

# E-Mobility Market

An Insight into the Growing Market of Electric Vehicles



**SSR-INR-2101**

December 2021



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# Electric Mobility Worldwide

Spurred by falling lithium-ion battery pack costs, electric vehicle sales have increased tremendously over the course of the past decade. Worldwide electric car sales are estimated to have topped three million units in 2020. Tesla is currently the world's leading maker of electric vehicles.

## Electric vehicles gain market share

While the electric vehicle (EV) industry has a long way to go to reach the same sales levels as the business for conventional automobiles, the new sales record would mean that the market share of electric vehicles increased from roughly 2.5 percent in 2019 to about 4.4 percent in 2020. This figure is projected to increase rapidly. It is expected that eight out of 10 automobiles sold worldwide will be powered by electricity by 2050.

## Environmental framework

Government agencies, including the Environmental Protection Agency (EPA) in the United States, are increasingly beginning to introduce limits on nitrogen oxide and carbon dioxide emissions. Automakers are expected to be penalized if they fail to meet these limits. In spite of the new regulations, standards, and goals in effect, opponents are right to criticize that the sources of electricity employed to power electric cars, as well as how materials (including cobalt, nickel, and lithium) used in car batteries are generally not taken into consideration when it comes to calculating a vehicle's carbon footprint. Automakers around the world will have to focus on clean fuel sources and sustainable supply chains. In 2015, Volkswagen experienced how disrespecting emerging environmental regulations may hurt brand image. The company started delivering its electric ID.3 model in 2020.

Global Plug-in Electric Vehicle Sales	<b>3 Million Units</b>
---------------------------------------	------------------------

Size of Global Electric Vehicle Market	<b>725 Billion USD</b>
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**TESLA**

Leading Electric Vehicle Brand based on Sales

Best Selling Plug-in Electric Car - Model 3

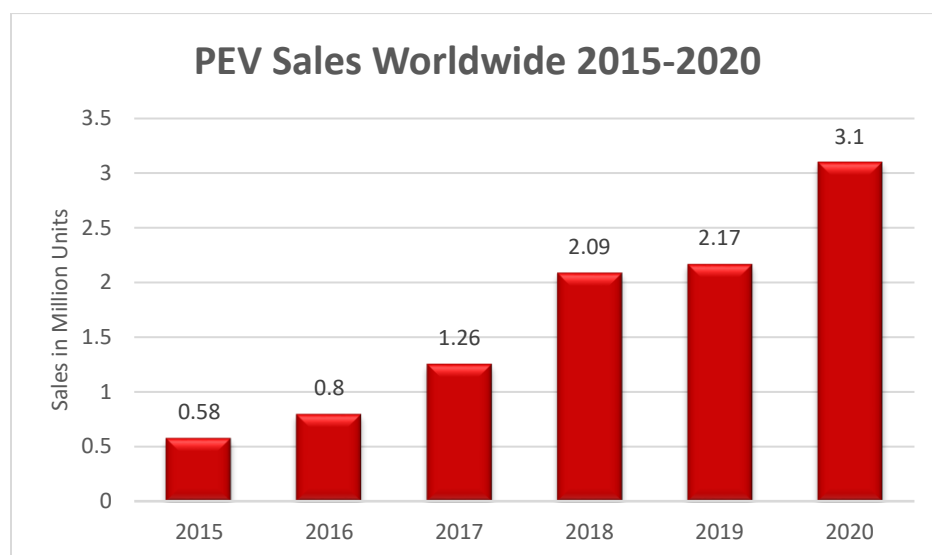
Tesla's Revenue 2020 – 31.5bn USD

Tesla's Charging Stations in U.S. - 1076

## Overview

### Estimated plug-in electric light vehicle sales worldwide from 2015 to 2020

It is estimated that 2020 saw plug-in electric light vehicle (PEV) sales of around three million units. After having emerged as one of the leading markets for plug-in light vehicle sales, China has entered a phase of slowdown. Meanwhile, electric vehicle sales in Europe's five largest markets surged in 2020. Germany could become the largest market for plug-in electric vehicles due to a combination of regulations and incentive changes.



#### EUROPE

*The leading region in terms of Plug-in Electric Vehicle Sales growth in 2020*

# 137%

#### Sources

IEA; EV-Volumes.com

#### Survey Name

Global electric car sales by key markets, 2010-2020e

#### Source link

[iea.org](http://iea.org)

#### Survey by

IEA; EV-Volumes.com

#### Published by

IEA

#### Release date

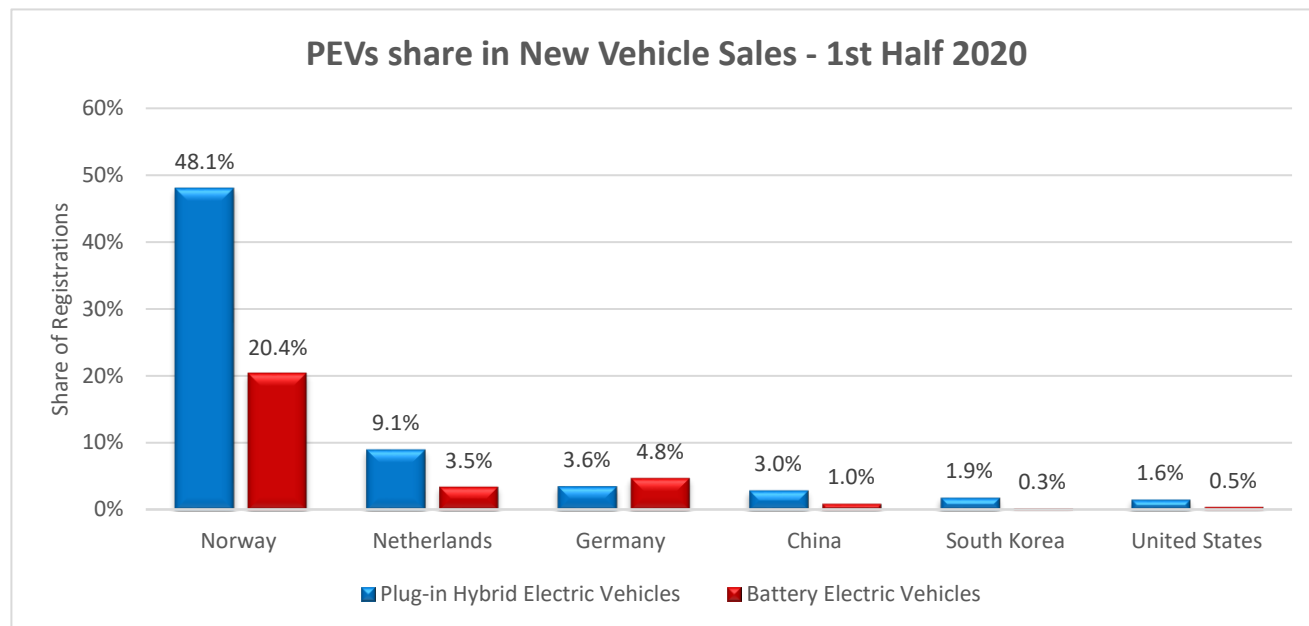
January 2021

### Knowing your BEVs from your PHEVs

A BEV has no internal combustion engine or fuel tank; it runs entirely on electricity. The rechargeable battery can be powered at home, work, or at a charging station – Norway had more than 12,000 publicly accessible electric vehicle charges in 2018. A PHEV also has a rechargeable battery that is capable of powering the car on its own and can be charged by plugging into a power source. However, the range of a PHEV is usually much smaller (usually between 15 and 50 miles). Hence, should the electric charge deplete, the vehicle also has an internal combustion engine that will start operating.

## Electric vehicle market share - selected markets H1 2020

In Norway, almost half of all new vehicles registered in the first half of 2020 were all-electric vehicles. The Tesla Model 3 electric vehicle was the best-selling car model in 2019: Norwegian car owners purchased some 15,700 Model 3 cars in 2019.



### Sources

PwC; Various sources

### Survey Name

E-Mobility Sales Review Q3 2020

### Source link

[E-Mobility Sales Review Q3 2020, appendix](#)

### Survey by

Various sources (PwC; Autoactu; KBA; ANFIA; ANFAC; SMMT; BOVAG)

### Published by

PwC

### Release date

July 2020

## Taking the wheel

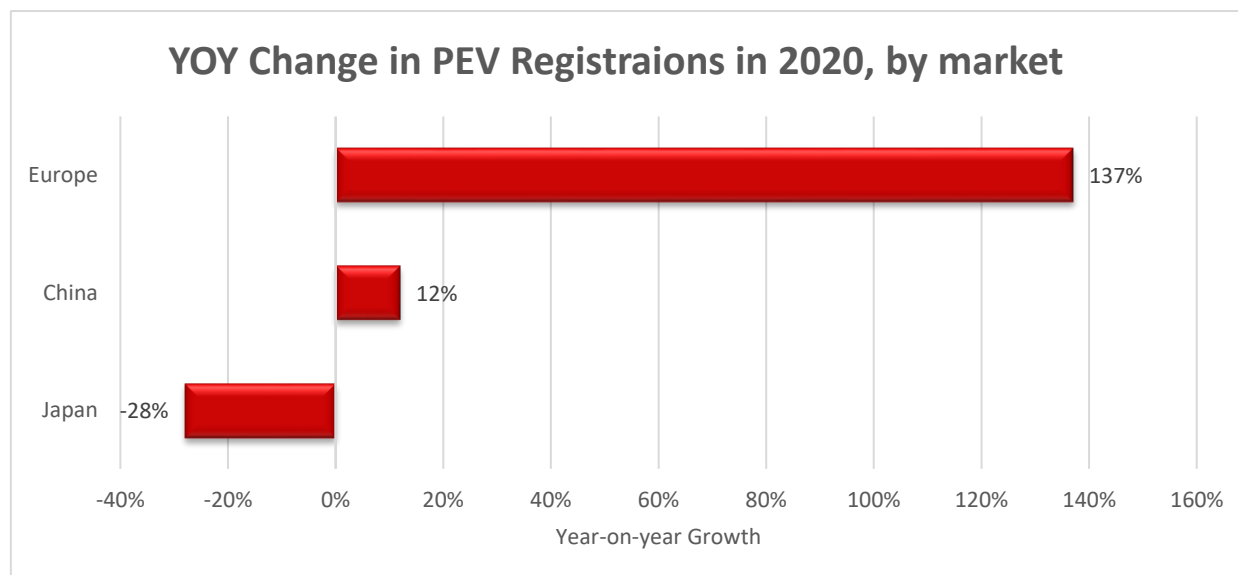
Norway is at the center of the electric vehicle movement; this is despite having an overall population of around 5.3 million. Notwithstanding the country's high penetration rate of electric vehicles, a car parc of around 2.6 million suggests that the level of electric car sales is lower than in some of the larger markets, including the United States and China. An estimated 250,000 battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) were in use across Norway in 2018.

### "What is the minimum distance you want to drive on one battery, before the electric car becomes attractive?"

As of 2016, roughly 20 percent of the respondents in a survey in Netherlands said the electric car becomes attractive for them when it has a minimum radius of action of 250 kilometer on one battery.

## Change in PEV registrations worldwide by market 2020

European battery electric vehicle (BEV) and hybrid electric vehicle (PHEV) registrations increased by a staggering 137 percent year-on-year in 2020. Global plug-in electric vehicle (PEV) sales exceeded three million units in 2020.



