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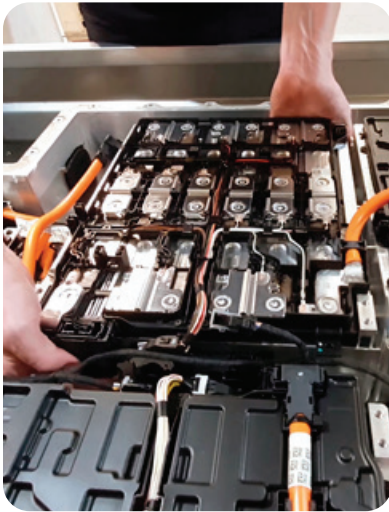
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Alternative Power Report

By *Guy Youngs*, Forecast & Adoption Lead



*Guy
Youngs*

China Discovers Unique Battery Material

A newly discovered ore containing vast quantities of an element widely used in semiconductors has been found in China. The discovery could propel new advances in battery technology.

Geologists have found the rare earth metal niobium inside the new ore named niobobaotite from north China's Inner Mongolia. The rare earth metal is widely used in alloys for jet engines and rockets and has also been shown to have exceptional current conducting properties in low temperatures.

Researchers have said batteries made from niobium have several advantages over traditional lithium-ion batteries. The Brazilian Metallurgy and Mining Company (CBMM) has been working on new projects towards the use of niobium to make advanced lithium-ion batteries.

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

PSR Analysis: China currently sources most of its niobium from Canada and if geologists can prove that sufficient volume and of the correct quality can be extracted from niobobaotite, experts said it could help make China "self-sufficient", reported the South China Morning Post newspaper. Researchers believe that niobium-graphene batteries can last 10 times longer than traditional lithium-ion batteries, thus making them last for an estimated 30 years and make them more durable and reliable, as well.

Toyota Joins Race To Mass Produce Solid-State Batteries

Toyota Motor Company is the latest automaker delving into solid-state battery technology, vowing to mass produce the safer and more energy dense cells in four years.

The Japanese automaker has recently changed its tune about building BEVs and is now claiming solid state batteries will be in vehicles starting in 2027.

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

PSR Analysis: This sounds really good, but Toyota has been talking about solid state batteries since the mid 1990's and has promised their introduction several time already. We need to be cautious about this as Toyota also has said that their new ammonia engine could bring the end of EVs (see next article). Toyota is late to the EV party and is now sending mixed signals.

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Alternative Power Report *Continued from page 2*

Ammonia is energy dense so there is potential here but like gasoline, ammonia is highly toxic so there are some concerns here.

Could Toyota's Ammonia Engine Bring the End of EVs?

The technology is the result of a collaboration with the GAC Group, a Chinese state-owned manufacturer. The ammonia engine is a form of internal combustion engine (ICE) powered primarily by ammonia, (ammonia is comprised of a nitrogen atom and three hydrogen atoms). It does not contain carbon. As a result, when it's burned in an ICE, it does not release carbon dioxide, one of the major greenhouse gases. In the effort to decarbonize, the potential of this type of technology is considerable.

Source: *Hydrogen Fuel News* [Read The Article](#)

PSR Analysis: Ammonia is energy dense so there is potential here but like gasoline, ammonia is highly toxic so there are some concerns here. However, the article doesn't clarify how they will deal with the nitrous oxides emitted from the engine and these can be expensive to deal with.

White Hydrogen Could Reduce Decarbonization

Early this summer, scientists in northern France discovered what has the potential to be a huge white hydrogen deposit, (white hydrogen is naturally occurring H₂). Not all forms of the hydrogen are equally clean, and this depends on how hydrogen is produced. Brown, black and grey H₂, for instance, are all produced using processes with fossil fuels, such as coal or natural gas and are therefore not environmentally friendly.

Depending on how this H₂ is extracted, it could prove to be one of the cheapest and cleanest forms of hydrogen. The natural H₂ deposit was found in July 2023 by Philippe de Donato and Jacques Pironon, scientists at the Université de Lorraine.

