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Alternative Power

By Guy Youngs, Forecast & Adoption Lead

EV Sales Growth Is Slowing

EV sales continue to rise, but at a slower rate than in previous years

Guy Youngs

Over the course of the last two years or so, sales of battery electric vehicles, while continuing to grow, have posted lower year-over-year percentage growth rates than they had in years prior. EV sales used to grow at 50%+ per year, but for the last couple years, they have grown closer to about 25% per year.

Instead of the perpetual 50% CAGR that had been optimistically expected, we have seen a global EV sales growth rate of 23% in the first 10 months of this year, according to a report released by Rho Motion (recently acquired by Benchmark Mineral Intelligence). That includes a +32% bump in Europe, +22% bump in China, +4% in North America, and a big +48% bump in the "rest of the world."

Source: *Electrek* **Read The Article**

PSR Analysis: Apart from correctly the false narrative, what is interesting is that while all the focus has been on EV volumes supposedly declining, in reality, it's petrol powered vehicle volumes which are declining in real terms. **PSR**

Renewables and AI Rapidly Transforming World's Energy Future

The International Energy Agency (IEA) says renewables and AI are reshaping the world's energy future, and that transformation is happening faster than anyone expected. In its new "World Energy Outlook 2025," the IEA warns that energy security risks now stretch far beyond oil and gas.

Critical minerals essential to clean tech, defense, and AI have become the new fault lines in global supply chains. The IEA also states that energy has become a central focus of geopolitical power struggles, making it one of the defining economic and security challenges of our time

The IEA's annual "World Energy Outlook" explores three possible scenarios for the future, emphasizing that none are predictions. Instead, they are roadmaps that show what could happen depending on the choices governments and industries make on policy, technology, and investment.

Across every scenario, one theme stands out: electricity demand is surging faster than for any other form of energy. Electricity currently accounts for only about 20% of global energy use, yet it powers more than 40% of the global economy.

Source: *Electrek* **Read The Article**

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Alternative Power

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China is replacing its diesel trucks with electric models faster than expected, potentially reshaping global fuel demand and the future of heavy transport.

PSR Analysis: Driving this growth are data centers, AI, and electrification across transportation, heating, and manufacturing sectors and the IEA warns that grid expansion and storage aren't keeping up with this growth. **PSR**

China's Diesel Trucks Shifting To Electric

China is replacing its diesel trucks with electric models faster than expected, potentially reshaping global fuel demand and the future of heavy transport. In 2020, nearly all new trucks in China ran on diesel. By the first half of 2025, battery-powered trucks accounted for 22% of new heavy truck sales, up from 9.2% in the same period in 2024, according to Commercial Vehicle World, a Beijing-based trucking data provider. The British research firm BMI forecasts electric trucks will reach nearly 46% of new sales this year and 60% next year

Heavy trucks carry the lifeblood of modern economies. They also contribute significantly to global emissions of carbon-dioxide: In 2019, road freight generated a third of all transport-related carbon emissions. Trucking has been considered hard to decarbonize since electric trucks with heavy batteries can carry less cargo than those using energy-dense diesel

Investments in charging infrastructure are also boosting demand for electric trucks. CATL said it plans a nationwide network of swap stations covering 150,000 kilometers (about 93,000 miles) out of China's 184,000 kms (about 114,000 miles) of expressway

Source: *MSN* **Read The Article**

PSR Analysis: While electric trucks are two to three times more expensive than diesel ones, their higher energy efficiency and lower costs can save owners an estimated 10% to 26% over the vehicle's lifetime, according to research by Chinese scientists. **PSR**

Spain Doubles Down on Hydrogen Transport as Europe Steps Away

The European Commission's latest funding decision for alternative fuels infrastructure landed with a strange twist. On paper, the bloc approved support for 38 new hydrogen refueling stations spread across the continent.

In practice, almost all of them are going to a single country. Spain secured roughly four out of five stations in this round, which puts it at the center of an infrastructure buildout that is moving in the opposite direction from the rest of Europe

The scale of the EU funding approval is substantial, with more than US$ 700 million (€600 million) committed across a wide range of projects that genuinely strengthen Europe's transport decarbonization efforts

Source: *CleanTechnica* **Read The Article**

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Alternative Power

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PSR Analysis: While Spain moves forward with hydrogen, the rest of Europe has moved away with Austria, Germany, Denmark, Norway and the United Kingdom, all shutting down stations rapidly. Even in France, only a limited number of stations remain operational and most are dependent on direct municipal support. The economics of hydrogen depend on high throughput, yet the vehicles have never arrived in sufficient numbers to justify the investment. **PSR**

DATAPOINT: *North America Golf Cars Production*

60,100

By Carol Turner, Senior Analyst, Global Operations

60,100 units is the estimate by Power Systems Research of the number of Golf Cars expected to be produced in North America during 2025.