### Sources

EV-Volumes.com

### Source link

[ev-volumes.com](https://ev-volumes.com)

### Survey & Published by

EV-Volumes.com

### Release date

2021

## Number of electric vehicles in use by type 2016-2019

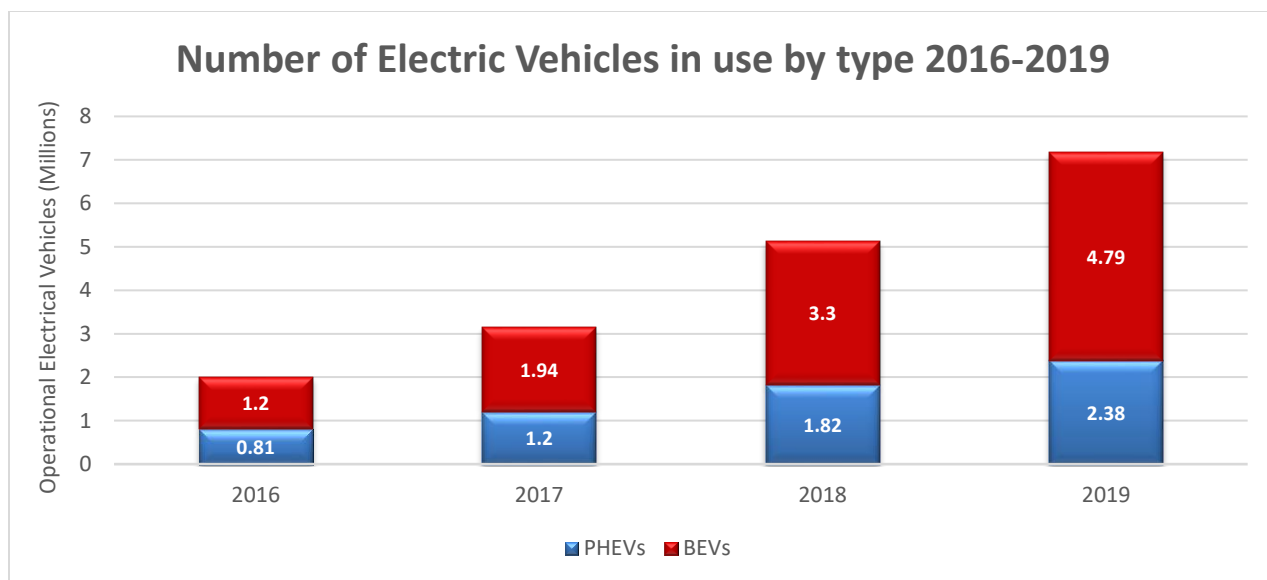
There were about 4.8 million battery electric vehicles in operation worldwide in 2019. That year, all-electric vehicles accounted for about 67 percent of plug-in electric vehicles.

### Electric vehicle market growth

Globally, electric vehicle sales soared to more than three million units in 2020. While conventional vehicle sales slumped amid the outbreak of the coronavirus pandemic, the market share of electric vehicles increased to between four and five percent in 2020. China was the market with the largest battery electric vehicle fleet in 2019 with almost 54 percent of the world's battery electric vehicle population.

### Manufacturers leading the Chinese market

Leading the Chinese battery electric vehicle market in 2020 was domestic manufacturer BYD. The company has been acknowledged for its innovation in battery technology. BYD also began manufacturing vehicles in foreign countries in 2015. State-owned SAIC Motor is also one of the leading domestic manufacturers of vehicles. As the world's largest passenger car market, international manufacturers are also attracted to China. They operate in joint ventures with Chinese companies. Volkswagen and SAIC have one of the oldest partnerships in the automotive industry. GM has a joint venture with SAIC.



#### Sources

IEA

#### Source link

[iea.org](http://iea.org)

#### Survey & Published by

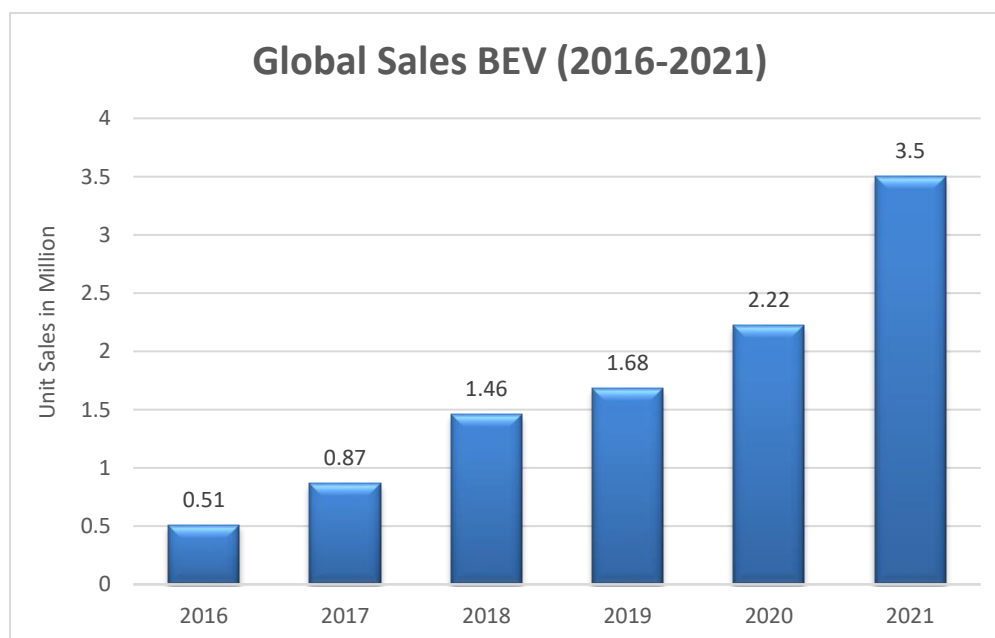
IEA

#### Release date

October 2020

### Battery-electric vehicle sales worldwide from 2016 to 2021

It is expected that battery-electric vehicles will account for 66 percent of electric vehicle sales worldwide in 2021. Sales of battery electric vehicles are tipped to reach around 3.5 million units in 2021, while 2020 saw sales of between 2.2 and 2.3 million battery-electric vehicles.



#### Sources

Frost & Sullivan

#### Survey by

Frost & Sullivan

#### Published by

Frost & Sullivan

#### Survey Name

Global Electric Vehicle Market Outlook, 2019

#### Source link

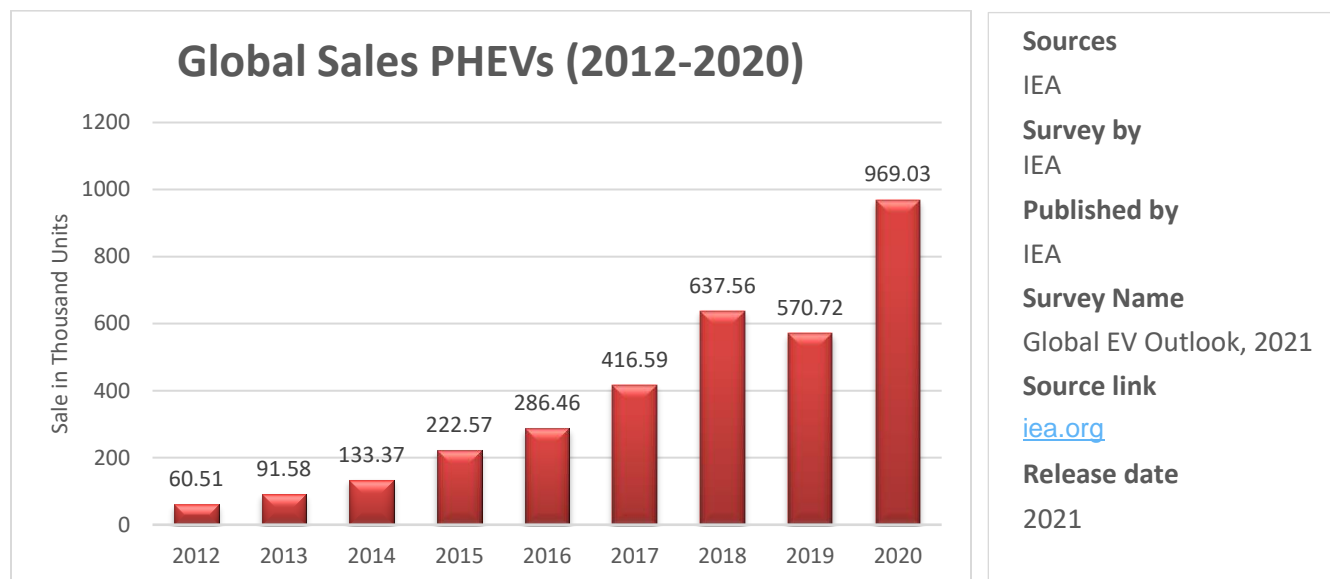
[frost.com](http://frost.com)

#### Release date

2021

## Plug-in hybrid electric vehicle sales worldwide 2012-2020

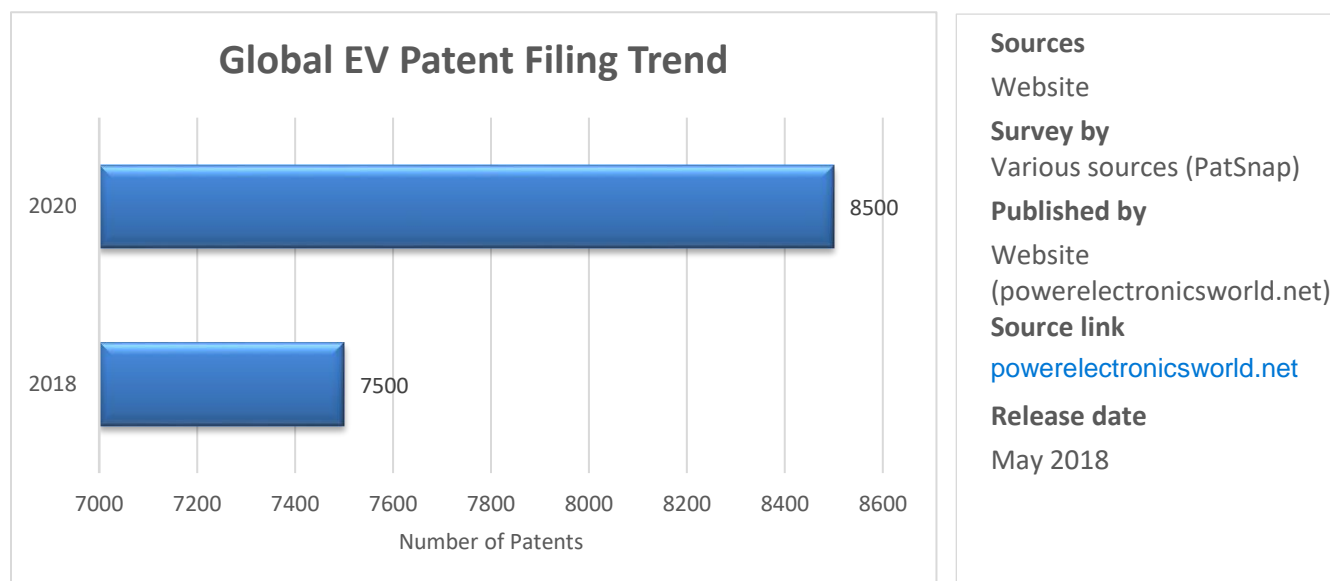
About 970,000 new plug-in hybrid electric cars sales were sold in 2020. Plug-in hybrid electric vehicle (PHEV) sales accounted for almost one quarter of electric vehicle sales in 2020. Meanwhile, battery electric vehicles accounted for the plurality of sales in 2020.



## Technology

### Worldwide electric vehicle investments: patent filings 2018 & 2020

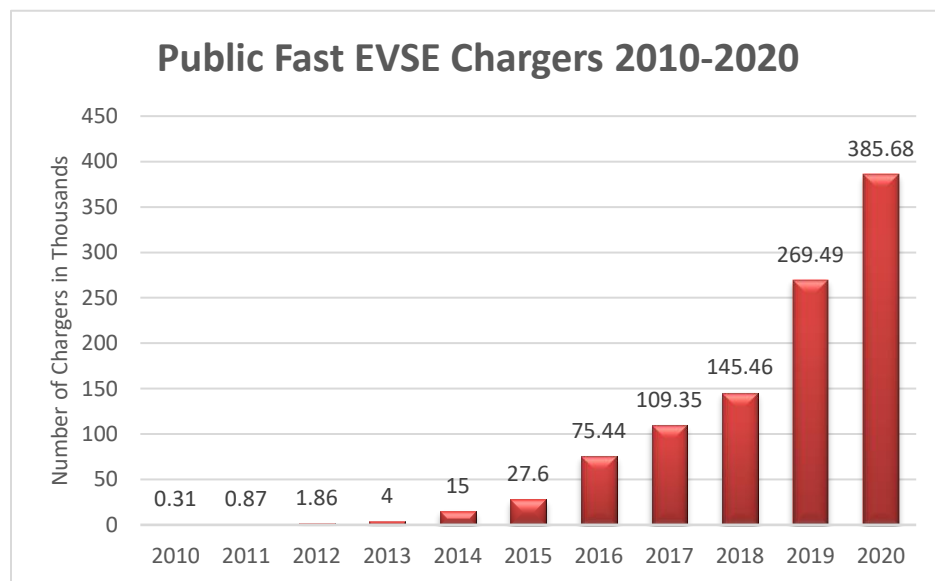
This graph illustrates the projected number of electric vehicle-related patents filed worldwide between 2018 and 2020. It is predicted that 2020 will see around 8,500 patent filings in the field of electric vehicle technology.