Source: *Hydrogen Fuel News* [Read The Article](#)

PSR Analysis: White hydrogen has the potential to be a game change, but this is still dependent on the necessary infrastructure being in place. In this matter, hydrogen is 10 to 15 years behind the EV infrastructure (at least). However, this discovery has triggered global searches for White H₂. Australian energy experts working to unlock natural hydrogen within the nation, have just secured approval for test drilling the first natural hydrogen-purposed well in Australia. [\(Click Here\) PSR](#)

Global Report

Outboard Marine Engine Market Hits \$5.5 Billion

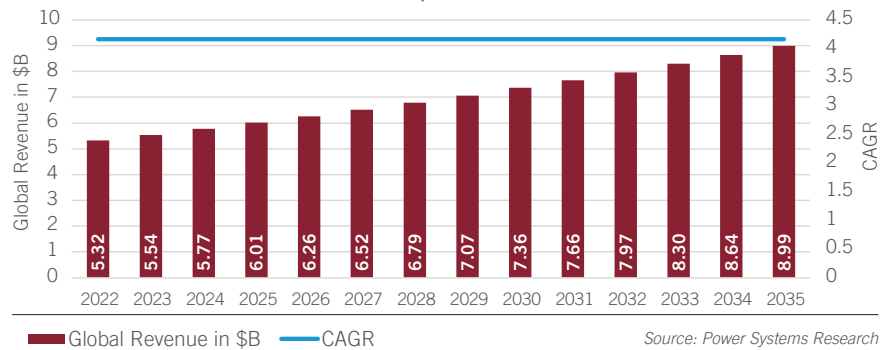
By Michael Aistrup, Senior Analyst

The global Outboard Marine Engine Market size is estimated at \$5.54 billion in 2023, and is expected to reach \$8.99 billion by 2035, growing at a CAGR of 4.1% during the forecast period, according to research by Power Systems Research.

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Global Report
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**Global Outboard Engines Revenue
in \$ Billions**



The COVID-19 outbreak significantly impacted the boat manufacturing industry and caused a decline in recreational activities worldwide, which hurt outboard motor sales. However, in 2021, the market regained momentum due to the easing of restrictions. The market is expected to register healthy growth in the coming years.

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Michael Aistrup

There are generally three types of boat drives including inboard, outboard, and sterndrive. One obvious distinction among them is their placement of motor in the boat.

Different from an inboard engine that is usually mounted inside the boat and invisible or a sterndrive that is a combination of inboard and outboard engines, an outboard motor refers to the propulsion system fully installed on the outside of the hull, usually mounted to the exterior of the transom to power the boat.

In addition to offering propulsion, an outboard engine that sits on the boat also offers steering control as it's built to pivot over its mountings and adjust the thrust's direction. Often, the outboard motor is the first choice for fishing, recreation, and light commercial inshore boats.

There are several demand drivers for the global market, including:

- **Overall Economic Growth.** Rising disposable income has resulted in increased spend on leisure and recreational activities and increasing demand for small and medium-powered boats, which has contributed significantly to the rapid growth of the watercraft industry.
- **Rising Sales of Boats.** The global marine outboard engines market is heavily dependent on the demand for powerboats such as pontoon boats, personal watercraft, ski boats, saltwater fishing vessels, and wakeboards. Recreational boat demand increased during COVID years and decreased significantly in 2021 and 2022. But boat demand is forecasted to return to normal growth in 2023.
- **Boat/Engine Suppliers are increasingly emphasizing new products.** Manufacturers are increasingly integrating advanced technologies, such as IoT, AI and smart sensors into their boats providing users with features such as GPS tracking, automatic controls and smart connect.

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Global Report

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- **Rapidly growing water tourism industry.** Rising watersports and boating activities are increasing the demand for outboard engines. The U.S. is witnessing significant growth in product demand from marine industry due to many activities like sightseeing, voyages, swimming, nature observation and entertaining.

It's important to note that the electric and hybrid-electric power systems we see in vehicles designed for use on land will unlikely be mirrored in the marine world, at least not in the near term especially with higher hp engines.