Golf Cars are small, motorized vehicles that transport golfers and their equipment around a golf course. They may also be used as a Neighborhood Electric Vehicle (NEV) to transport people within golfing communities or similar neighborhoods.

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 31% of total units produced, Yamaha Motor leads in production of gas-powered Golf Cars in the United States (NA). In second position is Club Car with 26.5%; third, is Textron with 22.25%.

Export: Collectively, up to 20% worldwide.

Trends. In 2024, production of engine powered Golf Cars increased 15.5%. Production is expected to remain flat with a slight drop of 2% in 2025. The current demand for golf carts production is driven by their use beyond traditional golf courses, especially for private use among homeowners and for commercial/ tourism needs.

To recap, the 2020 production drop was mostly due to supply chain disruptions such as lack of parts availability. During COVID, electric golf car production dramatically increased (some electric manufacturers reporting up to a 200% increase in production). The pandemic accelerated demand for golf cars, as a “lifestyle” vehicle, not necessarily for golf course needs. As mentioned, there was demand but parts were difficult to obtain.

There is continuous demand for new models as fleets are being upgraded offering fuel and power efficiency along with intriguing model designs. Gas models are more powerful and are preferred on hilly terrains.

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In many areas, golf carts are replacing cars with street legal models for short, leisurely jaunts. Street legal units meet requirements for low-speed vehicles for usage on roads 35 mph and under.

Production should remain flat over the next couple of years with an increase in gas powered units that are eco-friendlier. Further recovery in the US economy and a growing number of golfers will support demand. Expect production of gas-powered units to increase 10% by 2030. In many areas, golf carts are replacing cars with street legal models for short, leisurely jaunts. Street legal units meet requirements for low-speed vehicles for usage on roads 35 mph and under.

North America Battery Powered Golf Cars

Bintelli Electric Vehicles
ICON Electric Vehicles (also makes gas powered units)
JH Global Services, Inc. (Star EV)
Tomberlin
~Club Car, Textron & Yamaha also make battery/electric powered units.

Battery Production:

2023: 140,113
2024: 172,544 (23% increase)
2025: 181,607 (5% increase) **PSR**

North America Report

By Chris Fisher, Senior Commercial Vehicle Analyst

EPA Won't Delay 2027 NOx Rule, But Plans Major Changes

Chris Fisher

The U.S. Environmental Protection Agency is moving forward with the 2027 timeline for its **heavy-duty NOx rule**—currently set to take effect with the 2027 model year—but says changes are in store.

The American Trucking Associations (ATA), National Tank Truck Carriers, Truckload Carriers Association, and 49 state trucking associations in August penned a letter to EPA, asking the regulator to push implementation to 2031, citing "substantial compliance costs and operational burdens at a time when the trucking industry is already contending with historically difficult market conditions."

Administrator Lee Zeldin in March announced that the EPA was reevaluating the Biden-era 2022 Heavy-Duty Engine and Vehicle rule that regulates oxides of nitrogen (NOx) and other emissions beginning with Model Year 2027.

EPA told CCJ the agency continues to reevaluate the rule and plans to propose a rule in the spring of 2026 that will take effect the following model year.

"If finalized," EPA said, "the action will make major changes to the program requirements while maintaining the Model Year 2027 start of the standards, which

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can significantly reduce the cost of new heavy-duty vehicles, while still protecting human health and the environment, and avoiding regulatory distortions of the heavy-duty vehicle market."

A spokesperson for Daimler Truck North America told CCJ Monday that the company appreciates EPA's efforts to reduce costs while maintaining a focus on air quality and legislative consistency, adding "[This] announcement provides the regulatory certainty needed for effective production planning and customer support."

The new limits currently tighten tailpipe NOx emissions to a level 80%-plus below the current standard and reduce the particulate matter limit by 50%. The agency also will require that OEMs extend warranties to 450,000 miles from 100,000 and useful life limits to 650,000 miles from 435,000 miles.