## Number of publicly available fast electric vehicle chargers (EVSE) worldwide from 2010 to 2020

In 2020, there were almost 386,000 publicly available fast electric vehicle chargers (EVSE) worldwide, more than 80 percent of which were found in China. The growth of publicly available high-speed EVSE chargers took off between 2016 and 2017.



### Sources

IEA

### Survey by

IEA

### Survey Name

Global EV Data Explorer, EV chargers

### Published by

IEA

### Source link

[iea.org](http://iea.org)

### Release date

2021

## Public EVSE chargers by country and type 2020

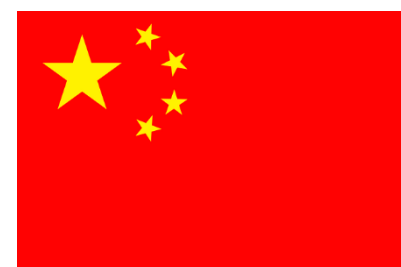
China had more than 800,000 publicly accessible electric vehicle chargers in 2020, accounting for over 60 percent of such chargers in the world. The United States was ranked second: 82,263 slow chargers and around 16,700 fast chargers were installed across the nation.

### China shaping the electric vehicle market

There were an estimated 4.5 million electric cars in use across China in 2020, and so it is no surprise to learn that the availability of electric vehicle supply equipment (EVSE) is far greater there than anywhere else worldwide. The country has focused investment on charging infrastructure, particularly fast-charging facilities, and this has led to China having the highest number of publicly available fast chargers worldwide. China is also among the countries with the largest land surface area worldwide.

### Trends in the Chinese market

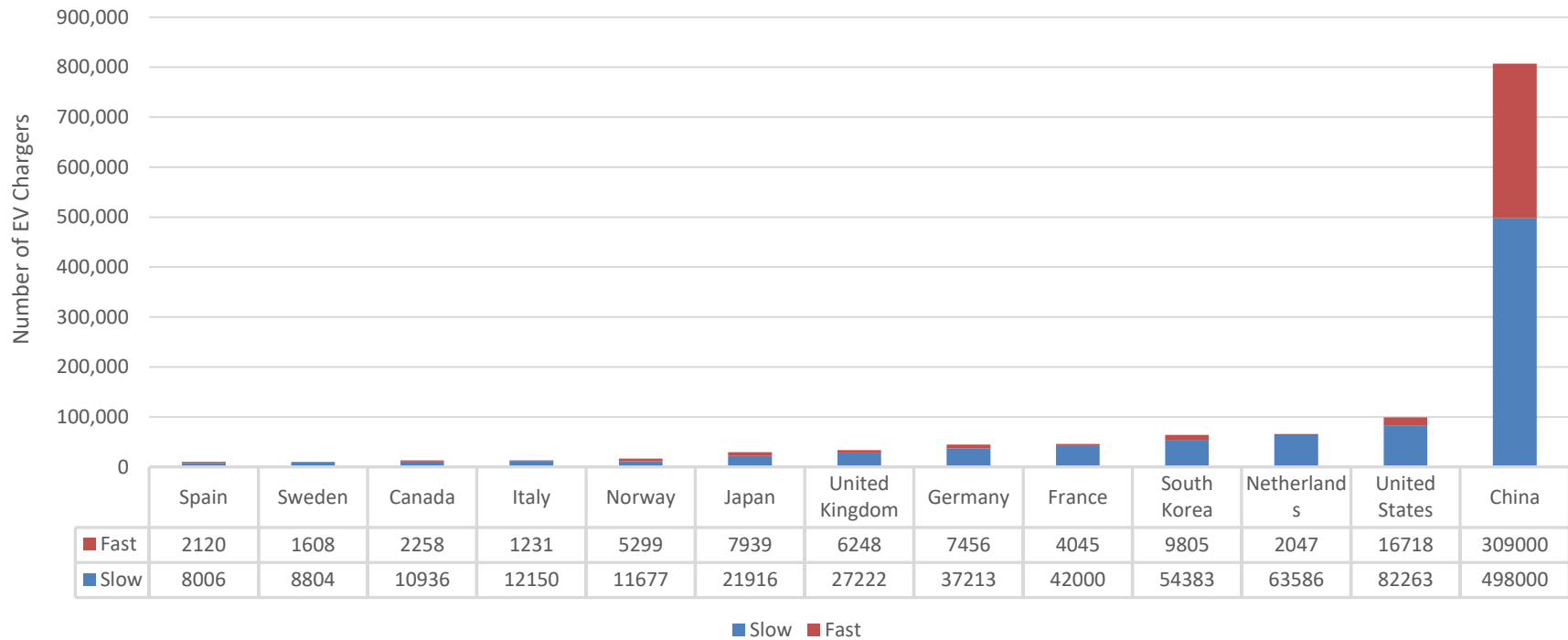
Battery Electric Vehicles (BEV) have always been more popular than Plug-in Hybrid Electric Vehicles (PHEV) on the Chinese market, with an annual sales volume of 1.1 million and 0.25 million units respectively in 2020, and accordingly an annual production volume of just under one million and 0.26 million units.



## CHINA

*The leading country in field of Electro mobility in Asia Pacific with its Plug-in Electric Vehicle fleet size **4.5 MILLION** in 2020*

### Number of Public EVSE Chargers (2020) by Country and Type



**Sources**

IEA; EAFO

**Survey Name**

Global EV Data Explorer, EV chargers

**Source link**

[iea.org](http://iea.org)

**Survey by**

IEA; EAFO

**Published by**

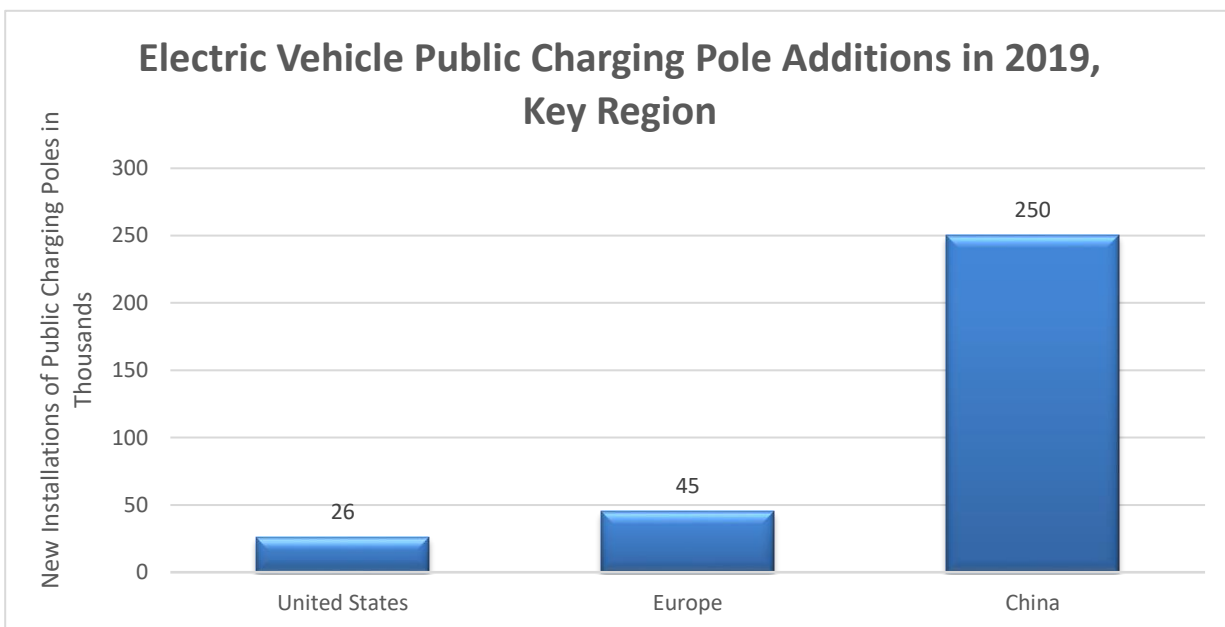
IEA

**Release date**

2021

## Electric vehicle public charging additions in key regions 2019

Some 250,000 new public charging poles were installed in China in 2019. China is one of the leading countries electrifying its road transportation network, and the number of publicly available electric vehicle chargers dwarfs others. Although the United States and Europe have much lower installations of charging infrastructure, some states within the federal systems perform much better than average.



### Sources

McKinsey; Various sources

### Survey by

Various sources (Autozeitung; Electrek; electrive.com; European Alternative Fuels Observatory; Handelsblatt; McKinsey analysis; NBC Universal; Renewable Energy World; Statista; Vox Media)

### Source link

[Electric mobility after the crisis: Why an auto slowdown won't hurt EV demand, page 4](#)

### Published by

McKinsey

### Release date

September 2020

## What are the differences between slow and fast charging?

There are three main types of electric vehicle charging: level 1, level 2, and fast charging. Slow chargers come under the level 2 category, providing between four and 22 kilowatts of power; fast charging provides power that is higher than 22 kilowatts. The higher the power of the charger, the quicker it takes to charge the battery of an electric vehicle. The number of publicly available fast EVSEs grew by more than 40 percent between 2019 and 2020.

## Electric vehicles - range of selected models 2021

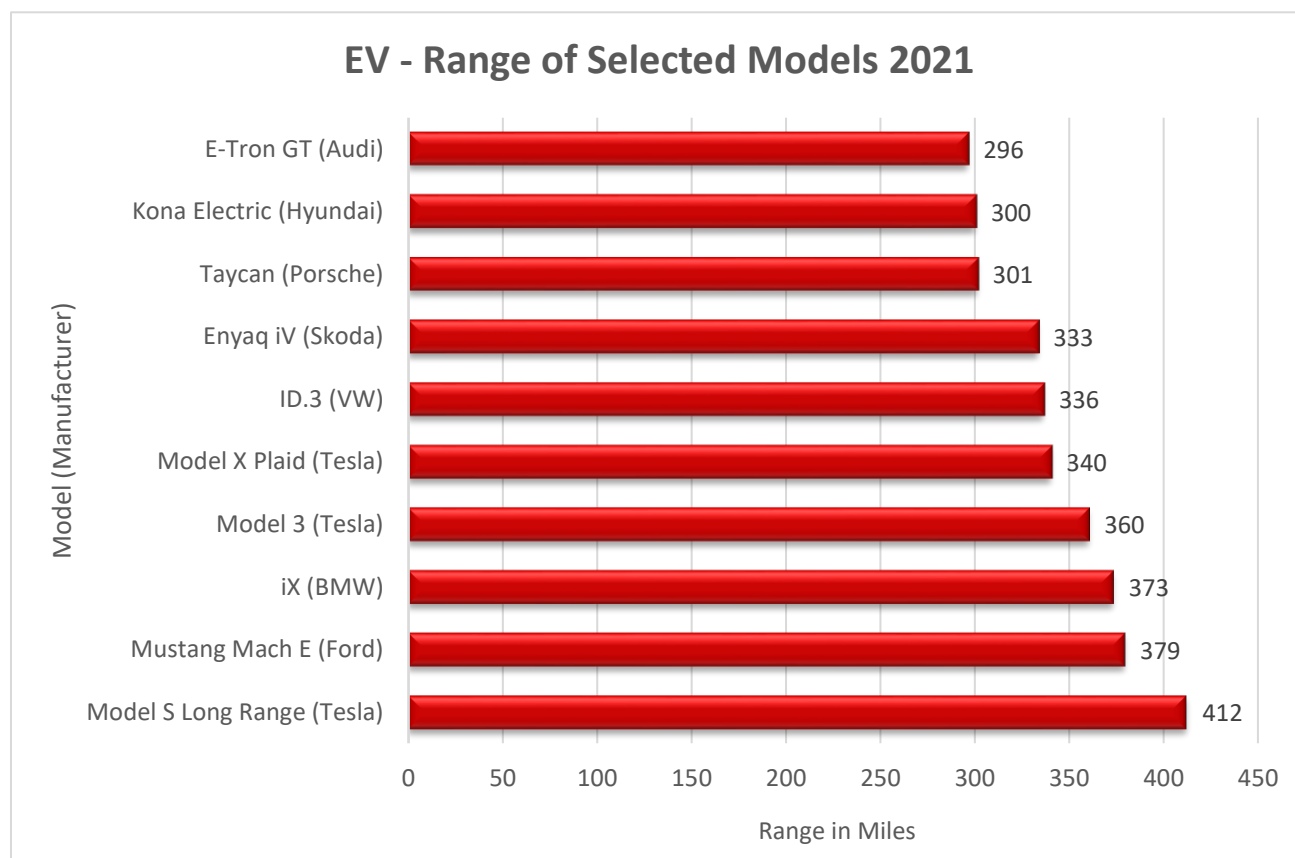
The Tesla Model S Long Range has the longest range of electric vehicles launched worldwide in 2021, traveling up to 412 miles on a single battery charge.