On small boats the power and range limitations aren't too problematic and small electric outboards have continued to gain ground. But for larger boats travelling long distances, this remains a big problem to overcome. On larger boats, internal combustion outboards aren't likely to go away any time soon. **PSR**

North America Report



Chris
Fisher

Transitioning from ICE Buses to Zero-Emission Engines

By *Chris Fisher*, Senior Commercial Vehicle Analyst

During the past few months, we have seen significant changes in the bus market in Europe and North America as operations convert from internal combustion engines to zero-emission buses.

In Europe, Scania and Volvo are moving from building complete buses to a chassis only build. The high cost of zero-emission buses and a competitive market are primary reasons for this. The expected growth of zero-emission buses is forcing the OEMs to better streamline operations, and we expect to see other large OEMs transition down this path.

Source: AMS

In North America, the high cost and complexity of zero-emission vehicles combined with a very competitive market is forcing some of the smaller bus makers out of the market. Last June, **Nova Bus** announced plans to close their bus plant in Plattsburgh in Q1 2025 and exit the U.S. market. Lack of profitability over the years was cited as the reason for this decision.

Last August, **Proterra** filed for Chapter 11 bankruptcy, primarily due to a lack of funding, supply chain constraints and lower product demand. While they are continuing operations under the bankruptcy filing, it is currently unknown if they will continue to make electric buses after their current contracts expire.

Volvo recently announced plans to purchase **Proterra's battery business** for \$210m. This transaction is subject to approval by the bankruptcy court.

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North America Report

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A Grader is a piece of heavy equipment used to level or smooth roads or other surfaces. Also referred to as a Road Grader or a Motor Grader.

PSR Analysis: As the bus markets of Europe and North America continue to transition to zero-emission buses, there is certain to be many shakeups in the industry over the next few years as the OEMs continue to exit this segment or streamline operations for maximum cost efficiency. **PSR**

DATAPOINT: North America Graders

2,700

By Carol Turner, Senior Analyst, Global Operations

2,700 units is the estimate by Power Systems Research of the number of Graders expected to be produced in North America in 2023.

A Grader is a piece of heavy equipment used to level or smooth roads or other surfaces. Also referred to as a Road Grader or a Motor Grader.

Production of Graders in the United States (NA) increased 3.2% in 2022 over 2021. Production is expected to gain nearly 4% in 2023. Prior year declines were attributed to Tier 4 pre-buying incentives and the lull for activities that utilize graders that are predominately road related.

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 57.5% of total units produced, Deere leads in production of Graders in NA. In second position with combined plant totals is Caterpillar with 29%. VT LeeBoy takes third with 1.5%.

Trends: Motor graders have a long-life, and, as a result, new machinery is not always necessary, even though construction related activities focusing on aggregate activities are ongoing. Motor graders are utilized worldwide to build and maintain roads, highways, airport, and other construction projects. These machines increase productivity and are extremely efficient. Expect production to increase up to 10% by 2025. **PSR**

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Brazil/South America Report

By *Fabio Ferraresi*, Director Business Development South America



Fabio Ferraresi

XCMG To Invest US\$ 55 Million in Brazil Electric Truck Plant

XCMG has signed a letter of intent to invest in Pouso Alegre, in the south of the state. XCMG also plans to invest in the creation of a research and development center in the state.

Source: *Brazil Mineral* [Read The Article](#)

PSR Analysis: The letter of intent reaffirms the intention of XCMG to gain market share in Brazil, not only on the Off Highway Electric Truck segment, but also in Brazil's On Highway Truck segment they entered in May 2023. XCMG, the world's third largest CE producer, threatens CAT, Komatsu and Volvo in the OH Tuck segment and plans to become a player in the On Highway market. It should be noted that XCMG already has a 500,000 square meter plant in Pouso Alegre and probably has enough space to make the investment only for equipment and tools for assembly.