EPA did not disclose plans for its 2026 revised proposal, but the extended warranty has been cited by OEMs as a major driver of increased costs for MY2027 trucks. Given that EPA expects its changes to the current NOx regulations to drive down costs, warranty provisions are likely to be affected.

Source: CCJ

PSR Analysis: It appears the EPA will proceed with the implementation of the Phase 3 GHG emission regulations for medium and heavy vehicles for MY2027. However, they are likely to make significant adjustments to the standards. It is also likely they will eliminate the extended warranty for the MY2027 vehicles thus significantly reducing the up-front purchase price.

While we will not know the final outcome until this spring, it is possible the EPA will maintain the 2027 nitrous oxide emission rule at the 0.035 g/hp-hr standard moving forward from 2028-2032. If the EPA flattens the nitrous oxide rule, it would eliminate the need to transition from ICE engines toward zero-emission vehicles during this period. **PSR**

Europe Report

By Emiliano Marzoli, Manager of European Operations

EU-US Trade Deal Threatens European Production

Emiliano Marzoli

The EU-US trade agreement is facing intense criticism from European policymakers and industry leaders who deem it unbalanced, unfair, and a "significant policy mistake." The persistence of high US tariffs and mounting non-tariff barriers are severely hurting Europe's export-oriented industrial sector. Experts warn the deal has cornered the EU, increasing its dependency on critical raw materials and semiconductors.

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Specifically, US Section 232 tariffs on steel and aluminium derivatives are crippling the machinery sector with complex compliance rules. Failure to comply can trigger punitive tariffs up to 200%, prompting some firms to halt US exports entirely and leading to a sharp drop in sales (e.g., German machinery exports have fallen 18.5%). EU lawmakers are now pushing for amendments, including sunset clauses and safeguards, amid concerns that the current framework is unsustainable.

Source: *Euractiv* **Read The Article**

PSR Analysis: These mounting export barriers are projected to negatively impact European vehicle production volumes, both on-road and off-road, in 2026. For on-road vehicles (passenger cars), while a modest production recovery of approximately 1.9% is possible in 2026, volumes are forecast to remain significantly below pre-pandemic levels due to new, escalating US tariffs (up to 15-50% on EU-made cars) and intense competition from global rivals.

To bypass these tariffs and preserve market share, European automakers are incentivized to shift new production and investment to the US, which risks the long-term contraction or "hollowing out" of EU manufacturing capacity.

For off-road vehicles (construction, agriculture, etc.), which are steel-intensive and rely on general machinery, the production outlook is severely depressed. Punitive tariffs, high compliance costs, and restricted access to the US market for components ensure that the sector will face reduced volumes, margin erosion, and sustained challenges to global competitiveness in 2026. **PSR**

South America/Brazil Report

By Fabio Ferraresi, Director Business Development South America

Yanmar Invests US$ 50 million Tripling Indaiatuba Factory

Fabio Ferraresi

Yanmar announced an investment of US$ 50 million, to build a manufacturing plant in Indaiatuba, São Paulo. The facility will occupy 140,000 square meters — triple the area of the current unit — with phased implementation through 2030; the first 36,000 square meter unit is planned to begin operations in 2027.

With this expansion, the company expects to increase annual tractor production from 5,000 to 7,000 units, centralize industrial, administrative and logistics operations, deploy automated assembly lines with torque control, streamline logistics, and integrate sustainability measures such as natural lighting, photovoltaic energy and automated lighting. The project should generate around 100 direct and indirect jobs by 2029.

Source: *Agrimídia* **Read The Article**

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The investment by Yanmar strengthens its industrial base in Brazil and reduces reliance on imports.

PSR Analysis. The investment by Yanmar strengthens its industrial base in Brazil and reduces reliance on imports, aligning capacity expansion with anticipated growth in demand for small and mid-sized tractors. Their bet confirms the market belief on sustained recovery and expansion of the agribusiness sector in Brazil. **PSR**

Eletra Starts In-House BEV Bus Chassis Assembly

Eletra announced an investment of BRL 40 million (approximately US$ 7 million) to expand its factory in São Bernardo do Campo (SP) and build a new in-house chassis assembly line. The initiative will transform Eletra into a full-fledged chassis manufacturer, rather than relying solely on chassis supplied by partners.