### Will range anxiety fade away?

One of the greatest consumer concerns regarding electric vehicles is the distance they can travel on a single charge, as suggested by respondents to surveys in Germany and the United Kingdom. However, some models can already exceed 300 miles, and as battery technology continues to improve, the projected average range of electric vehicles is expected to reach up to 440 kilometers (273.4 miles) by 2030.

### Tesla spark an interest in EV market

Production of Tesla vehicles has significantly increased in recent years in response to growing worldwide demand for electric vehicles. As a result of increased production output, Tesla's revenue reached around 31.5 billion U.S. dollars in 2020, more than double the number from two years earlier.



#### Sources

MSN; Motoring Research

#### Source link

[msn.com](https://www.msn.com)

#### Survey by & Published by

MSN; Motoring Research

#### Release date

2021

## Companies

### Plug-in electric vehicle sales worldwide by brand 2020

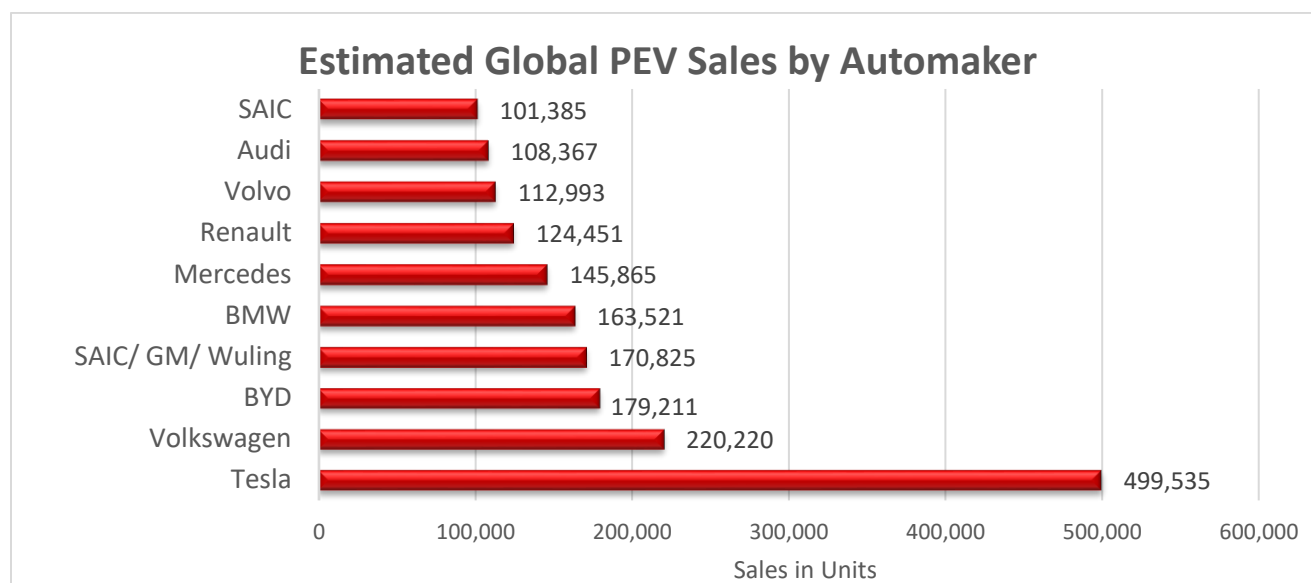
Tesla was the best-selling electric vehicle brand in 2020. That year, Tesla sold just under 500,000 plug-in electric vehicles globally. Third-placed BYD is the leading manufacturer of electric vehicles in China, based on sales.

#### European brands charge ahead in electric car sales

With Europe-based brands Volkswagen, BMW, Mercedes, Renault, and Audi all impressively ranked in the plug-in electric vehicle (PEV) market, there is no doubt that Europe's incumbent automakers are ready to zoom past rivals when it comes to electric mobility. Volatility in the market has, however, come to light in 2020 following the coronavirus outbreak, as international auto sales contracted by around 15 percent and plummeted to around 64 million units.

#### Fueling a green future

With climate change still a hot topic of conversation across the globe, the adoption of fuel-cell electric vehicles (FCEV), which emit only water vapor into the environment, as well as hybrids, plug-in hybrids, and battery electric vehicles is becoming ever more enticing. The number of electric mobility-related patent applications worldwide made progress in 2019 when just over nine million applications were submitted in the area of electric vehicles and charging.



#### Sources

Clean Technica; EV-Volumes.com

#### Survey by

EV-Volumes.com; Expert(s) (Pontes, J.); CleanTechnica

#### Source link

[cleantechnica.com](http://cleantechnica.com)

#### Published by

Clean Technica

#### Release date

February 2021

## Plug-in electric vehicle sales market share by producer 2021

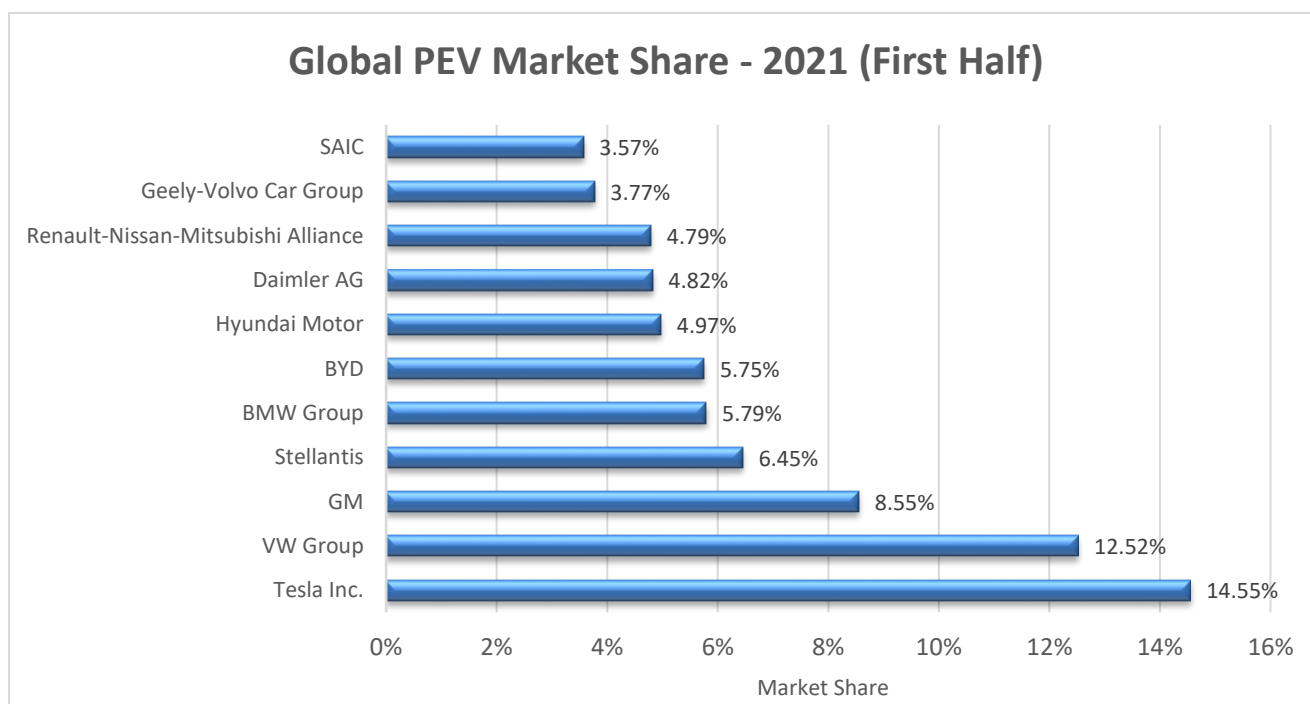
Tesla was ranked as the best-selling electric vehicle manufacturer worldwide after selling close to 421,000 units in the first half of 2021. Tesla's sales volume translates into a market share of about 15 percent. Volkswagen Group and General Motors were among the runners-up.

### Plug-in electric vehicles explained

There are two types of plug-in electric vehicles: battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV). Both contain a charging socket and a rechargeable battery that can power the vehicle on its own. However, a PHEV also includes a traditional internal combustion engine, which kicks in should the battery reach a low level. Therefore, a BEV is the only zero-emission vehicle.

### What type of electric vehicles do producers build?

Manufacturers such as SAIC and Bayerische Motoren Werke (BMW) produce both, battery electric and plug-in hybrid electric vehicles, but Tesla exclusively builds all-electric vehicles. The American company launched its first battery-powered car in 2008, the Roadster. In 2020, Tesla's model line-up included Model S, Model 3, Model X, and Model Y vehicles.



#### Sources

EV-Volumes.com

#### Survey by

EV-Volumes.com

#### Source link

[EV-Volumes Data Center](#)

#### Published by

EV-Volumes.com

#### Release date

2021

## Electric vehicle sales - globally by model 2020

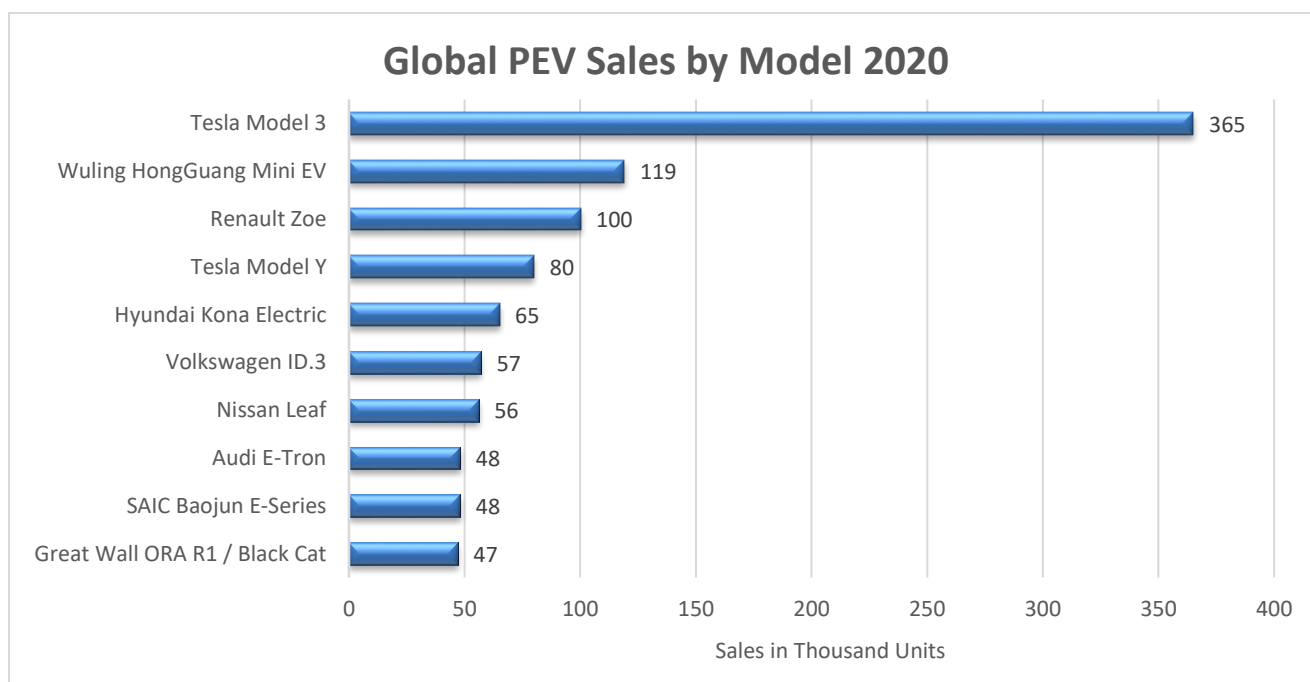
The Tesla Model 3 was the world's most popular plug-in electric vehicle with worldwide unit sales of roughly 365,000 in 2020. That year, deliveries of Tesla's Model 3 and Model Y increased by almost 90 percent year-on-year, and these two models accounted for 60 percent of Tesla's sales volume in 2020.