Vehicle Production in Brazil Stagnates

During the first 10 months of 2023, Brazilian On Highway Vehicle production faced challenges, with an increase in imports of approximately 58,000 units from January to October and a simultaneous drop in exports by more than 52,000 vehicles. The outcome was a stagnation in production, as only 1,950,000 passenger cars, Minivans and SUVs, light commercial vehicles, trucks, and bus chassis were produced. This marked a decrease of 0.6%, equivalent to almost 12,000 vehicles, compared to the same period in 2022, as reported by Anfavea on Nov. 8, 2023.

Only in October, 199,800 vehicles were produced, reflecting a 3.1% decrease year-on-year and a 4.4% drop month-on-month. Despite this, the inventory level remained relatively stable, closing at 263,400 units in the yards of automakers and dealerships, compared to 265,700 in September.

The rise in imports coupled with a decline in exports has raised concerns at Anfavea regarding the competitiveness of Brazilian products in the regional market. Although Brazil has seen an increase in exports to Mexico and Uruguay, it has been losing ground in traditional markets such as Chile, Argentina, and Colombia.

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

PSR Analysis: The ones who follow our publication and access our databases know the losses in Chile, Argentina and Colombia are caused by the market conditions in these countries and are not caused only by the lack of competitiveness of Brazilian products. On the other hand, the high end imported vehicles in Brazil are always knocking at the door waiting for the smallest opportunity to increase sales. With

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South America Report

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exchange rate fluctuation and aggressiveness of companies like BYD, improved the scenario to permit the import growth in 2023.

Brazilian Marcopolo Approves its Fuel Cell bus in Europe

With a capacity of 53 passengers, Marcopolo's model, the Audace Fuel Cell, is a road unit. The version of the product made in China that has been exhibited and already approved for Europe, carries the cylinders in the luggage rack. Kent Phang, the Sales Director of Allenbus, partner of Marcopolo on the FC vehicle, says there is also an option to place the hydrogen cylinders over the body. With four cylinders, the vehicle exceeds 500 kilometers, according to the company. With six cylinders it is possible to reach 900 kilometers.

Source: *Valor Economico* [Read The Article](#)

PSR Analysis: Marcopolo gains another step on international growth with cutting edge technology products in key markets. Rather than making only the Body of the Vehicle it produces in Brazil, Marcopolo sets up important partnerships and develops key technology partners to produce its own technology for alternative propulsion buses.

VW Announces Pickup Truck To Fight with Fiat Toro

Volkswagen has announced plans to introduce a pickup truck at its São José dos Pinhais plant in Paraná, Brazil, currently dedicated to assembling the T-Cross SUV. This new model, referred to internally as Project Udara, is part of the automaker's €1 billion investment cycle in the country extending until 2028.

In addition to the pickup, the investment includes the development of two flex-hybrid vehicles, a new SUV, and a new engine, slated for production at the Brazilian assembly lines in São Bernardo do Campo and São Carlos.

The forthcoming pickup, larger than the existing Saveiro model produced in São Bernardo do Campo, is expected to feature a flex-fuel engine, with potential hybrid variants. Project Udara is set to be constructed on the MQB platform, and its launch is expected in early 2026.

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

PSR Analysis: The move is similar to what GM did in 2023 with its Montana and is an obvious step, given the success seen in Toro's sales. On the other hand, Stellantis is protecting its market with product diversification with the recently launched RAM Rampage. The medium size pickup trucks already have the heart of Brazilian market, and this market space should increase with broader portfolio offerings that compete with SUVs. **PSR**

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Kubota Corporation and Sumitomo Construction Machinery Co., Ltd. said they have begun discussions regarding the mutual supply of construction equipment.

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Far East: Japan Report

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



*Akihiro
Komuro*

Kubota and Sumitomo Plan Mutual Supply of Equipment

Kubota Corporation and Sumitomo Construction Machinery Co., Ltd. said they have begun discussions regarding the mutual supply of construction equipment.

Internationally, the growing demand for housing and the expected increase in construction work related to infrastructure investment and urban development, plus the increasing shortage of construction labor, are expected to create strong demand for construction equipment to improve efficiency and reduce labor requirements.