With the expansion, annual production capacity of electric bus chassis is expected to increase from 1,800 to 3,000 units. The company will combine mechanical chassis platforms — still supplied by Mercedes Benz or Scania — with in-house electrification using components from WEG (motors, inverters, batteries). The chassis will cover a range of vehicle types: from midi-buses (≈ 11.5 m) to standard and articulated buses (12–13 m, 20–23 m), all with low floor and expected autonomy between 250–350 km. Eletra plans to capture both domestic demand and export markets in Latin America.

Source: *AutoData* **Read The Article**

PSR Analysis. The investment consolidates Eletra's position as a vertically integrated producer of electric bus chassis in Brazil, offering greater control over pricing, supply chain and production flexibility. By internalizing chassis assembly and electrification, Eletra reduces dependence on bus OEMs, which may lower costs and improve responsiveness to market demand. The projected capacity increase to 3,000 chassis per year positions the company to scale with growing demand, but success depends on projected demand for electric buses. **PSR**

Volvo Launches Articulated Dump Truck with 55-Ton Capacity

Volvo CE has introduced in Brazil the latest generation of its largest articulated dump truck, the A60. The updated model offers a payload capacity of 55 000 kg and a dump body volume of 33.6 cubic meters — the highest among articulated haulers available locally. It is powered by the Volvo D16J engine, delivering 470 kW (≈ 630 hp) and 2,960 Nm torque, optimized for heavy off-road operations.

Compared with the previous generation, the A60 delivers a 15% gain in fuel efficiency and 5% increase in productivity per loading cycle. The redesign includes improvements in drivetrain, transmission, traction control and operator ergonomics, reflecting Volvo's renewed lineup update for articulated trucks in Brazil.

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Source: *Automotive Business* **Read The Article**

PSR Analysis. The upgraded A60 meets rising demand from mining, quarrying and large-scale infrastructure sectors by combining high payload, improved fuel economy and proven off-road capability, translating into lower operating cost per ton transported. Its enhanced drivetrain, traction control and stability — crucial in challenging terrain — should increase uptime and reliability for high-utilization fleets. **PSR**

Far East: Japan Report

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

Delays in Agricultural Equipment Delivery Worsen

Akihiro Komuro

The increase in 2025 rice prices has provided farmers with more financial flexibility, leading to a surge in demand for upgrades to agricultural machinery. However, farmers are reporting longer wait times for machinery orders, sometimes up to a year. They are expressing concerns such as, "We can't plan next season's operations," and "If delivery is delayed until next year, can we really count it as an expense for this year?"

Many small- and medium-sized farms had delayed replacing machinery due to prolonged low rice prices, opting instead to repair old equipment or purchase used machinery. The 2025 rice harvest, however, saw more farmers gain financial leeway, increasing the demand for replacing or purchasing new machinery.

While agricultural machinery manufacturers have been increasing production of high-efficiency models, such as smart farm equipment, targeting large-scale agricultural corporations, the supply-demand balance has shifted. This has created a situation in which supply cannot keep pace with the sudden surge in demand.

Source: JA.com

PSR Analysis: Delayed delivery times are attributed to increased orders and production delays caused by component shortages, strained manufacturing line resources, and the rising proportion of smart agricultural machinery and high-performance equipment. Additionally, the impact of high material costs and an unstable parts supply have contributed to these delays. At the same time, the National Agriculture and Food Research Organization (NARO) recently announced new agricultural machinery models that have passed safety inspections. This suggests that delays in regulatory compliance and certification are another factor contributing to delivery delays.

The combination of delivery delays and surging demand indicates that the Japanese agricultural machinery market is transitioning. This transition is

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However, user demand, which depends on farmers, is strongly influenced by rice prices and policy, requiring caution in long-term revenue forecasting.

characterized by "renewal demand, smart agricultural machinery adoption, and supply constraints."

For manufacturers, this presents an opportunity to generate revenue beyond machinery sales alone. This includes expanding parts supply and after-sales service networks to handle the surge in orders, as well as developing distribution management and resale businesses for used machinery and rental equipment.

