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Global Hybrid & Electric Vehicles

May 2022



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Table of Contents

| | |
|---|-----------|
| 1. Highlights | 3 |
| 2. Global Overview & Forecasts | 5 |
| COVID-19 Impact | 5 |
| Demand by Powertrain | 7 |
| Full Hybrid | 9 |
| Plug-in Hybrid | 10 |
| Electric | 11 |
| Demand by Vehicle Type | 13 |
| Light Vehicles | 14 |
| Medium- & Heavy-Duty Vehicles | 15 |
| 3. Regional Segmentation & Forecasts | 17 |
| Regional Production Overview | 17 |
| Regional Demand Overview | 19 |
| North America | 21 |
| Western Europe | 23 |
| Asia/Pacific | 25 |
| Other Regions | 27 |
| Central & South America | 28 |
| Eastern Europe | 28 |
| Africa/Mideast | 28 |
| 4. Industry Structure | 30 |
| Industry Characteristics | 30 |
| Electric Vehicle Market Share | 31 |
| Tesla | 32 |
| SAIC | 32 |
| Volkswagen | 32 |
| 5. About This Report | 34 |
| Scope | 34 |
| Sources | 34 |
| Industry Codes | 35 |
| Freedonia Methodology | 35 |
| Resources | 37 |

List of Tables & Figures

| | |
|--|----|
| Figure 1 Global Hybrid & Electric Vehicle Market Outlook, 2021 – 2026 | 4 |
| Figure 2 Global Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (mil units) | 7 |
| Table 1 Global Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (000 units) | 7 |
| Figure 3 Global Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (%) | 9 |
| Figure 4 Global Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (mil units) | 13 |
| Table 2 Global Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (000 units) | 13 |
| Figure 5 Global Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (%) | 16 |
| Figure 6 Global Hybrid & Electric Vehicle Production by Region, 2011 – 2026 (mil units) | 17 |
| Table 3 Global Hybrid & Electric Vehicle Production by Region, 2011 – 2026 (000 units) | 17 |
| Figure 7 Global Hybrid & Electric Vehicle Production by Region, 2011 – 2026 (%) | 18 |
| Figure 8 Global Hybrid & Electric Vehicle Demand by Region, 2011 – 2026 (mil units) | 19 |
| Table 4 Global Hybrid & Electric Vehicle Demand by Region, 2011 – 2026 (000 units) | 19 |
| Figure 9 Global Hybrid & Electric Vehicle Demand by Region, 2011 – 2026 (%) | 20 |
| Figure 10 North America: Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (000 units) | 21 |
| Figure 11 North America: Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (000 units) | 21 |
| Table 5 NA: Hybrid & Electric Vehicle Demand by Powertrain & Vehicle Type, 2011 – 2026 (000 units) | 22 |
| Figure 12 Western Europe: Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (mil units) | 23 |
| Figure 13 Western Europe: Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (mil units) | 23 |
| Table 6 WE: Hybrid & Electric Vehicle Demand by Powertrain & Vehicle Type, 2011 – 2026 (000 units) | 24 |
| Figure 14 Asia/Pacific: Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (mil units) | 25 |
| Figure 15 Asia/Pacific: Hybrid & Electric Vehicle Demand by Vehicle Type, 2011 – 2026 (mil units) | 25 |
| Table 7 Asia/Pacific: Hybrid & Electric Vehicle Demand by Powertrain & Vehicle Type, 2011 – 2026 (000 units) | 26 |
| Figure 16 Other Regions: Hybrid & Electric Vehicle Demand by Region, 2011 – 2026 (000 units) | 27 |
| Figure 17 Other Regions: Hybrid & Electric Vehicle Demand by Powertrain, 2011 – 2026 (000 units) | 27 |
| Table 8 Other Regions: Hybrid & Electric Vehicle Demand by Region & Powertrain, 2011 – 2026 (000 units) | 29 |
| Figure 18 Global Electric Vehicle Market Share by Company, 2021 (%) | 31 |
| Table 9 Leading Suppliers to the Global Electric Vehicle Market | 32 |
| Table 10 NAICS & SIC Codes Related to Hybrid & Electric Vehicles | 35 |
| Table 11 HS Codes Related to Hybrid & Electric Vehicles | 35 |
| Table 12 NACE Codes Related to Hybrid & Electric Vehicles | 35 |

About This Report

Scope

This report forecasts to 2026 global demand for hybrid and electric vehicles by powertrain, vehicle type, and major world region in units. Powertrain segments include:

- full hybrid
- plug-in hybrid
- electric (including battery- and fuel cell-powered vehicles)

Reported vehicle type segments encompass:

- light vehicles
- medium- and heavy-duty vehicles

Major world regions include North America, Western Europe, Asia/Pacific, and all other regions.

To illustrate historical trends, world, powertrain, vehicle type, and regional demand (including powertrain and vehicle type segments) are provided for 2011, 2016, and 2021. Finally, global production is segmented by major world region and provided for 2011, 2016, 2021, and 2026.