Kubota develops, manufactures, and sells small construction equipment used in urban construction, while Sumitomo Construction Machinery specializes in medium and large construction equipment used in a wide range of civil engineering and forestry work.

Both companies are strong in technology development and ICT-based solutions to achieve fuel efficiency and high efficiency in their products. At the same time, both companies face the problem that their current product lineups do not meet the needs of their customers, and expanding their product lineups is one of their key management issues.

Under the agreement, Kubota will consider acquiring 14-ton hydraulic excavators from Sumitomo Construction Machinery, which are frequently used on construction sites in urban areas and are in high demand from overseas customers. Sumitomo Construction Machinery will consider distributing Kubota's smaller models for overseas markets.

Source: Kubota News Release

PSR Analysis: Collaboration between two companies to complement each other's product lines and fill in missing elements is gradually being seen more and more in other segments. As explained in their joint announcement, Kubota and Sumitomo

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Far East Report

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Construction Machinery have different products and target different customers, so a situation in which their products do not compete is conducive to collaboration.

The focus of the formal cooperation agreement will be on price, but I believe that there is a very high probability that this discussion will be successful. **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

クボタと住友建機 建設機械の相互供給の検討を開始

クボタと住友建機は10月31日、建設機械の相互供給に関する具体的な検討を開始したと発表した。

世界各国では、人口増加に伴う住宅需要の拡大、インフラ投資や都市開発に伴う工事の増加が見込まれていることに加え、建設工事における人手不足が深刻化していることから、効率化や省人化に向けて、建設機械の旺盛な需要が見込まれている。

クボタは市街地の建設工事などに使用される小型の建設機械、住友建機は幅広い土木工事や林業などにも使用される中・大型の建設機械に特化し、製品の開発・生産・販売を行っている。両社ともそれぞれの製品における、省燃費・高い操作性などを実現するための技術開発力やICTを活用したソリューションに強みがある。その一方で、工事現場では多様なサイズの建設機械が求められているが、現状の製品ラインアップでは顧客のニーズに応えていないという問題を両社が抱えており、製品ラインアップの拡充が重要な経営課題の一つとなっている。

クボタは、市街地の工事現場で使用されることの多く、海外での顧客のニーズが高い、14t油圧ショベルを住友建機から供給を受けることを検討する。住友建機は、海外向けにクボタの小型機種種の供給を受けることを検討する。

参考: クボタニュースリリース (一部筆者により元記事内容を改編しました)

PSR 分析: お互いの商品ラインアップを補完し、不足している要素を補うための2社間の協業は他のセグメントでも徐々に見る機会が増えている。ニュースリリースでも説明されている通り、クボタと住友建機はそれぞれ異なる製品を持っており、ターゲット顧客も異なるために、製品が競合しないという状況は協業する上で好ましい。正式な協業契約の締結には価格の折り合いがつかうかが最大の焦点になるだろうが、筆者はこの検討は成立する可能性が極めて高いと見ている。 **PSR**

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Far East: South Korea Report

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



Hyundai Sells EVs To Oil-Producing Countries

Hyundai Motor Company has started to develop the EV market in the Middle East. The strategy is to get a head start in the market by making large investments. In response to the global movement to reduce carbon dioxide emissions, interest in the EV market is high in the oil-producing countries of the Middle East.

On Oct. 22, 2023, Hyundai Motor Company, which is expanding its business into environmentally friendly hydrogen energy in addition to local vehicle production, signed a joint investment agreement with the Saudi National Fund to establish a semi-finished product assembly plant. The joint venture plant will be built in King Abdullah Economic City and will have an annual production capacity of 50,000 units.

The JV plant will produce both EVs and regular vehicles and is expected to start construction in the first half of 2024 and production in the first half of 2026. Hyundai intends to make this plant its central production base in the Middle East and North Africa.

If the company can solidify its position as an EV manufacturer in Saudi Arabia, it can serve as a foothold for expansion into the surrounding Middle East region. Minister of Investment Khalid Al Fareef has outlined a plan for Saudi Arabia to become an EV manufacturing hub with an annual production capacity of 500,000 units by 2030.

