

# Driving on Sunshine: Trends in the Solar Vehicle Market Scope, Global Opportunities, Challenges and key Players by 2031

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/EINPresswire.com/ -- The solar vehicle market comprises vehicles that use solar panels to power electric motors or charge batteries to supplement the batteries' energy capacity. These vehicles offer reduced fuel costs and reduced emissions.



## Market Dynamics:

The rising fuel prices are estimated to drive the growth of the solar vehicle market during the forecast period. According to the U.S. Energy Information Administration, the average retail price for regular gasoline in the U.S. was \$4.60 per gallon in July 2022, a significant increase from \$3.00 per gallon at the same time last year. High fuel prices increase the operating costs of conventional vehicles and make solar vehicles more attractive to consumers. Furthermore, supportive government policies promoting solar-powered electric vehicles are also fueling the market growth. Various governments around the world provide purchase subsidies for electric vehicles. This is further encouraging the adoption of solar vehicles.

The global solar vehicle market size is estimated to be valued at US\$ 172.62 billion in 2023 and is expected to reach US\$ 789.81 billion by 2030, grow at a compound annual growth rate (CAGR) of 24.3% from 2023 to 2030.

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## Major Market Drivers for the Solar Vehicle Market

Rising fuel prices and global efforts to reduce dependence on fossil fuels are driving adoption of solar vehicles

With crude oil prices constantly fluctuating and rising over time, the cost of petroleum-based transportation fuels has been steadily increasing. This has motivated consumers and fleet operators to seek more sustainable and cheaper transportation alternatives like solar vehicles that do not rely on gasoline and diesel. Additionally, many governments around the world are implementing policies and incentives to curb carbon emissions from the transportation sector and lessen dependence on imported fossil fuels. Investing in the development of solar vehicles aligns well with the eco-friendly initiatives of moving to renewable energy sources for mobility.

#### Key Company Profiles:

Tesla, Sono Motors, Lightyear, Aptera Motors, Squad Mobility, EVX Pty Ltd, ElectraMeccanica Vehicles Corp., Hyundai Motor Group, Toyota Motor Corporation, Audi, Ford, Volkswagen, Mahindra & Mahindra, Nissan, General Motors, BYD, Renault, Honda, Tata Motors, BMW

#### Key Region/Countries are Classified as Follows:

- » North America (U.S., Canada, Mexico)
- » Europe (Germany, U.K., France, Italy, Russia, Spain, Rest of Europe)
- » Asia-Pacific (China, India, Japan, Singapore, Australia, New Zealand, Rest of APAC)
- » South America (Brazil, Argentina, Rest of SA)
- » Middle East & Africa (Turkey, Saudi Arabia, Iran, UAE, Africa, Rest of MEA)

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#### Major Market Restrain for the Solar Vehicle Market

High upfront costs pose significant barrier to wide adoption of solar vehicles

While solar vehicles offer long term savings on fuel expenses, their initial purchase price tends to be much higher than comparable gasoline-powered cars mainly due to the additional costs associated with advanced battery technology and solar panels. For many consumers and fleet owners, the high sticker price deters them from switching to solar vehicles despite their green attributes. Subsidies and incentives have helped lower costs to some extent but have not been able to bridge the large price gap completely. Unless production volumes increase substantially to realize economies of scale, the high upfront capital requirement will continue restricting mass market penetration of solar vehicles.

#### Major Market Opportunity for the Solar Vehicle Market

Growing commercial fleet electrification presents lucrative market opportunity

Many companies are replacing their gasoline/diesel vehicles used for delivery, service, and utility

operations with electric models to reduce operational costs and meet sustainability targets. Transitioning commercial fleets to solar electric vehicles can provide even greater savings as they negate any fuel expenses completely. Fleet operators are also interested in the lower maintenance and emissions benefits of electric commercial vehicles. As technologies advance, range and payload capabilities of solar transport vehicles will improve, making them attractive propositions for last mile deliveries, airport services, utility works etc. Catering to growing commercial fleet electrification presents a multi-billion dollar addressable market opportunity for solar vehicle manufacturers.

## Major Market Trend for the Solar Vehicle Market

Technological advancements in solar panels and batteries driving higher vehicle range and performance

Continuous R&D is yielding significant progress in solar cell efficiencies, size/weight reductions of panels as well as energy density improvements in lithium-ion batteries. Newer designs incorporate solar panels directly into the vehicle body and roof for maximum solar capture. These technological upgrades are extending the per-charge driving range of solar vehicles, allowing them to function as practical daily use vehicles rather than just niche models. Greater distances per charge also alleviate range anxiety concerns for drivers. Automakers are undertaking extensive testing and integrating the latest solar and battery innovations to launch high performing solar electric vehicles that can rival gasoline cars on performance while being more sustainable.

Some of the Major Points of TOC cover:

### Chapter 1: Techniques & Scope

- 1.1 Definition and forecast parameters
- 1.2 Methodology and forecast parameters
- 1.3 Information Sources

### Chapter 2: Latest Trends Summary

- 2.1 Regional trends
- 2.2 Product trends
- 2.3 End-use trends
- 2.4 Business trends

### Chapter 3: Industry Insights

- 3.1 Industry fragmentation
- 3.2 Industry landscape

3.3 Vendor matrix

3.4 Technological and Innovative Landscape

Chapter 4: Virtual Charter Schools Market , By Region

Chapter 5: Company Profiles

5.1 Overview of the Company

5.2 Economic components

5.3 Product Overview

5.4 Analysis of Strengths and Weaknesses

5.5 Methodical Outlook

Chapter 6: Assumptions and Acronyms

Chapter 7: Research Methodology

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