Excluded from the scope of this report are micro hybrids, in which vehicle propulsion is generated from an internal combustion engine, but some technological features found in hybrid vehicles – specifically start-stop systems – are used to improve fuel economy. However, because these vehicles do not use an electric motor for propulsion, they fall outside the scope of this report. Electric motorcycles and e-bikes are also excluded from this report.

Other various topics, including profiles of pertinent leading companies, are covered in this report. A full outline of report items by page is available in the Table of Contents.

Sources

Global Hybrid & Electric Vehicles (FW85023) is based on [a comprehensive industry study](#) published by The Freedonia Group. Reported findings represent the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources, such as:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- intergovernmental and non-governmental organizations

- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

Industry Codes

Table 10 | NAICS & SIC Codes Related to Hybrid & Electric Vehicles

| NAICS/SCIAN 2017 North American Industry Classification System | | SIC Standard Industrial Classification | |
|---|---|---|---|
| 336111 | Automobile manufacturing | 3711 | Motor vehicles and passenger car bodies |
| 336112 | Light truck and utility vehicle manufacturing | | |
| 336120 | Heavy duty truck manufacturing | | |

Source: US Census Bureau

Table 11 | HS Codes Related to Hybrid & Electric Vehicles

| HS Code | Definition |
|---------|---|
| 870340 | Vehicles; with both spark-ignition internal combustion reciprocating piston engine and electric motor for propulsion, incapable of being charged by plugging to external source of electric power |
| 870350 | Vehicles; with both compression-ignition internal combustion piston engine (diesel or semi-diesel) and electric motor for propulsion, incapable of being charged by plugging to external source of electric power |
| 870360 | Vehicles; with both spark-ignition internal combustion reciprocating piston engine and electric motor for propulsion, capable of being charged by plugging to external source of electric power |
| 870370 | Vehicles; with both compression-ignition internal combustion piston engine (diesel or semi-diesel) and electric motor for propulsion, capable of being charged by plugging to external source of electric power |
| 870380 | Vehicles; with only electric motor for propulsion |

Source: United Nations Statistics Division

Table 12 | NACE Codes Related to Hybrid & Electric Vehicles

| NACE Code | Definition |
|-----------|-------------------------------|
| 29.10 | Manufacture of motor vehicles |

Source: European Commission

Freedonia Methodology

The Freedonia Group, a subsidiary of MarketResearch.com, has been in business for more than 30 years and in that time has developed a comprehensive approach to data analysis that takes into account the variety of industries covered and the evolving needs of our customers.

Every industry presents different challenges in market sizing and forecasting, and this requires flexibility in methodology and approach. Freedonia methodology integrates a variety of quantitative and qualitative techniques to present the best overall picture of a market's current position as well as its future outlook: When published data are available, we make sure they are correct and representative of reality. We understand that published data often have flaws either in scope or quality, and adjustments are made accordingly. Where no data are available, we use various methodologies to develop market sizing (both top-down and bottom-up) and then triangulate those results to come up with the most accurate data series possible. Regardless of approach, we also talk to industry participants to verify both historical perspective and future growth opportunities.

Methods used in the preparation of Freedonia market research include, but are not limited to, the following activities: comprehensive data mining and evaluation, primary research, consensus forecasting and analysis, ratio analysis using key indicators, regression analysis, end use growth indices and intensity factors, purchase power parity adjustments for global data, consumer and end user surveys, market share and corporate sales analysis, product lifespan analysis, product or market life cycle analysis, graphical data modeling, long-term historical trend analysis, bottom-up and top-down demand modeling, and comparative market size ranking.

Freedonia quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or r^2 . The most stable data series relative to the trend carries an r^2 value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

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Resources

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Freedonia Industry Studies

Global Automotive Coatings

Global Batteries

Global Buses

Global Engine Oils

Global Flat Glass

Global Lubricants

Global Motor Vehicle Outlook 2020

Global Motorcycle Lubricants

Global Motorcycles

Global Off-Road Equipment Technology 2022

Global Thermoplastic Elastomers: Motor Vehicle Market

Global Tires

Freedonia Focus Reports

Global Light Vehicles

Motor Vehicle Biofuels: United States

Motor Vehicle Leasing: United States

Motor Vehicles: United States

Power Transmission Components: United States

Semiconductors: United States

Freedonia Custom Research

Trade Publications

CleanTechnica

Green Car Congress

Green Car Reports

HybridCars.com

WardsAuto

Agencies & Associations

Anfavea Brazil

American Public Transportation Association

Austrian Ministry of Transport

European Alternative Fuels Observatory

European Automobile Manufacturers Association

European Commission
Eurostat
International Council on Clean Transportation
International Energy Agency
International Monetary Fund
National Highway Traffic Safety Administration
Organisation for Economic Co-operation and Development
United Nations Comtrade
United States Census Bureau
United States Department of Energy
United States Department of Transportation
United States Environmental Protection Agency
United States International Trade Commission
World Bank