Source: KOREA WAVE

PSR Analysis: Saudi Arabia is poised to become the center of the EV industry in the Middle East region, and in September, LUCID Group, an emerging U.S. EV manufacturer, announced the opening of its first overseas plant in Jeddah. LUCID is 60% owned by a Saudi Arabian sovereign wealth fund.

Both Tesla and Saudi Arabia are in early-stage discussions to build manufacturing industries. As I have pointed out many times, Hyundai Motor has been very active in developing markets outside of China, with a particularly large investment in the US state of Georgia, where it is expanding with several parts suppliers and trying to establish a local manufacturing supply chain. While it may be some time before this investment in Saudi Arabia bears fruit, it is an indication of the company's judgment that the upfront investment is worthwhile. **PSR**

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Far East Asia Report

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小室 明大 – 極東及び東南アジア リサーチアナリスト

現代自動車、産油国にEVを売る…市場先取り戦略

現代自動車が中東のEV市場の開拓に乗り出した。大規模な投資で市場の先取りに乗り出す戦略だ。世界的な二酸化炭素削減の動きを受け、産油国の中東諸国でもEV市場への関心は高い。現地での自動車生産に加え、エコ水素エネルギーなどにも事業を拡大している現代自動車は10月22日、サウジ国富ファンドと半製品組立工場設立のための合弁投資契約を締結。キングアブドラ経済都市に年間5万台を生産できる合弁工場を建設する。

合弁工場は2024年上半期着工、2026年上半期生産開始を目標にEVと普通車の両方を生産する。現代自動車はここを中東や北アフリカ地域の中心生産拠点としたい考えだ。

また、サウジでEVメーカーとしての地位を強固にすれば、周辺中東地域への進出の足掛かりになる。ハーリド・アル・ファーフ投資相は2030年までにサウジを年産50万台規模のEV製造ハブにするという青写真を明らかにしている。

参考: KOREA WAVE (一部筆者により元記事内容を改編しました)

PSR 分析: サウジアラビアは中東地域におけるEV産業の中心になろうとしている。9月には米国の新興EVメーカーであるLUCIDグループがジッダに初の海外工場を開設したと発表したばかりだ。LUCIDの株式の60%を保有するのはサウジアラビアの政府系ファンドである。テスラもサウジでも製造工業建設について初期段階での協議を行っている。個々で何度も指摘しているように、現代自は中国以外の市場開拓に非常に積極的で、特に米国ジョージア州への投資は大きく、複数の部品サプライヤーとともに進出し、現地生産のサプライチェーンを構築しようとしている。今回のサウジへの投資が実り収穫時期を迎えるにはしばらく時間がかかるかもしれないが、先行投資を期待していることは明らかだ。 **PSR**

Southeast Asia: Thailand Report

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

China Auto Manufacturer To Invest in Thai EV Motorbike Plant

Chinese automotive equipment manufacturer Suzhou Harmontronics Automation Technology plans to build an electric motorcycle factory in Thailand's Eastern Economic Corridor (EEC), eyeing a market set to grow, thanks to government subsidies.

The company plans to invest \$281 million (10 billion baht) to secure annual production capacity of 150,000 units by 2028. The plans were revealed by the office of the EEC.

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Southeast Asia Report

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Suzhou Harmontronics, founded in 2007, handles production equipment for the automotive industry and does business with major Chinese automakers and parts manufacturers.

Suzhou Harmontronics will build the factory at an industrial park in Chonburi Province, within the EEC zone, and will assemble electric motorcycles and manufacturing replaceable batteries and charging equipment at the facility. A start date for operations was not disclosed.

Suzhou Harmontronics, founded in 2007, handles production equipment for the automotive industry and does business with major Chinese automakers and parts manufacturers. It is listed on the Shanghai Stock Exchange's STAR Market for tech startups.

Sales for 2022 rose 51% to \$156 million (1.14 billion yuan). Net profit totaled 73.51 million yuan, up 21%.

Electric motorcycles account for a small proportion of new-vehicle sales in Thailand, but the government is striving to expand the market by providing up to 18,000 baht for their purchase as of November.