However, user demand, which depends on farmers, is strongly influenced by rice prices and policy, requiring caution in long-term revenue forecasting. Rather than hasty capital investment, a business design that prioritizes flexibility and sustainability is preferable. **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

コメ価格上昇に伴い農機の納期遅延が深刻化

2025年産米の米価上昇によって農家の資金繰りに余裕が生まれ、農業機械の更新需要が急速に高まった。一方で、農家からは「農機を発注しても半年から1年待ち」といった声が増えており、「来季の作業計画が立てられない」「納品が翌年になると当年の経費にできないのでは」といった不安も寄せられている。

中小規模の農家では、長引く米価低迷で機械更新を抑え、古い農機の修繕や中古農機の購入で対応するケースが多かった。しかし、2025年産米は資金余力を得た農家が増えたことで、農機の買い替えや新規購入の需要が顕在化した。農機メーカー側は大規模農業法人向けにスマート農機など作業効率の高い機種の生産体制を整えてきたが、需給バランスが崩れ、供給が需要の急増に追いつかない状況が生まれている。

参考: JA.com (一部筆者により元記事内容を改編しました)

PSR 分析: 納期遅延の背景には、単なる受注増だけでなく、部材不足や製造ラインのリソース逼迫 (特にスマート農機／高機能機の比率上昇) による生産遅延、また世界的な素材コスト高や部品供給の不安定さも影響している、との言及がある。また、農研機構では最近、安全性検査をクリアした農機の型式追加を公表しており、規制・認証対応の遅れが"納期遅延のもう一つの要因"になりつつある可能性も示されている。

この納期遅延と需要急増の状況は、単なる繁忙期ではなく、日本の農機市場が 「更新需要 × スマート農機導入 × 供給制約」というトランジション期 にあることを示す重要なサインだと考えて良い。メーカーにとっては受注急増に対応するための 部品供給・アフターサービス網の拡充、中古機／レンタル機の流通管理・再販ビジネスなど、単なる機械販売以外の収益構造を築くチャンス

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である。一方で、農家依存のユーザー需要は「米価や政策」に強く左右されるため、長期的な収益予測には慎重さが必要である。安易な設備投資ではなく、柔軟・継続性を見据えた事業設計が望ましい。**PSR**

Far East: South Korea Report

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

Akihiro Komuro

Government Continues 2025 EV Motorcycle Promotion Project

South Korea's Ministry of Environment is continuing the "Electric Motorcycle Subsidy Program and Battery Swap Charging Facility Support Program," which was launched in spring 2025. Its effects appear to be gradually emerging in the market.

The program's key points include:

- A national initiative aiming to popularize 20,000 electric motorcycles in 2025
- The national subsidy is US$ 10.86 million (16 billion won), which significantly reduces the purchase price when combined with local government subsidies
- Particularly favors battery swap systems (BSS), subsidizing up to 70% of the vehicle price (previously 60%)
- Plans to establish 500 new battery swap stations to develop swap infrastructure
- A separate US$ 3.4 million (5 billion won) will be invested in swap station development
- Subsidies are limited to batteries and stations that comply with national standards (KS specifications)
- A policy mechanism will promote standardization to prevent fragmented specifications among manufacturers
- Additional subsidies will be provided for high-performance models with fast-charging capability (3 kW or higher) and battery condition monitoring

The primary target for adoption is commercial two-wheelers for delivery riders to solve charging wait times through the swap system

The objectives are to reduce noise and exhaust emissions, improve the urban environment, and accelerate the integration of electric motorcycle (EV) infrastructure

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South Korea Report

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This initiative is more than just a policy to distribute 20,000 electric motorcycles. Rather, it is a comprehensive package that encompasses infrastructure, standards, and demand creation.

Battery-swap electric motorcycles: 1,654 units in 2023, doubling to 3,429 units in 2024. As of 2024, there are 1,872 swap stations nationwide. The plan is to add another 500 stations.

Source: Seoul Shinmum

PSR Analysis: This initiative is more than just a policy to distribute 20,000 electric motorcycles. Rather, it is a comprehensive package that encompasses infrastructure, standards, and demand creation.