### Competition increases in electric vehicle manufacturing

Tesla continued its role as the leading electric vehicle brand and yet, 2020 saw competition in the field of electric vehicles intensify. GM-SAIC-Wuling's HongGuang Mini EV also made its debut in 2020, while Volkswagen began delivering its new ID.3 model. Both models made it into the list of best-selling plug-in electric vehicle models worldwide.

### Technology drives automotive electrification

Electric vehicles are growing in popularity. Consumers have become more interested in plug-in electric vehicles following important technological developments. Technology has significantly increased the range of electric vehicles and charging infrastructure, meaning that plug-in vehicles are more accessible and practical. It is expected that solid-state batteries will be a step up on battery technology and have the possibility to extend range even further. Japanese manufacturers hold the most patents in this field.



#### Sources

Website; EV Sales

#### Survey by

Website; EV Sales

#### Source link

[insideevs.com](https://insideevs.com)

#### Published by

Website ([insideevs.com](https://insideevs.com))

#### Release date

February 2021

## Tesla's revenue 2008-2020

Tesla's revenue grew to around 31.5 billion U.S. dollars in the fiscal year of 2020, a 28 percent increase from the previous year. The United States is Tesla's largest sales market.

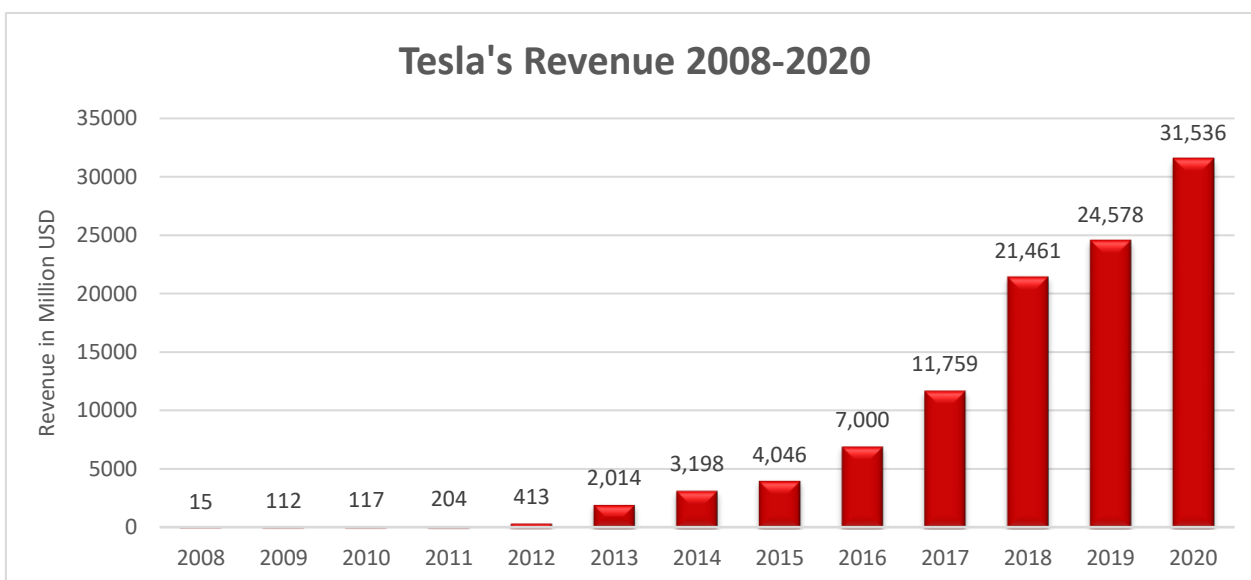
### Revenue rises on model additions

More than 27 billion U.S. dollars of the company's revenue is generated from Tesla's automotive segment, which includes the design, manufacturing, and sales of vehicles. As of March 2020, the electric vehicle (EV) maker has a model range that includes the Tesla Model S, Tesla Model X, Tesla Model 3, and the newly released Tesla Y.

### Model 3 legacy

The Model 3 has emerged as Tesla's best-selling vehicle, but the EV maker has also struggled with consistent net losses in recent years, spending an increasing amount both on selling, general, and administrative (SG&A) activities as well as research and development (R&D) activities.

Much of Tesla's spending has specifically been on production of its new Model 3, a strongly popular vehicle with high demand. One response to this surge in popularity for the Model 3 was Tesla's 2018 purchase of land for the construction of a Gigafactory in Shanghai, China. A factory within China will provide Tesla steady access to the Chinese electric vehicle market, a consistency welcomed in the midst of tensions between the U.S. and China over trade policies.



#### Sources

Tesla

#### Survey by

Tesla

#### Source link

[Tesla Inc. Quarterly Report on Form 8-K, page 5](#)

#### Published by

Tesla

#### Release date

January 2021



## Volkswagen AG - sales revenue 2006-2020

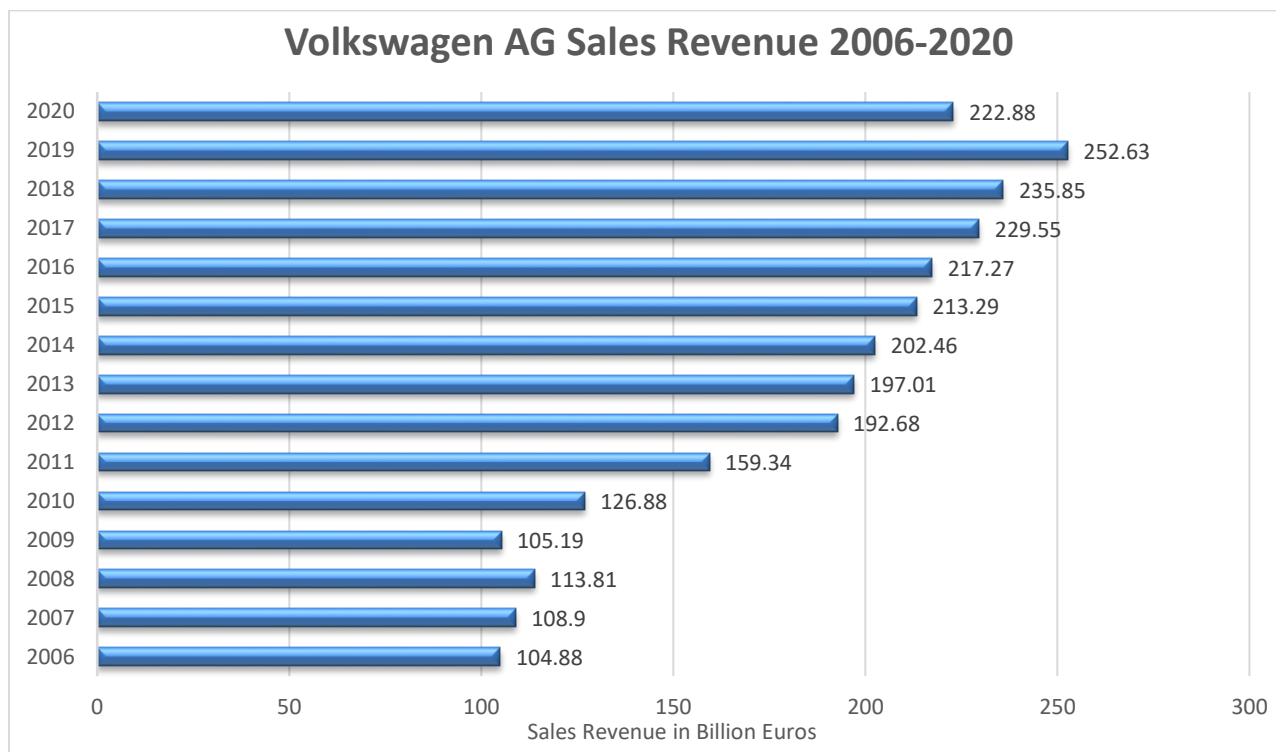
Volkswagen Group's revenue fell in the 2020 fiscal year. The carmaker's 222.9 billion euros in revenue also secured VW a spot in the ranking of the wealthiest companies worldwide.

### Key brand

The Volkswagen Passenger Cars division represented the largest contributor to the company's revenue with a revenue share of about 32 percent in 2020. The flagship brand mainly has hatchbacks, convertibles, and sedans, as well as an array of minivans and sport utility vehicles (SUVs) in its product line-up.

### Key market

While Volkswagen's sales in Germany were flat during the past couple of years, Asia-Pacific has emerged as VW's largest target market. Consumers in China and Hong Kong buy almost ten times as many Volkswagen-badged cars as car shoppers in the United States. Volkswagen and fellow German car brands had a 24 percent share of the Chinese market between January and November 2020. Volkswagen AG (Aktiengesellschaft or joint-stock company) is listed on Frankfurt stock exchange.



#### Sources

Volkswagen

#### Survey by

Volkswagen

#### Source link

[Volkswagen - Annual Report 2020, page 364](#)

#### Published by

Volkswagen

#### Release date

March 2021

## Hyundai Motor Company - Sales Revenue 2011-2020

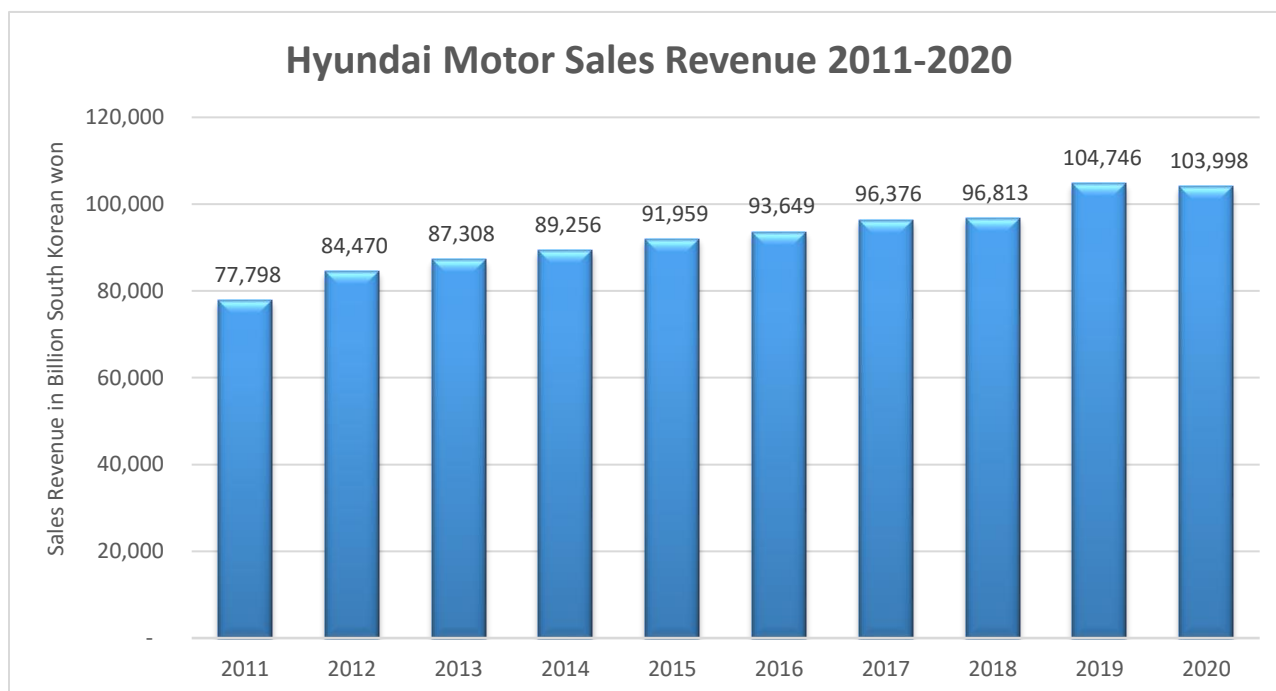
Hyundai reported sales revenue of 104 trillion South Korean won (or about 96 billion U.S. dollars) in 2020. Founded in 1967, Hyundai would go on to manufacture the first South Korean car. The passenger car segment is the largest contributor to the company's revenue.

### Domestic sales offset sales slump

Passenger car sales were down roughly 15 percent for Hyundai, despite a 6.2 percent increase in sales in South Korea. Automotive sales in China slowed down dramatically, contracting by about 32 percent year-on-year. The market share of South Korean passenger car brands in China has fallen from 4.7 percent in 2019 to 3.5 percent in 2020. As alternative fuel vehicles are becoming the favored technology in China, Hyundai is expected to significantly increase their number of “green” models which will be necessary to compete in the future market.