In August, state-owned oil company PTT said it would produce electric motorcycles with Taiwanese two-wheeler manufacturer Kymco.

The EEC serves as Thailand's special industrial development zone.

Source: Nikkei Asia

PSR Analysis: As mentioned in the Southeast Asia article above, the adoption of electric motorcycles in Thailand is still in its infancy, but the investment in production facilities with an annual capacity of 150,000 units at this point is extremely large. I think that this investment is not only for production in the Thai market, but also for export to neighboring countries.

There are many cases where there are discrepancies between the investment projects announced in China and the details of the actual projects, so it is necessary to check how these projects will proceed. In any case, it would be natural for China, which currently has the world's largest EV motorcycle production capacity, to turn its attention to the Southeast Asian motorcycle market, one of the world's largest markets. In the past, when Chinese OEMs tried to enter the Southeast Asian market with engine models, they were unsuccessful due to major quality issues. I will keep a close eye on how Chinese manufacturers fare in the Thai motorcycle market, which, along with the four-wheeler market, is a stronghold of Japanese OEMs. **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

中国の車設備企業、タイにEVバイク工場 420億円投資

タイ東部の経済特区「東部経済回廊 (EEC)」の事務局は7日、自動車設備などを手がける中国の蘇州瀚川智能科技がタイに電動二輪 (EVバイク) の新工場を設けると発表した。2028年までに総額100億バーツ (約420億円) を投じ、年15万台の生産能力を確保する。

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瀚川智能の幹部がEEC事務局との会談で明らかにした。EEC域内にあるタイ東部チョンブリ県の産業団地に工場を建設し、EVバイクの組み立て、交換式電池や充電設備の製造などを始める。稼働時期は明らかにしていない。

瀚川智能は07年に創業。自動車業界向けの生産設備などを手がけており、中国の大手自動車メーカーや部品メーカーと取引がある。上海証券取引所のハイテク新興企業向け市場「科创板」に上場しており、22年12月期の売上高は前の期比51%増の11億4280万元（約240億円）、純利益は同21%増の約7351万元だった。

足元でタイの新車販売に占めるEVバイクの比率は高くないが、政府は23年11月時点でEVバイクの購入代金を最大1万8000バーツ支給するなどして市場拡大を図っている。国営エネルギー大手のタイ石油公社（PTT）が8月、台湾二輪大手の光陽工業（キムコ）とEVバイクの生産に乗り出すと発表するなど動きが活発化している。

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: 東南アジア上記の記事でも触れられているようにタイにおけるEVバイクの普及はまだこれからという状況だが、この時点で年産15万台規模の生産設備への投資額は非常に大きい。これは単なるタイ市場に留まらず、近隣諸国への輸出をも視野に入れているのではないかと筆者は予測する。

中国で発表される投資プロジェクトと、現実的に遂行されるプロジェクトのディテールに乖離があるケースは多いため、実際にこれらがどのように進められていくのかはチェックが必要だが、いずれにしろ、現時点で世界最大のEVバイクの生産能力を持つ中国が、世界最大の市場のひとつである東南アジアのバイク市場に目を向けるのはごく自然な流れだろう。過去にもエンジンモデルで中国OEMが東南アジアへの市場参入を試みた際には、品質的に大きな問題がありうまくいかなかった。四輪とともに日系OEMの牙城ともいえるタイ二輪市場で中国メーカーがどう立ち振る舞うか注視していく。**PSR**

China Report

By *Jack Hao*, Senior Research Manager - China



*Jack
Hao*

Weichai-BYD JV Begins 56 billion yuan, 50GWh Battery Project

The joint venture between Weichai Power and BYD has started construction on its factory, which has attracted widespread attention and has quickly become a hot topic in the industry. On Nov. 3, 2023, in Shandong Province, the Weichai (Yantai) New Energy Power Industrial Park project, a joint venture between Weichai Power and BYD, officially began construction.

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China Report

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BYD has a layout in core components such as commercial vehicles, batteries, and electric drives, which can fill the gap of Weichai.

