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Modular EV Conversion Market Forecasts to 2032 – Global Analysis By Vehicle Type (Passenger Cars, Commercial Vehicles, Two-Wheelers, Off-Road Vehicles, Vintage & Classic Cars and Agricultural Vehicles), Battery Type (Lithium-ion Batteries, Lead-acid Batteries, Nickel-metal Hydride Batteries and Solid-state Batteries), Conversion Type, Component Type, Power Output, Distribution Channel, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Modular EV Conversion Market is accounted for $850.00 million in 2025 and is expected to reach $3940.98 million by 2032 growing at a CAGR of 24.5% during the forecast period. The use of standardized, interchangeable modules to convert traditional internal combustion engine vehicles into electric vehicles is known as modular EV conversion. In order to simplify and lower the cost of conversion, this system usually consists of electric motors, control units, and modular battery packs that are simple to install, upgrade, or replace. Manufacturers and enthusiasts can enhance performance, increase vehicle range, and streamline maintenance by implementing a modular design without requiring significant alterations to the vehicle's original structure.

According to the International Energy Agency (IEA), global electric car sales reached nearly 14 million units in 2023, a 35% increase from 2022, driven by falling battery costs and scalable EV platforms that simplify production and integration.

Market Dynamics:

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Driver:

Increasing fuel prices

Due to the rising volatility of fuel prices worldwide, car owners are looking for more affordable alternatives to conventional gasoline and diesel. A viable and cost-effective solution is the modular EV conversion, which enables current automobiles to run on electricity, which is typically less expensive and more stable in price. Over time, owners of conventional vehicles can drastically lower operating costs, such as fuel and maintenance, by switching to electric vehicles. Additionally, this change lessens reliance on imported fossil fuels, ensuring both financial and energy stability. The need for modular EV conversion kits is anticipated to increase gradually as fuel prices rise for both individual customers and commercial fleet managers.

Restraint:

High initial outlay of funds

The comparatively high initial cost of modular EV conversion is one of the main obstacles. Although purchasing a new electric vehicle is more expensive than converting an existing vehicle, many consumers may still find the cost of modular kits, batteries, and installation to be prohibitive. The retail price of conversion kits frequently reflects the high manufacturing costs associated with advanced battery packs, electric motors, and control systems. Furthermore, this upfront cost may be a significant deterrent for individual users or small enterprises. Even though there are long-term operational savings, prospective adopters may be deterred by the initial financial outlay, especially in developing nations where financing options are scarce.

Opportunity:

Growing interest in eco-friendly transportation

Modular EV conversions have a big chance as a result of the global trend toward sustainability. Greener options are being adopted by businesses and consumers as a result of government pledges to cut carbon emissions and growing awareness of climate change. Modular EV solutions reduce environmental impact by converting existing vehicles to electric without requiring the production of brand-new automobiles. Moreover, there will probably be an increase in demand for modular EV conversions as

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the globe shifts to more stringent emission standards and carbon-neutral objectives. Companies and service providers can profit from this trend by providing scalable, reasonably priced, and ecologically friendly solutions for both private and business automobiles.

Threat:

Competition from new electric vehicles

The market for modular EV conversion is seriously threatened by the quick development of new electric vehicle models. Customers may choose to buy new cars rather than convert their current ones as automakers provide more reasonably priced, feature-rich, and high-performance EVs. Modular conversions might find it difficult to match the advanced warranties, integrated technologies, and optimized performance that new EVs frequently offer. Moreover, economies of scale improve the cost-competitiveness of mass-produced EVs. The demand for conversion kits may be constrained by this trend, particularly in areas where new EVs are widely accessible and government incentives encourage buying factory-built electric cars rather than modifying older models.

Covid-19 Impact:

The COVID-19 pandemic affected the market for modular EV conversion in a variety of ways. Production and distribution of conversion kits were momentarily hampered by worldwide lockdowns, supply chain interruptions, and manufacturing slowdowns, which caused delays in projects and raised expenses. Additionally, adoption was slowed by lower consumer spending and economic uncertainty, especially among individual car owners. On the other hand, as people looked for alternatives to fossil fuels and public transportation, the pandemic increased awareness of affordable and sustainable mobility options. Interest in electrification has increased since the pandemic, and governments are focusing on green recovery programs and incentives, which will eventually lead to more opportunities for modular EV conversion.

