment Technology Co., Ltd., and 2023 when Lingong built the Lingong Smart Agricultural Equipment Industrial Park in Lanshan District, Linyi, domestic construction machinery giants have been making constant layouts in the agricultural equipment sector in recent years.

Now, cross-sector entry into the agricultural machinery industry has become a mainstream trend in the industry. This move is by no means a hasty short-term capital speculation made by these enterprises. Instead, it is a strategic choice for construction machinery enterprises to rely on their profound core advantages accumulated in technology, manufacturing, channels and other aspects, achieve deep complementarity and two-way empowerment with the traditional agricultural machinery industry, and finally reach mutual benefit and win-win results.

Driven by intensifying competition and market saturation in recent years, many enterprises are seeking new growth points. Entering the agricultural machinery sector has undoubtedly become a key move for construction machinery firms to break through industry bottlenecks and open a second growth curve. The State Council recently released the 15th Five-Year Plan for Accelerating Agricultural and Rural Modernization, which clearly targets a comprehensive mechanization rate of over 80% for crop farming, harvesting and processing by 2030. It has rolled

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China Report

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out clear supporting policies: pushing R&D of high-end intelligent agricultural machinery and models for hilly areas, fostering leading enterprises and specialized SMEs in the sector, promoting new-energy agricultural machinery development, and shifting farm machinery purchase subsidies from universal coverage to precise "superior product, superior subsidy" rules.

China now has the world's largest agricultural machinery market. Data from CI Consulting shows the domestic market has topped \$73.82 Billion USD (500 billion RMB) and is expected to reach around \$103.35 Billion USD (700 billion yuan) by 2030 with a 5%-7% annual growth rate. The growth mainly comes from three parts: replacing old farm machinery, adding more high-end intelligent equipment, and filling the blank of machinery for hilly areas and special cash crops.

Exports are also rising fast: in the first quarter of 2026, China's total exports of agricultural machinery and parts hit 5.94 billion US dollars, up 28.9% year on year, with complete machinery exports jumping 37.8% to 4.53 billion US dollars. New-energy farm machinery like hybrid tractors and electric tillers have also entered Southeast Asia and Central Asia in large batches, becoming a bright new spot for exports. **PSR**

India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations



*Aditya
Kondejkar*

India–UK CETA: A Strategic Opportunity for Auto Industry

The implementation of the India–UK Comprehensive Economic and Trade Agreement (CETA) from July 15 marks a significant milestone for the Indian automotive industry. While much of the attention has focused on tariff reductions for premium vehicle imports, the agreement's strategic importance extends well beyond lower duties. It has the potential to reshape trade flows, strengthen technology partnerships, attract investments, and enhance India's position in the global automotive value chain.

For Indian OEMs and auto component manufacturers, the agreement creates new export opportunities by improving access to the UK market and enhancing cost competitiveness. India's component industry, already a key supplier to global OEMs, stands to benefit from increased demand for precision-engineered products, castings, forgings, and EV-related components. The agreement also provides a stronger foundation for collaboration in advanced automotive technologies, including electric mobility, battery systems, lightweight materials, software-defined vehicles, and digital manufacturing.

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India Power

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Greater collaboration with UK companies could accelerate product development, improve engineering capabilities, and support India's transition toward next-generation mobility solutions.

The UK possesses a mature automotive R&D ecosystem and expertise in premium vehicle engineering. Greater collaboration with UK companies could accelerate product development, improve engineering capabilities, and support India's transition toward next-generation mobility solutions. Additionally, the agreement is expected to encourage bilateral investments, with India becoming an increasingly attractive destination for manufacturing, sourcing, and engineering services.

At the same time, the agreement introduces competitive pressures. Reduced import duties on premium vehicles could intensify competition in India's luxury passenger vehicle segment, compelling domestic manufacturers to strengthen product quality, accelerate innovation, and improve operational efficiency. However, given the relatively small size of the premium vehicle market, the broader industry impact is expected to be driven more by export growth, investment, and technology transfer than by increased imports.