Project plans call for the creation of a research and development and manufacturing base for batteries, motors, electronic controls, and electric drive assemblies that run through new energy commercial vehicles.

After the project is put into operation, the direct beneficiaries will include Weichai New Energy Commercial Vehicles under the Weichai Group and located in Yantai.

May 12, 2023, Weichai Power and BYD signed a strategic cooperation agreement in Shenzhen to jointly produce power batteries in Shandong.

According to public information, the settled in Fushan District, Yantai City. The project is divided into three phases, covering an area of approximately 1700 acres, and is divided into two parts. One part is a research and development and manufacturing base for power batteries, which will have an annual production capacity of 50GWh.

The other part is a manufacturing base for other core components of new energy vehicles, which will be built by Weichai in cooperation with BYD. After completion, it will have an annual production capacity of 500,000 flat wire motors, 400,000 electric controls, and 50,000 electric drive assemblies.

Source: [Sohu](#) [Read The Article](#)

PSR Analysis: At present, the penetration rate of new energy for trucks in China is only 5%, and the penetration rate of new energy for construction logistics trucks with a high degree of electrification is also less than 10%, even though the commercial vehicle electrification market has great potential.

The establishment of a joint venture factory between Weichai Power and BYD provides strong support for Weichai in the field of new energy powertrain, and also directly benefits the new energy vehicle business of Weichai's new energy commercial vehicles. The new energy powertrain will achieve localized matching, and its overall quality, reliability, economy, and brand competitiveness will also be significantly improved.

As a leader in the fields of traditional fuel engines and commercial vehicles, Weichai urgently needs to make changes in the face of the new energy wave.

BYD has a layout in core components such as commercial vehicles, batteries, and electric drives, which can fill the gap of Weichai. For BYD, it is also possible to leverage Weichai's strength in the field of commercial vehicles to coordinate the development of its truck and bus businesses, while also fully integrating battery supply into the Weichai system. **PSR**

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India Report

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



*Aditya
Kondejkar*

Construction Equipment Sector Poised for Substantial Growth

The construction equipment industry anticipates a robust 5-year outlook with a projected 15% year-on-year growth. This optimistic forecast is anchored in the momentum generated by ongoing construction projects and increased infrastructure spending. The government's substantial allocation of \$130.57 billion (Rs 10 lakh crore) underscores its commitment to fortifying this sector.

Moreover, the recognition of the scale and technological prospects within the construction landscape further emphasizes the strategic importance of advancements in this domain.

Source: *Times of India* [Read The Article](#)

PSR Analysis. The construction equipment (CE) sector has undergone significant transformation over the past 2-3 years, marked by major players reaching peak manufacturing capacities and subsequently embarking on expansive growth initiatives.

Fiscal year 2023 marked a noteworthy achievement as the CE industry surpassed the 1 lakh unit sales milestone for machines. Projections for fiscal year 2024 suggest a sustained growth trajectory ranging between 12-15%, according to industry data. In terms of revenue, the sales figures for FY23 amounted to an impressive top line, exceeding \$6 billion.

This industry upswing is fortified by national-level initiatives, including the National Infrastructure Master Plan- Gati Shakti, the National Infrastructure Pipeline (NIP), and the National Monetization Pipeline. These strategic policies not only attract investments for infrastructure development but also contribute to an overall industrial growth surge, presenting novel avenues for sectoral development.

Despite these positive indicators, the sector faces some negative factors due to the political climate. The government's proposal for a substantial Rs 10 lakh crore capital expenditure (capex) in the current financial year, representing a 37.4% increase from the revised estimates for 2022-23, underscores a heightened focus on infrastructure development.

However, the impending elections and associated political uncertainties introduce an element of caution, potentially adding a degree of volatility to the industry's outlook. As the CE sector continues its expansion amid these dynamics, strategic adaptability and risk management become crucial for sustained success. **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 maintained an important presence in Russia from 2013-2022 to bring important updates to our clients about the powered equipment markets within Russia. We are continuing to monitor the current situation 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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