### Shift towards sustainable technologies

In an effort to respond to shifts in consumer demand, Hyundai announced plans to invest more in sustainably-powered cars. The company is planning to build its first overseas hydrogen fuel cell plant in China. The Hyundai Ioniq Electric was already the world's most environmentally friendly MY 2019 car.



#### Sources

Hyundai

#### Survey by

Hyundai

#### Source link

[Hyundai Motor Company Q4 2020 and Annual Business Results, page 10](#)

#### Published by

Hyundai

#### Release date

2021

## Global Revenue of BMW Group 2007-2020

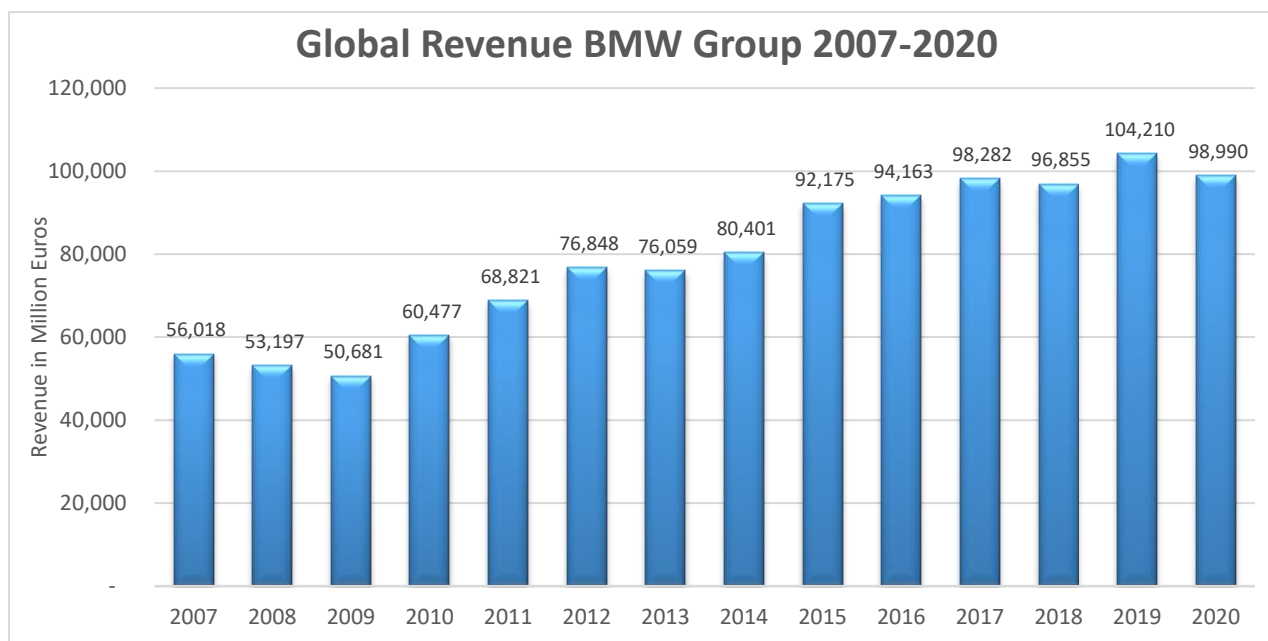
In 2020, BMW Group's global revenue stood at roughly 99 billion euros. The German vehicle manufacturer sells vehicles under the BMW, Rolls-Royce, and MINI brands and was among the leading luxury car brands worldwide in 2019. Following the financial disaster of 2008-2009, BMW recovered rather quickly, surpassing pre-crash revenue and EBIT by 2010.

### BMW in the United States

BMW is currently the third best-selling European automotive brand in the United States, with quarterly sales surpassing 75,000 units. The MINI brand, however, struggles to sell in the U.S. but MINI Cooper has done well to stay in the U.S. market, which is in part due to the Countryman model that accounted for 40.2 percent of Mini's U.S. sales in 2018.

### Electrification

BMW has announced ambitious plans to double electric vehicle sales within two years. If successful, this should increase the company's electric passenger car market share in Europe that currently stands at one percent. Full electrification awaits the company's MINI brand, and the company may even have ambitious ideas for fully electric, high-performance sports cars and motorbikes. The global electric fleet-size is expected to grow ten-fold to 127 million vehicles in 2030.



#### Sources

BMW

#### Survey by

BMW (Bayerische Motoren Werke AG)

#### Source link

[BMW - Annual Report 2020, page 11](#)

#### Published by

BMW

#### Release date

March 2021

## Revenue of BYD Group in China from 2009 to 2020

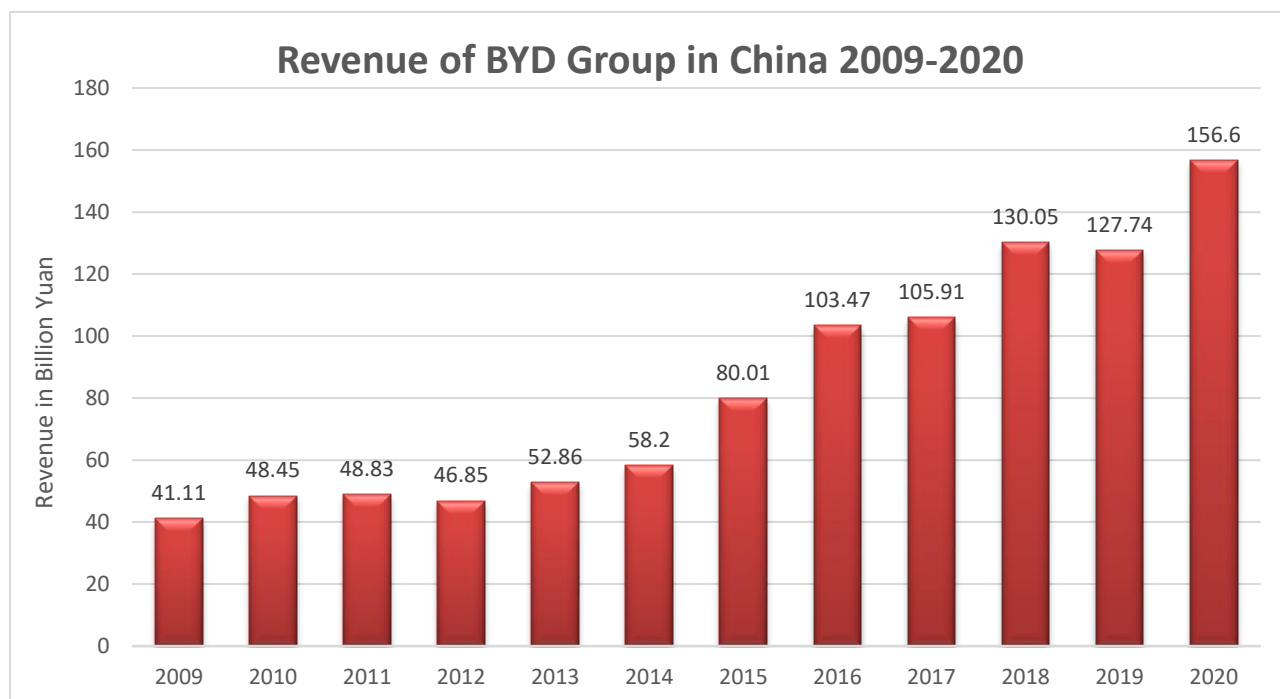
As a move to combat the swiftly escalating climate crisis, China has accelerated its production of electric cars while introducing policies that make it harder to acquire gasoline powered cars. China's leading OEM, the BYD Group, raked in nearly 157 billion yuan as revenue from the sales of its electric vehicles in 2020.

### BYD – China's leading EV brand

BYD was established in China in 1995 as a high-tech company resolved to provide zero-emission energy solutions. By the first half of 2020, it was the largest shareholder in the Chinese electro mobility market with EV sales ranging over 60,200 cars. In the same year, the company also had the third highest sales volume of battery electric vehicles making it one of China's most popular BEV brand.

### Electro mobility infrastructure in China

China has more private electric vehicle charging stations than public ones. Of the overall number of public electric vehicle charging stations, a majority were concentrated in the Guangdong region as of February 2021. More than half the number of the public electric charging stations across China run on alternate current. In spite of the immense progress made by the Asian giant in this field, it remains to be seen how it will overcome the latest setback posed by the coronavirus pandemic.



#### Sources

BYD Auto

#### Survey Name

BYD Group Annual Report 2019

#### Source link

[BYD Group Annual Report 2020, page 7](#)

#### Survey by

BYD Auto

#### Published by

BYD Auto; China Securities Regulatory Commission

#### Release date

March 2021

## Outlook

### Electric vehicles - global market size 2020 & 2026

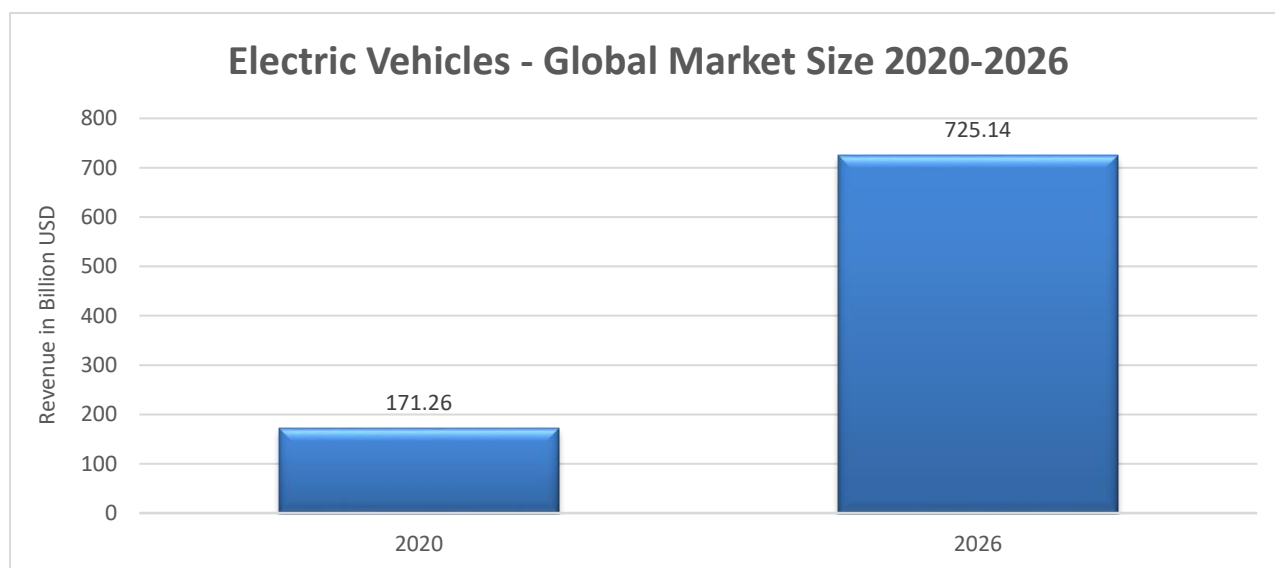
Between 2020 and 2026, the size of the global electric vehicle market is expected to increase over four-fold to reach an estimated global market size of some 725 billion U.S. dollars by 2026. This translates to a notable compound annual growth rate (CAGR) of more than 27 percent between 2020 and 2026.

#### Driving for electrification

Electric vehicles (EVs) have become a much more attractive choice to consumers in recent years thanks to increased range, battery life, efficiency, and affordability. EVs have taken the automotive market in northern European states by storm, and sales figures in China are expected to reach about 3.7 million in 2021. Electric vehicles are seen as the future in China, with market size and demand continuously growing, and it is expected that electric vehicles will make up between 25 and 50 percent of the country's passenger vehicle market by 2025.

#### Widespread adoption in Norway

As of 2021, however, it is Norway that has the largest share of electric vehicles in its fleet: such automobiles represented the majority of new registrations in 2020. Electric vehicles are so popular in Norway in part because of strong incentives put forward by the government, but also because of the availability of charging ports. The widespread availability of charging outlets is paramount in making electric vehicles a viable option for car users.



