

# **Global Solar Vehicle Market Size study & Forecast, by Vehicle Type (Passenger Cars, Commercial Vehicles), by Electric Vehicle Type (Battery Electric Vehicle, Hybrid Electric Vehicle), by Battery Type (Lithium Ion, Lead Acid, Other Battery Types), by Solar Panel Type (Mono-crystalline, Poly-crystalline) and Regional Analysis, 2023-2030**

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## **Abstracts**

Global Solar Vehicle Market is valued at approximately USD 285.44 million in 2022 and is anticipated to grow with a healthy growth rate of more than 18% over the forecast period 2023-2030. A solar vehicle is an electric vehicle (EV) that is powered primarily or entirely by energy derived from the sun through solar panels. These vehicles use photovoltaic cells to convert sunlight directly into electricity, which is then stored in batteries or used to power the vehicle's electric motor. Solar vehicles are designed with a large surface area covered in solar panels, typically located on the roof, hood, or other areas of the vehicle where maximum sunlight exposure is achieved. The solar panels capture sunlight and convert it into electrical energy, which either be used immediately to power the vehicle or stored in a battery for later use. The Solar Vehicle market is expanding because of factors such as stringent vehicle emission norms and regulations and rising government support for the development of eco-friendly vehicles.

Many nations are building environmentally friendly settings for the automotive industry to develop frameworks for emissions that are more effective. For brand-new passenger automobiles and commercial vehicles, the EU established new standards for carbon dioxide emissions. The EU passed the 2020 package of regulations to make sure it would reach its 2020 energy and climate goals. The three main goals of the package are a 20% reduction in greenhouse gas emissions (from 1990 levels). The agreed-upon

goals are to cut new passenger car CO<sub>2</sub> emissions on average by 20% by 2025 and by 37.5% by 2030, both in comparison to the base year of 2021. Similarly, The US Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) cut the GHG emissions and Corporate Average Fuel Economy (cafe?) requirements for vehicles produced in the MY 2021–2026 with the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule [4754], which was finalized in March 2020. The 2020 regulation tightens CAFE and CO<sub>2</sub> emission regulations by 1.5% annually through the model year 2026, in contrast to the CO<sub>2</sub> requirements imposed in 2012, which aimed for rises to around 5% each year. Thus, stringent vehicle emission norms and regulations are driving the growth of the Solar Vehicle Market. In addition, advancement in solar panel and battery storage technology and increasing investment in the development of energy-efficient vehicles is creating new opportunities for the market. However, less operational efficiency of solar vehicles coupled with high cost and lack of standardization stifles market growth throughout the forecast period of 2023-2030.

The key regions considered for the Global Solar Vehicle Market study includes Asia Pacific, North America, Europe, Latin America, and Middle East & Africa. Asia Pacific dominated the market in 2022 owing to factors such as rising concerns about air pollution, the requirement to lower greenhouse gas emissions, and government programs that support the use of solar and electric vehicles. Whereas, North America is projected to have significant growth in the market owing to factors such as rising technological advancement, and rising investment for research and development activities in the region.

Major market player included in this report are:

Sono Motors GmbH

Lightyear

Venturi Automobiles

Nissan Motor Co. Ltd.

Mahindra & Mahindra Limited

Toyota Motor Corporation

Ford Motor Company

Volkswagen AG

Mercedes-Benz Group AG

Tesla, Inc

#### Recent Developments in the Market:

In January 2023, The European Climate, Infrastructure, and Environment Executive Agency (CINEA) granted funding of USD 1.61 million to Sono Group N.V., a major leader in solar mobility solutions, to advance solar technology.

In June 2022, Bridgestone and Lightyear announced their partnership to develop, the first long-distance solar electric-powered vehicle. Bridgestone and Lightyear's cooperation builds on their prior work for the Bridgestone World Solar Challenge and is a clear result of their shared dedication to sustainability.

#### Global Solar Vehicle Market Report Scope:

Historical Data – 2020 - 2021

Base Year for Estimation – 2022

Forecast period - 2023-2030

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Segments Covered – Vehicle Type, Electric Vehicle Type, Battery Type, Solar Panel Type, Region

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent up to 8 analyst's working hours) with purchase. Addition or alteration to country, regional &

## segment scope\*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values to the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within countries involved in the study.

The report also caters detailed information about the crucial aspects such as driving factors & challenges which will define the future growth of the market. Additionally, it also incorporates potential opportunities in micro markets for stakeholders to invest along with the detailed analysis of competitive landscape and product offerings of key players. The detailed segments and sub-segment of the market are explained below:

### By Vehicle Type:

Passenger Cars

Commercial Vehicles

### By Electric Vehicle Type:

Battery Electric Vehicle

Hybrid Electric Vehicle

### By Battery Type:

Lithium Ion

Lead Acid

Other Battery Types

### By Solar Panel Type:

Mono-crystalline

Poly-crystalline

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea

RoAPAC

Latin America

Brazil

Mexico

Middle East & Africa

Saudi Arabia

South Africa

Rest of Middle East & Africa

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