The goal is to rapidly establish a "battery-swap EV motorcycle + standardized battery-swap station network" across South Korea. This system aims to advance the electrification of delivery bikes, eliminate charging wait times, standardize fragmented specifications through national regulation, and promote high-performance electric motorcycles. The strategy seeks to drive low-quality, low-cost vehicles out of the market. If sustained, the system will likely create a structure in which those controlling the battery pack, swap station, and subscription model will profit more than manufacturers selling vehicles alone. **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

環境部の2025年電動二輪車普及事業が継続稼働中

韓国環境部は、2025年春に始めた「電気二輪車補助金制度およびバッテリー交換型充電施設支援制度」を継続しており、その効果が徐々に市場に現れてきているようだ。

制度の概略は以下の通り。

- ✓ 2025年に 電動二輪車 2万台の普及を目標とする国家事業
- ✓ 国費補助金は 160億ウォンで、自治体補助金と合わせて購入価格を大きく軽減。
- ✓ 特に バッテリー交換式（BSS方式）を優遇し、車両価格の70%まで補助（従来60%）。
- ✓ 交換式インフラとして バッテリー交換ステーション500基を新設予定。
- ✓ 交換ステーション整備には 別枠で50億ウォンを投入。
- ✓ 補助金対象は 国家標準（KS規格）に適合したバッテリー・ステーションに限定。
- ✓ メーカー間で規格が乱立しないよう、標準化を政策で強制的に推進する仕組み。
- ✓ 高速充電対応（3kW以上）や電池状態モニタリング等、高性能モデルには追加補助が付与。

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- ✓ 普及ターゲットは主に 配達ライダー向け業務用二輪で、充電待ち問題を交換式で解消。
- ✓ 目的は 騒音・排ガス削減、都市環境改善、EV二輪の社会インフラ化の加速。

2023年のバッテリー交換式電動二輪：1,654台 → 2024年3,429台と2倍以上に増加した。交換ステーションは全国で1,872基（2024年時点）。ここにさらに500基を上乗せする構想だ。

参考: Seoul Shinmum（一部筆者により元記事内容を改編しました）

PSR 分析: この事業は、単に「2万台EVバイクを配る」施策ではなく、「バッテリー交換式EV二輪＋標準化されたバッテリー交換ステーション網」を韓国国内で一気に立ち上げるための、インフラ＋規格＋需要創出のパッケージである。この制度が狙うものとして、配達バイクの電動化を進めて、充電待ち時間を解消し、規格がバラバラな状況を国が標準化して統一を図り、高性能なEV二輪を普及させることで、低品質の格安車を市場から締め出す意図があると言えるだろう。この制度が継続すれば、単に車両を販売するメーカーよりも、電池パック+交換ステーション+サブスクモデルを握るプレイヤーが利益を得やすい構造に繋がるだろう。**PSR**

Vietnam Report

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

Vietnam's EV Motorcycle Market Rapidly Expanding

Akihiro Komuro

According to statistics from the Vietnam Association of Motorcycle Manufacturers (VAMM) and other motorcycle data, gasoline motorcycle sales are slowing while electric two-wheelers are expanding rapidly. In the third quarter of 2025, the five VAMM member companies (Honda, Yamaha, Piaggio, Suzuki, and SYM) sold a total of 620,000 units, which is a 9.37% decrease compared to the same period last year. Cumulative sales from January to September remained nearly flat compared to 2024, totaling 1.91 million units.

Meanwhile, the electric motorcycle market is experiencing rapid growth. VinFast dominates the market, with sales surging 354% YOY due to the release of new models, such as dual-battery vehicles. EV motorcycles are gaining traction, primarily in urban areas, and are steadily expanding their market share.

Source: VietBiz

PSR Analysis: This development is supported by Hanoi City's policy to ban gasoline motorcycles in its central area starting in 2026. Additionally, hundreds of thousands of delivery riders have expressed strong interest in swap-ready electric motorcycles to reduce fuel costs and eliminate charging waiting time.

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Vietnam Report

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VinFast's strength lies in its dual-battery system, which balances range with instant swapping, as well as its ecosystem strategy of providing vehicles, batteries, and swap stations as an integrated package. VinFast is already building a swap network of around 1,000 locations, significantly outpacing competitors. Vietnam is the most EV-penetrated motorcycle market in ASEAN. The model established here is likely to spread to large motorcycle markets, such as Indonesia and the Philippines, in the future. **PSR**

東南アジア > ベトナムレポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

ベトナムの電動バイク市場が急拡大、ガソリン車は販売減速

ベトナム二輪車製造業者協会（VAMM）およびMotorcyclesDataの統計によると、ガソリンバイクの販売が減速する一方、電動二輪が急速に拡大している。2025年第3四半期、VAMM加盟5社（ホンダ、ヤマハ、ピアッジオ、スズキ、SYM）の販売台数は62万台で、前年同期比9.37%減。1-9月累計でも191万台と、2024年比でほぼ横ばいにとどまった。