The passenger car segment is expected to be the largest during the forecast period

The passenger car segment is expected to account for the largest market share during the forecast period. The widespread use of electric vehicles, which is encouraged by government subsidies, battery technology breakthroughs, and rising environmental consciousness, is what is causing this dominance. To cut emissions and fuel expenses,

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consumers are increasingly switching to electric vehicles from their current internal combustion engine vehicles. In areas like North America and Europe, where strict emission standards and supportive policies encourage the shift to electric mobility, this trend is especially noticeable. Furthermore, this transition is made easier by the availability of modular EV conversion kits, which provide affordable and adaptable vehicle electrification options.

The battery packs segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the battery packs segment is predicted to witness the highest growth rate. The rising demand for long-range, energy-efficient electric vehicles (EVs) is the reason for this growth. Driving range, charging time, and overall efficiency are all directly impacted by battery packs, which are essential to EV performance. Safety and energy density have significantly increased as a result of battery technology advancements like the creation of solid-state and lithium-ion batteries. Moreover, the growth of the battery packs segment in the modular EV conversion market is also supported by the falling cost of battery production and encouraging government policies that encourage electric mobility.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share. China's strong domestic manufacturing ecosystem, significant government incentives, and aggressive push towards electric mobility are the main drivers of this dominance. With their strong automotive industries and cutting-edge technological infrastructure, nations like South Korea and Japan further strengthen the region's position. Rapid urbanization, pro-business legislation, and rising consumer demand for eco-friendly transportation options all help APAC maintain its dominant position in the global market.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR. Government incentives for EV adoption, growing investments in EV infrastructure, and growing consumer interest in EVs are the main drivers of the growth. With its cutting-edge technological capabilities, robust R&D in battery and powertrain solutions, and expanding startup ecosystem devoted to EV conversions, the U.S. leads the world. Additionally, fleet operators and individual consumers are being pushed

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toward modular EV conversions by increased environmental consciousness and more stringent emission regulations.

Key players in the market

Some of the key players in Modular EV Conversion Market include Toyota Motor Corporation, Ample, Lithium Urban Technologies, EV West Inc, Arc Motor Company, Zelectric Motors Inc, Kalyani Powertrain Ltd, Turntide Technologies Inc, E-Trio Automobiles, Altigreen Propulsion Labs Inc, Northway Motorsport Inc, Ather Energy Inc, Electric Classic Cars Inc, Ampcontrol Inc, GKN Automotive Inc and Lunaz Inc.

Key Developments:

In July 2025, Turntide Technologies, a global leader in electrification solutions, has been selected by Hitachi Rail to supply Gen 2 lithium iron phosphate (LFP) battery system for its Grand Central intercity battery train contract. Turntide Technologies will supply next-generation LFP batteries, which are designed to be smaller and more powerful than previous lithium-ion batteries.

In May 2025, Toyota Motor Corporation and Sinotruk signed a strategic cooperation agreement at Toyota's headquarters in Nagoya, Japan. Sinotruk and Toyota have long been actively advancing cooperation in the hydrogen energy industry, achieving encouraging progress and tangible results in the collaborative R&D and application of hydrogen fuel cell heavy trucks and powertrain systems.

In March 2025, Kalyani Powertrain has entered into a technology licensing agreement with Taiwan's Compal Electronics Inc for manufacturing of 'X86 platform' servers in India. The two parties have signed a Memorandum of Understanding (MoU) to develop server business using locally manufactured solutions in India.

Vehicle Types Covered:

- Passenger Cars
- Commercial Vehicles
- Two-Wheelers
- Off-Road Vehicles

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Vintage & Classic Cars

Agricultural Vehicles

Battery Types Covered:

Lithium-ion Batteries

Lead-acid Batteries

Nickel-metal Hydride Batteries

Solid-state Batteries

Conversion Types Covered:

Full Conversion Kits

Partial Conversion Kits

Modular Plug-and-Play Kits

Component Types Covered:

Battery Packs

Motor Controllers

Power Electronics

Charging Systems

Power Outputs Covered:

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Low Power Output (up to 50 kW)

Medium Power Output (51 kW to 150 kW)

High Power Output (above 150 kW)

Distribution Channels Covered:

OEMs (Original Equipment Manufacturers)

Aftermarket Suppliers

Online Platforms

Specialty Garages & Workshops

End Users Covered:

Automobile Manufacturers

Individual car Owners

Fleet Operators

Government & Military Sectors

Regions Covered:

North America

US

Canada

Mexico

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  - France
  - Spain
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  - New Zealand
  - South Korea
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Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

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Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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