

# Solar-Powered Vehicle Market to Surpass USD 7.33 Billion by 2032 Owing to Advancements in Battery Technology

*With rising concerns about climate change & push for greener alternatives, Solar-Powered Vehicles are emerging as a practical and environmentally sound option*

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## [Solar-Powered Vehicle Market](#)

The Solar-Powered Vehicle Market was valued at USD 1.27 billion in 2023 and is projected to reach USD 7.33 billion by 2032, growing at a robust CAGR of 21.5% over the forecast period from 2024 to 2032.

Solar-Powered Vehicle Market is Gaining Rapid Momentum through Sustainability Trends across the Globe.

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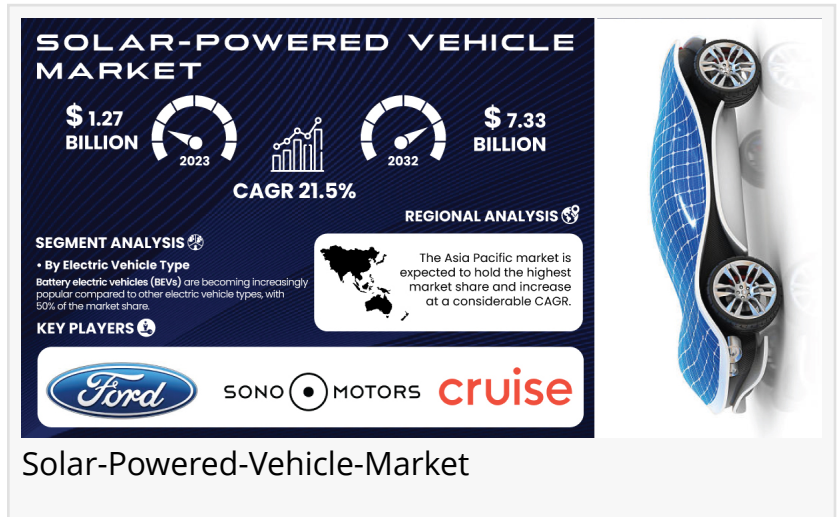
Solar-Powered Vehicle market is rising demand for eco-friendly transportation, advancements in solar panel & battery technologies, & government incentives for sustainable mobility solutions”

*SNS Insider*

Solar-Powered Vehicle Market will provide a much cleaner alternative to traditional fuel-powered cars. Governments are offering incentives in tax breaks and grants that contribute to the widening prospects of consumer adoption. The declining cost of solar panels has made it relatively more affordable.

Technological advancements regarding batteries have highlighted the previous fears of range and usability, making solar-powered vehicles practical for daily use. This

includes examples of new-generation batteries that allow those vehicles to travel up to 200 miles a day on a sunny day. Smart charging systems and energy storage solutions now increase energy efficiency while improving grid reliability. However, despite associated problems such as high



initial costs and infrastructural limitations, ongoing technological progress and state support are expected to fuel further market growth.

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Key Players Listed in Solar-Powered Vehicle Market Are:

- Ford Motor Company (US)
- Guangzhou Jcar Industrial Company Ltd (China)
- Sono Motors GmbH (Germany)
- Hanergy Holding Group (China)
- Mahindra & Mahindra (India)
- Cruise Car (US)
- The Solar Electric Vehicle Company (US)
- Venturi Eclectic (France)
- Kiira Motors Corporation (KMC) (Uganda)
- and Immortus (Australia)

The Rise In Sustainable Transportation Is Visible As Many Consumers Are Beginning To Realize That Eco-Friendly Vehicles Are The Future.

Due to increased concern regarding fuel cost escalations, environmental degradation, and government subsidies on such systems, the Solar-Powered Vehicle Market is gaining growth. On an annual basis, the market is expanding at an estimated 15%. Hybrid models combining conventional engines with solar technologies account for approximately 20% of the market, targeting consumers looking for a balance between innovation and familiarity. As technology advances and prices fall, the use of solar power in vehicles will become accessible to many, thereby maintaining the market's growth momentum.

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Solar-Powered Vehicle Market Segment Analysis

By Electric Vehicle Type:

The BEV segment dominated the Solar-Powered Vehicle Market in 2023 with 50% of the market share and holds the highest growth rate in forecast period 2024-2032. BEVs are powered entirely by electricity, meaning they don't produce emissions and have better energy efficiency compared to other varieties of vehicles. Advances in battery technology such as improving energy density and speeding up charging times have significantly improved the range and performance of BEVs, which consumers find more attractive. This has made BEVs the preferred choice in eco-friendly

transportation due to their alignment with global sustainability goals.

#### By Battery Type:

In 2023, Lithium-ion batteries segment held dominant position with 85% of the market share in the Solar-Powered Vehicle Market. Their high energy density enables the storage of more power within vehicles while remaining lightweight, while their rapid charging abilities ensure shorter downtime periods, making them ideal for both personal and commercial use. Their durability makes them appealing since they serve for a longer time compared to other battery types, thereby reducing the maintenance cost and widely spread across the industry.

#### Solar-Powered Vehicle Market Key Segmentation:

##### By Electric Vehicle Type:

- Battery electric vehicle
- Hybrid electric vehicle
- Plug-in hybrid electric vehicle

##### By Battery Type:

- Lithium-ion battery
- Lead-acid battery
- Lead-carbon battery
- Others

##### By Solar Panel:

- Monocrystalline
- Polycrystalline

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#### Regional Analysis:

The Asia Pacific region led the Solar-Powered Vehicle Market, accounting for 65% of global sales in 2023. The Republic of China led with a 25% growth in solar-powered vehicle sales through positive government policies and technological advancements. Japan, focusing on innovation, has increased the production of integrated solar panels into vehicles by 15%. In India, increasing demand for solar-powered electric rickshaws and small commercial vehicles have been recording a growth rate of 10% per annum.

The Europe region accounts for 25%, with very consistent growth since governments in the respective countries are initiating green policies. North America region is smaller, but still at 10% growth rate, driven by awareness and infrastructure development. Regional differences owe to policy support, availability of infrastructure, and consumer attitude toward sustainable transportation.

#### Recent Developments:

September 2024: Sono Motors has launched its new solar kits for trucks and vans. These products include next-generation high-voltage solar solutions specifically designed for semi-truck trailers and electric vehicles.

August 2024: Sono Group N.V., the Germany-based solar technology leader has made its new Solar Bus Kit available in Germany and Austria, partnering with Hofmeister & Meincke in the region to help extend its reach in sustainable transportation.

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