その一方では電動バイク市場が急拡大しているとのことだ。VinFast がシェア首位で、デュアルバッテリー車などの新モデル投入により販売台数が前年比 354% 増。EVバイクは主に都市部での利用が進み、シェアを拡大している。

Source: VietBiz

PSR 分析: この背景には、ハノイ市が2026年から中心部でガソリンバイクを禁止する方針という、政策的な後押しがある。また、数十万人規模の配送ライダーが、燃料費削減や「充電待ちゼロ」を求め、スワップ対応の電動バイクに強い関心を示している。

VinFast の強みは、デュアルバッテリー方式により航続距離と即時スワップを両立させた点と、車両・バッテリー・交換ステーションを一体で提供するエコシステム戦略にある。すでに1,000拠点規模のスワップ網を構築しつつあり、他社を大きく引き離している状況。ベトナムは ASEAN の中でも最もEV二輪が浸透している市場であり、ここで確立されたモデルが将来インドネシアやフィリピンなどの巨大二輪市場へ波及する可能性が高まっている。**PSR**

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China Report

By Jack Hao, Senior Research Manager - China

Heli's product strategy focuses on localization adaptation and technological innovation.

Heli Breaks Ground for Factory in Thailand

Jack Hao

Heli Industrial Vehicles (Thailand) Co., Ltd.'s broke ground for its industrial vehicle assembly and lithium battery pack production factory at the Navaan Nong Khuang Industrial Park in Chonburi Province, Thailand Nov. 27, 2025.

Heli has established a strategic partnership with Siam Motors Parts Co., a local Thai enterprise, to jointly establish Heli Industrial Vehicles Co., Ltd. This move is meant to consolidate and expand Heli's leading position in the global market and build a global production and supply system.

Through this joint venture, the two parties will co-invest in building a new manufacturing base in Thailand, creating an integrated production and sales platform for industrial vehicle complete machines and lithium battery systems.

The project covers a land area of approximately 84,330 square meters, with a total construction area of 50,550 square meters, and a total investment of approximately RMB 425 million (approximately USD 60 million).

The complex includes production facilities, an office building, and supporting infrastructure, equipped with intelligent production lines. Upon full operation, the factory's annual production capacity will reach 10,000 forklifts and 10,000 lithium battery packs.

Source: *ccm-1* **Read The Article**

PSR Analysis: The product strategy focuses on localization adaptation and technological innovation. It involves developing rust-resistant and corrosion-proof forklift enclosures and battery protection systems tailored to the hot and rainy climate, launching 1-3 ton new energy forklifts to meet the lightweight demands of industries like electronics and textiles, and simultaneously developing low-cost lithium battery solutions to reduce customers' initial investment.

It also incorporates IoT technology for remote monitoring and fault alerts, introduces autonomous forklifts to cater to e-commerce and port automation scenarios, and obtains new energy certifications from various Southeast Asian countries.

The strategy adopts a dual-driven approach of direct sales and distribution, establishing regional sales centers in Thailand, Vietnam, and Indonesia to provide rapid response services. It leverages new energy subsidy policies in Southeast Asia (such as Thailand's EV 3.0 and Indonesia's tax incentives) to help customers reduce procurement costs, launches a "trade-in" program to phase out highly

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polluting diesel forklifts, and collaborates with local banks to offer low-interest loans and installment plans, innovating battery leasing services charged on a usage basis.

At the strategic level of competition, Heli will leverage differentiated products and a rapid response mechanism to compete with Japanese and Korean brands. Targeting Japanese brands such as Toyota and Mitsubishi in Southeast Asia, Heli will introduce competitive cost-effective new energy forklifts to capture the mid-range market, emphasizing the localization advantages of "Chinese technology + Thailand manufacturing" to reduce tariffs and logistics costs.

Simultaneously, to counter price wars, Heli will collaborate with local Southeast Asian enterprises (such as Siam Motors in Thailand) through technology transfer or joint venture models, adopting a flexible pricing strategy of "basic models + optional modules" to help penetrate the market.

The company also plans to establish a localized supply chain in Thailand (covering core components like batteries and motors) to reduce geopolitical risks and it plans to form long-term partnerships with raw material suppliers in Southeast Asia to ensure supply stability.