#### Sources

Mordor Intelligence

#### Survey by

Mordor Intelligence

#### Source link

[mordorintelligence.com](https://mordorintelligence.com)

#### Published by

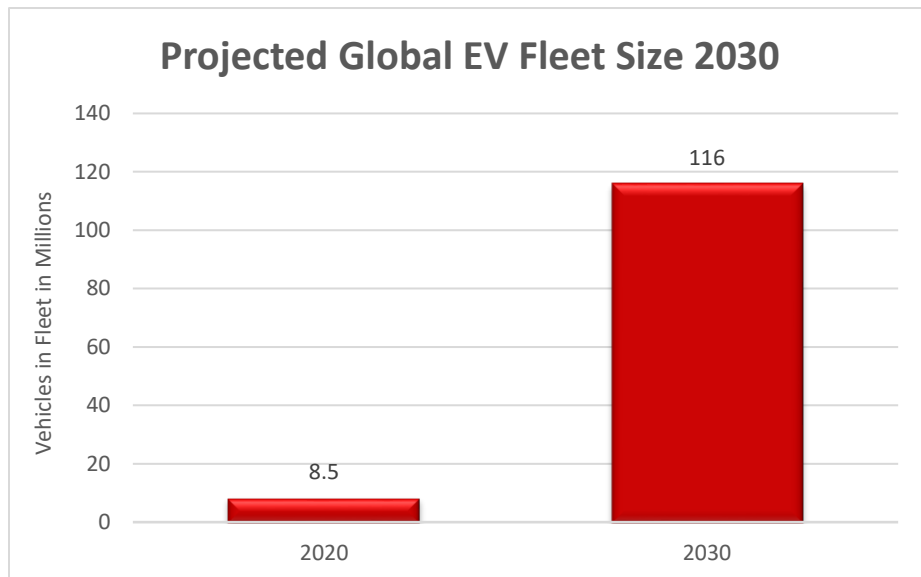
Mordor Intelligence

#### Release date

2021

## Global electric vehicle fleet size 2020-2030

It is expected that there will be 115 million vehicles in the global electric vehicle fleet by 2030, up from an estimated 8.5 million units in 2020. That year, the global electric vehicle fleet grew by more than three million units.



### Sources

BloombergNEF

### Survey by

BloombergNEF

### Survey Name

Electric Vehicle Outlook 2020

### Published by

BloombergNEF

### Source link

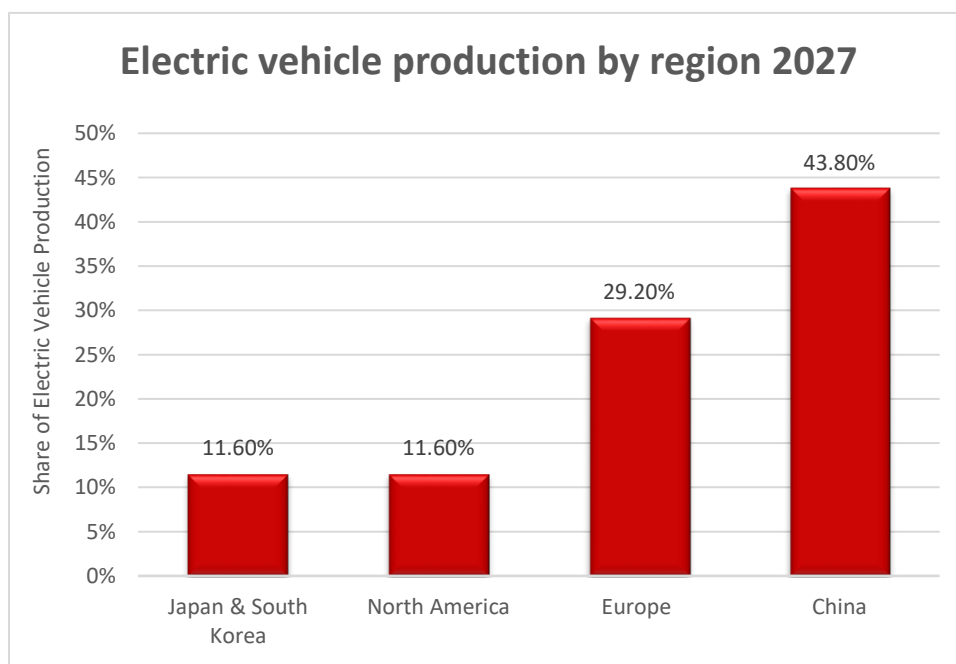
[bnef.com](https://bnef.com)

### Release date

June 2020

## Electric vehicle production by region 2027

It is expected that China's automotive industry will produce about 44 percent of electric vehicles in 2027. That year, global electric vehicle production is anticipated to reach some 13 million units.



### Sources

IHS Markit; Website

### Survey by

IHS Markit; Website

### Published by

Website

### Source link

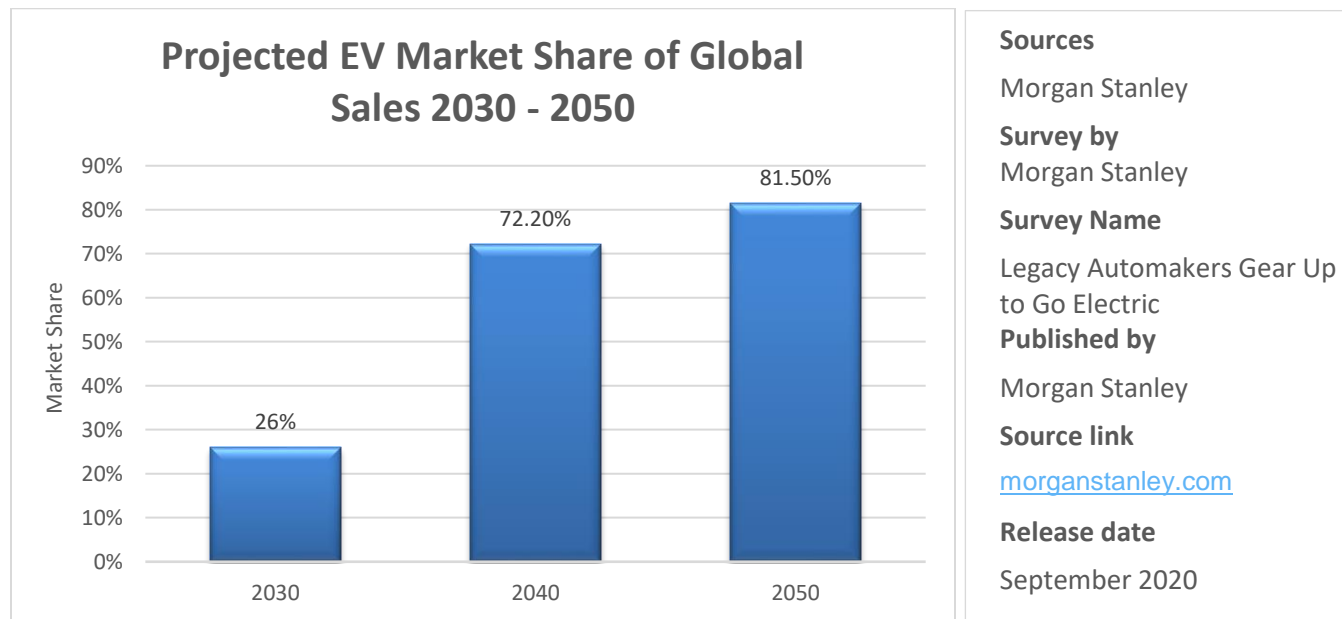
[sme.org](https://sme.org)

### Release date

2020

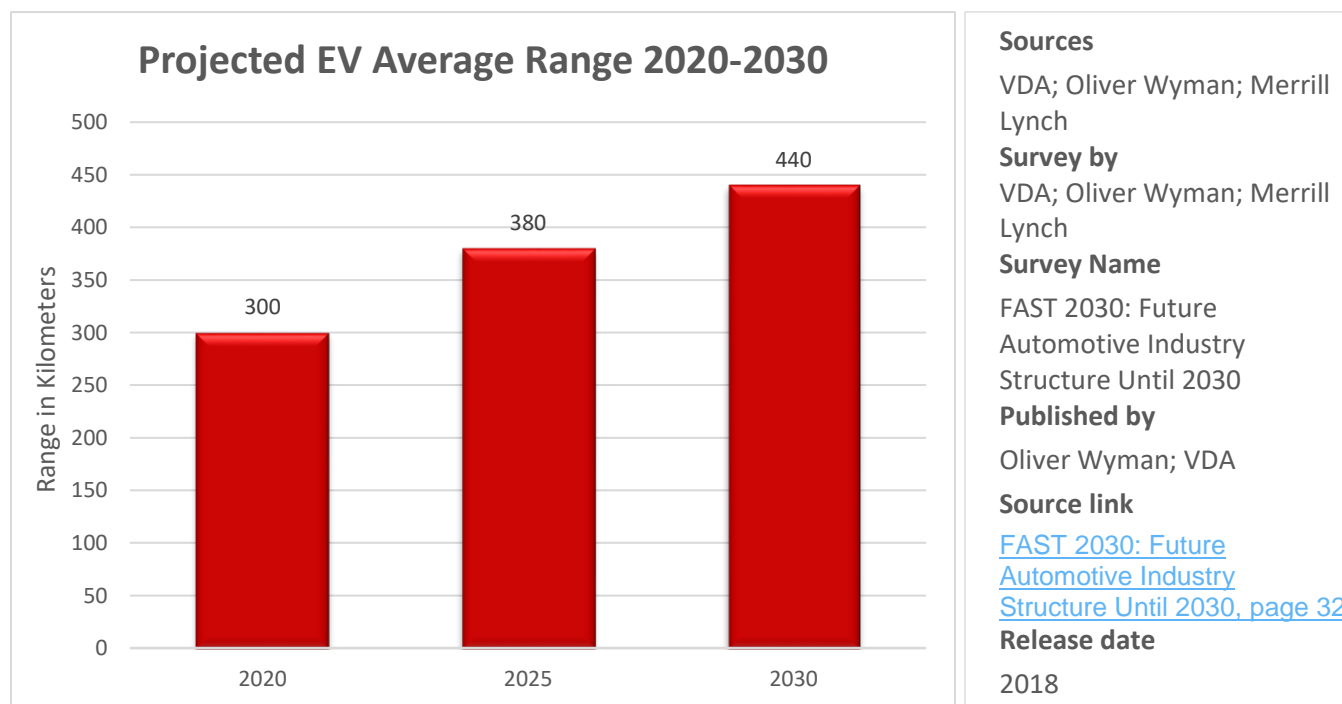
## Projected electric vehicle market share of global sales 2030-2050

The market share of electric vehicles is growing rapidly: by 2030, one in four new cars sold will be battery-powered. It is projected that this figure will increase to over 80 percent by 2050. Electric vehicles are tipped to account for almost 70 percent of the global car parc by 2050.



## Electric vehicles - average range forecast 2020-2030

This graph illustrates the projected average range of electric vehicles between 2020 and 2030. The average electric vehicle on roads across the world is projected to have a range of about 440 kilometers by 2030.



## Electric vehicles - global lithium-ion battery pack costs 2011-2030

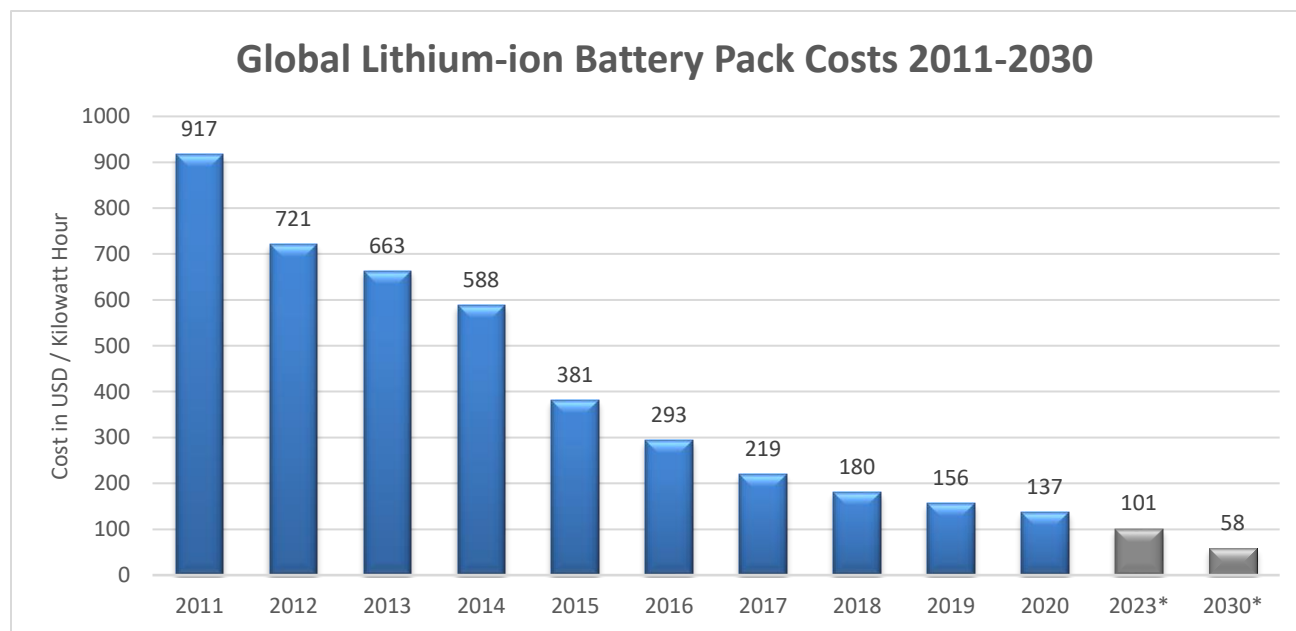
Li-ion battery pack costs dropped to some 137 U.S. dollars per kilowatt hour in 2020 and are expected to drop further in the coming years. Lithium-ion batteries are one of the most efficient energy storage devices worldwide. Over recent years, high scale production and capital investment into the battery production process made lithium-ion battery packs cheaper and more efficient. This demonstrates a staggering demand for energy storage worldwide and could be attributed to the fact that the world is moving towards a renewable energy-based economy where electric vehicles play an increasingly large role.