Source: Times of India

Overall, the India–UK CETA should be viewed as a long-term strategic enabler rather than merely a trade agreement. For the automotive industry, the key developments to watch over the next 12–24 months include growth in vehicle and component exports, new technology collaborations, and fresh investments in manufacturing and R&D. Companies that proactively leverage these opportunities through stronger export strategies, localization initiatives, and global partnerships are likely to be the biggest beneficiaries, further strengthening India's position as a global automotive manufacturing and engineering hub. **PSR**

PSR Report

PSR Provides \$2,000 STEM Scholarship

Power Systems Research has provided its annual \$2,000 STEM Scholarship (Science, Technology, Engineering and Mathematics) to 2026 Eagan High School graduate Ryan Houth.

The STEM scholarship is made through the non-profit Eagan Community Foundation, which has donated more than \$3 million in scholarships, grants and initiatives to the Eagan community since it was founded in 1990.

Power Systems Research, a global data research and intelligence company, has been providing a STEM scholarship annually to the Eagan Community Foundation since 2013.

“Power Systems Research has been promoting engineering-based research since its founding in 1976,” noted Joe Zirnhelt, PSR president, in discussing the scholarship program. “We believe it’s extremely important to encourage and support STEM education at the high school level.”

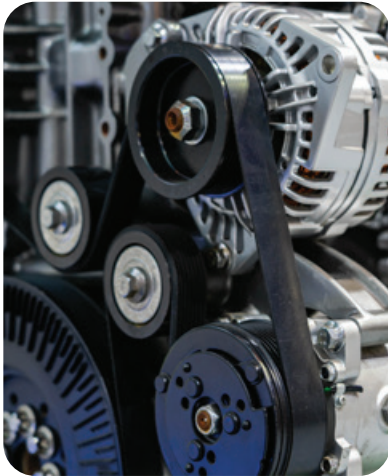
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PSR Report

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PSR also is a major supporter of the internationally recognized Experimental Vehicle Team (EVT) program at St. Thomas Academy in St. Paul, MN, and has supported the Lightning Robotics FIRST teams at Eastview High School in Apple Valley, MN.

Power Systems Research monitors global equipment production in 13 industry segments across 12 countries. The focus of Power Systems Research in the powered products industry highlights a close tie to STEM, since technologies requiring continued advancements in science, engineering and mathematics are critical elements towards ensuring a thriving industry well into the future.

“Ryan Houth has demonstrated excellence in the classroom, the laboratory, and in his extracurricular activities throughout his high school career,” notes Zirnheld, “and we’re proud to help fund his collegiate studies and activities.”

During his four years at Eagan High School, Ryan particularly enjoyed his chemistry classes and his extracurricular activities on the swimming team, as a member of several science clubs and as a tutor for students in pre-calculus, chemistry, and history.

Chemistry was especially appealing to Ryan because, “it really applies to all the fundamentals of life,” he says. “Our entire life is built on chemicals.”

He also works as a lifeguard in the District 196 Aquatics program and the Cascade Bay Water Park in Eagan. “I particularly enjoyed my lifeguard work,” says Ryan, “because it taught me to be assertive with customers without being rude. It teaches responsibility. And it teaches me how to tell kids what they can do and what they can’t do.”

Ryan plans to attend the University of Wisconsin at Madison this fall where he will pursue a double major in biochemistry and Musical Performance. After graduation from UW, Ryan plans to enter dentistry school and possibly join a musical organization, perhaps a jazz band. He hopes to continue his musical involvement because he’s developed a great passion for music after playing in bands for nearly eight years.

Ryan plays the euphonium, an instrument that looks like a miniature tuba but sounds more like a trombone. Ryan’s somewhat humorous description of the instrument: If a tuba and a trombone had a baby, it would be a euphonium.

One of Ryan’s most memorable high school achievements was winning a spot in the prestigious Minnesota Music Educators Association (MMEA) band. “It was a huge accomplishment for me,” he says. Only about four candidates win the euphonium spots in the band out of the more than 20 who apply.

Of all his activities, Ryan especially enjoyed tutoring. “I really liked doing that,” he said. “Watching students do well in tests makes me really happy, it makes me happy to see them do well, to succeed.”

“It sounds as though you might be headed for a career in teaching,” I suggested.”

“Maybe,” he said. “Maybe.” **PSR**

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