Additionally, it will use RMB-THB dual-currency settlement to hedge against exchange rate fluctuations and closely monitor trade policy changes across countries to dynamically adjust strategies.

The plan will be implemented in three phases: in the short term, focus on the Thai and Vietnamese markets to quickly establish reference customers and build a strong reputation; in the medium term, expand into Indonesia and Malaysia to refine the distribution network and service capabilities; and in the long term, strive to become the market leader in Southeast Asia and extend its influence to India and the Middle East, ultimately achieving the dual goals of rapidly capturing the market and accumulating global expansion experience. **PSR**

India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations

Aditya Kondejkar

Ford India Uses Recalibrated Strategy for Sustainable Success

Ford Motor Company's decision to re-enter the Indian market marks one of the most closely watched developments in the auto industry this year. After exiting mass-market operations in 2021, due to persistent losses and an increasingly competitive environment, Ford's return signals a significant strategic recalibration driven by changing market dynamics, India's rising

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Ford's earlier struggle stemmed largely from competing in high-volume, price-sensitive segments dominated by Maruti Suzuki, Hyundai, and later Tata and Kia. The new strategy avoids this path

manufacturing relevance, and the company's global EV transformation agenda.

Unlike the last decade—when Ford struggled with scale, cost structures, and a limited product pipeline—its new India plan is built around focused investments, platform sharing, premium positioning, and leveraging India as an export and engineering powerhouse.

Shifting from Mass-Market to Strategic Segments

Ford's earlier struggle stemmed largely from competing in high-volume, price-sensitive segments dominated by Maruti Suzuki, Hyundai, and later Tata and Kia. The new strategy avoids this path.

Instead of returning as a mass-market seller, Ford is expected to focus on niche and higher-margin segments, particularly premium SUVs and global EV models. Market chatter and leaked filings suggest Ford may relaunch its iconic Everest (Endeavour successor), followed by next-generation pickups and potentially C-segment SUVs—segments where brand equity remains strong and competition is more value-driven than price-driven.

This shift allows Ford to operate with better profitability per unit, avoid the thin margins of sub-compact categories, and position itself as a lifestyle and performance-oriented brand—similar to the strategy used by Toyota with the Fortuner and Hilux or by Jeep with its niche 4x4 portfolio.

Leveraging India as a Manufacturing and Export Hub

One of Ford's biggest advantages is its existing infrastructure. The Sanand plant transfer to Tata Motors freed the company from underutilized assets, but its Chennai facility remains intact—one of Ford's most efficient global manufacturing sites. With global EV and SUV demand rising, Ford can leverage India as a strategic base for:

- **Export-oriented production** of ICE SUVs
- **R&D and engineering** for global platforms
- **Software development** for next-generation EVs
- **Localized component sourcing** to reduce global costs

India's cost competitiveness, coupled with Ford's strong engineering talent pool in Chennai and Coimbatore, positions the country as a major contributor to Ford's global turnaround program led by CEO Jim Farley.

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EV Play: A Strategic Long-Term Bet

Ford's global vision is heavily EV-driven. India's EV penetration is rising in urban centers, and premium EVs (₹30 lakh+) are gaining traction. Models like the Mustang Mach-E, which is already being tested in India, can serve as brand builders and open the door for a larger EV portfolio once the market matures and EV costs normalize.

The company could also benefit from India's expanding charging ecosystem, FAME-like successor policies, and emerging battery localization initiatives.

Source: *Auto Economic Times* **Read The Article**

PSR Analysis: Ford's comeback is not about competing with mass-market OEMs. It is about competing smart, focusing on segments where it has proven capabilities and brand strength. The combination of niche SUVs, export-led manufacturing, a revitalized dealer-service network, and long-term EV bets gives Ford a far more sustainable entry path than before.

Challenges remain—Tata and Mahindra now dominate the Indian SUV space, and Toyota's grip on the premium ladder frame segment is formidable. However, Ford's global product strength, engineering competence, and renewed strategic clarity give it a genuine opportunity to carve out a profitable niche.

If Ford maintains pricing discipline, launches globally competitive products quickly, and aligns its India strategy with its global transformation, the company stands a strong chance of tasting long-awaited success in one of the world's most dynamic auto markets. **PSR**

Russia Report

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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