### Electric vehicle sales

Individuals, organizations, and governments aim to reduce their environmental footprint, as the awareness about the consequences of climate change becomes more widespread. To contribute to a greener society, they promote the growth of the electric vehicle market to make transportation more sustainable and less polluting. The projected market demand for lithium-ion batteries for electric vehicles is expected to reach over 1,500 gigawatt-hours by 2030. When it comes to the sales volume of electric vehicles, the trend is staggeringly positive. For instance, global plug-in electric light vehicle (PEV) sales have progressively increased since 2015, and are estimated to have exceeded three million units sold in 2020. As a leading electric vehicle brand, Tesla reported having sold almost 500,000 such vehicles in 2020.

### Environmental impact

Incorrect disposal of Li-ion batteries can have a devastating environmental impact on the environment, sparking the need for recycling. The global market for lithium-ion battery recycling is expected to reach over 18 billion U.S. dollars by 2030. This figure compares to around 1.5 billion U.S. dollars in 2019.



**Sources**  
BloombergNEF

**Survey by**  
BloombergNEF

**Published by**  
BloombergNEF

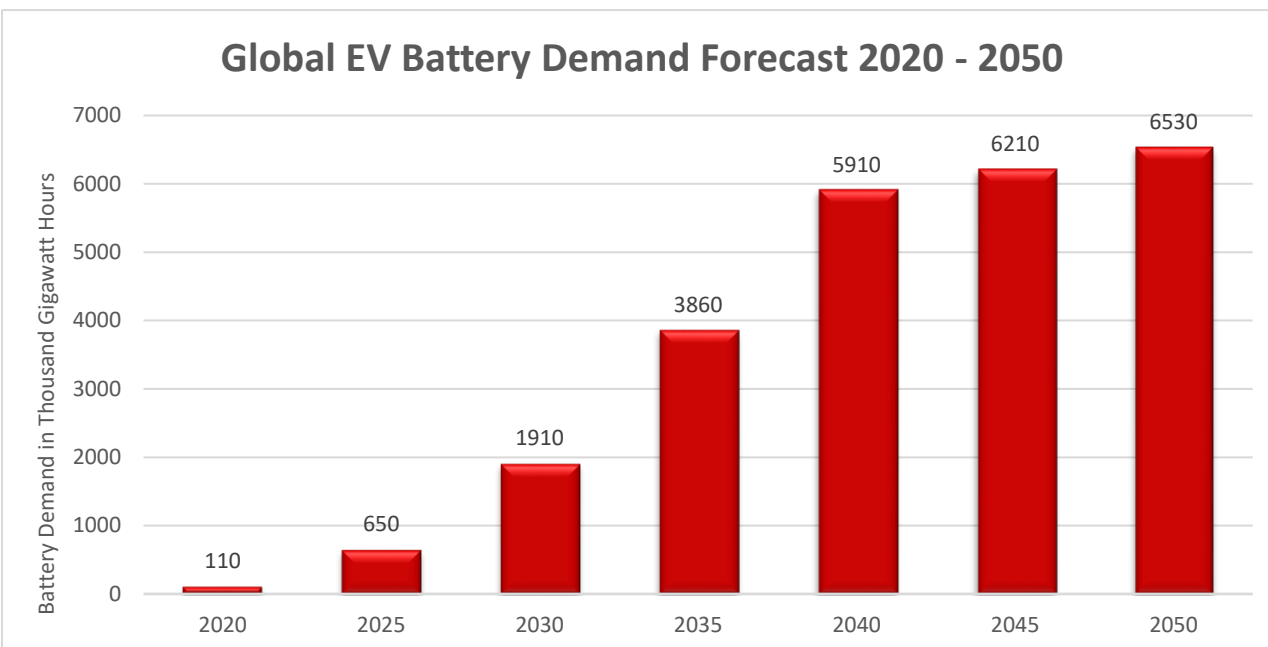
**Release date**  
December 2020

**Source link**  
[bnef.com](https://bnef.com)



## Global electric vehicle battery demand forecast 2020-2050

In 2020, the global demand for electric vehicle batteries is expected to amount to 110 gigawatt hours. This value is expected to increase drastically on a global scale, with a predicted demand of 6,530 gigawatt hours in 2050, which is about 600 times the value at the beginning of the forecast period.



### Sources

The Faraday Institution

### Survey by

The Faraday Institution

### Source link

[Faraday Insights - Issue 6 Update: June 2020, page 2](#)

### Published by

The Faraday Institution

### Release date

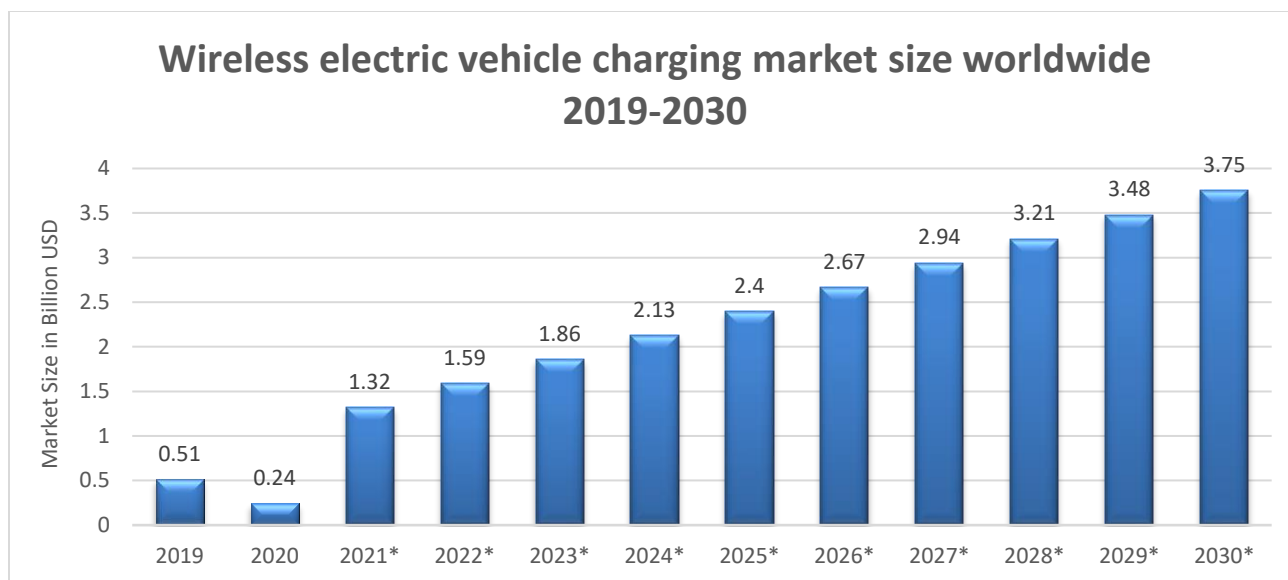
2020

## Wireless electric vehicle charging market size worldwide 2019-2030

According to Next Move Strategy Consulting, the global wireless electric vehicle (EV) charging market is expected to reach 3.75 billion U.S. dollars by 2030. Evatran and Witricity are among the market leaders in this field.

### Recharging the future

Charging electric vehicles with electric vehicle chargers has been a drawback to the practicality of owning an electric car as it takes a long time, even for rapid plug-in charging stations. Wireless recharging is not faster, but it may be more accessible. Inductive chargers use electromagnetic oscillations to efficiently produce electric current that recharges a battery, without the need to plug in any wires. Wireless charging parking bays could immediately begin charging a vehicle as soon as it is positioned above a wireless charging pad. Norway has the highest level of electric vehicle penetration in the world. The capital, Oslo, is planning to introduce wireless charging taxi ranks and be fully electric by 2023. Tesla's Model S is racing ahead in terms of range of electric vehicle.


**Sources**

NMSC

**Survey Name**

Wireless Electric Vehicle Charging Market

**Source link**
[nextmsc.com](http://nextmsc.com)
**Survey by**

NMSC

**Published by**

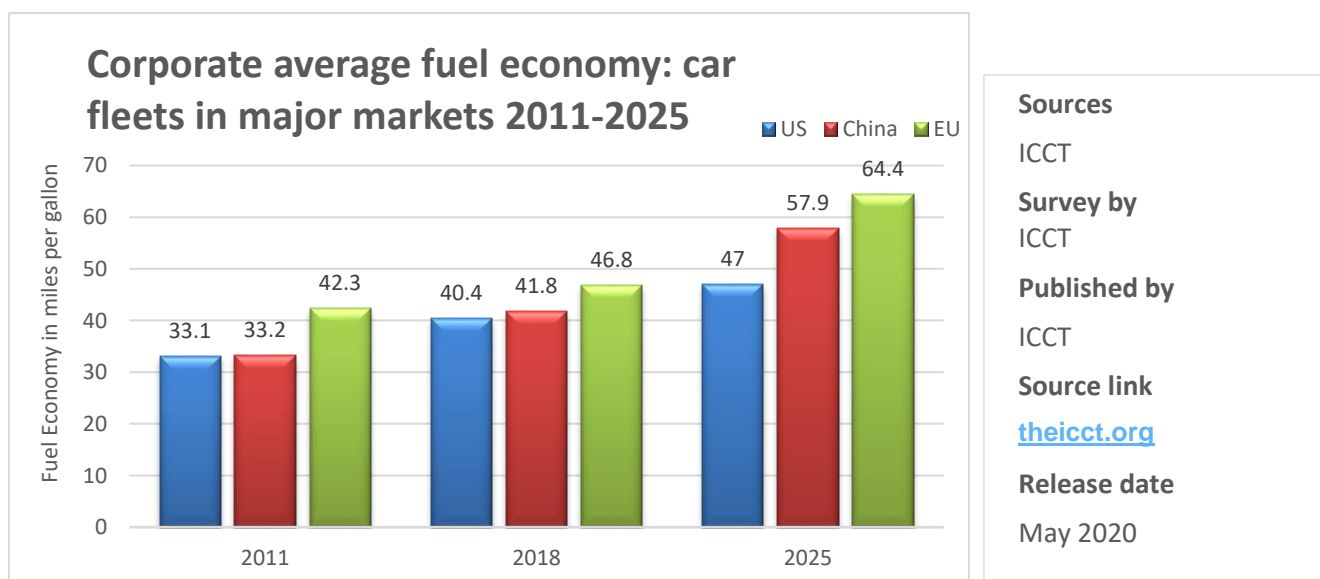
NMSC

**Release date**

July 2021

### Corporate average fuel economy: car fleets in major markets 2011-2025

Corporate average fuel economy (CAFE) standards in the United States indicate that new passenger cars will average 47.7 miles per gallon in 2025, meaning that drivers of typical passenger vehicles in the U.S. will have to stop more often to refuel than Chinese and European motorists. By 2025, new passenger vehicles in Europe are expected to average 64.4 miles per gallon, while new cars on Chinese roads are anticipated to travel 57.9 miles per gallon. For every 100 miles driven, that is just over 1.7 gallons in China.


**Sources**

ICCT

**Survey by**

ICCT

**Published by**

ICCT

**Source link**
[theicct.org](http://theicct.org)
**Release date**

May 2020