Automotive Industry

Germany – The World’s Automotive Hub of Innovation

The German automotive industry is playing a pivotal role in the global transition to electric mobility solutions.

Germany is recognized the world over for its outstanding automotive industry and excellence in engineering. From Asia to the Americas, German cars embody highly cherished values of innovation, reliability, safety, and design. Germany is by some distance Europe’s leading production and sales market. The country’s world-class R&D infrastructure, complete industry value chain integration, and highly qualified workforce create an internationally peerless automotive environment. It enables companies to develop cutting-edge technologies, which perfectly address tomorrow’s mobility needs. Interested in establishing your own business in Germany?

Take a look at our impressive automotive industry numbers and find out why, more than 125 years after inventing the automobile, Germany remains the world’s automotive innovation hub. Find out more down below about Germany’s Electric Automotive and Mobility Sector:

- Video News: Automotive Industry and Electric Mobility in Germany
- News: Automotive Industry and Electric Mobility in Germany
- Publications: Germany’s Automotive Industry and Future Mobility
- Automotive Industry & Market Numbers
- Business Opportunities in Germany
- Market Trends: Global Automotive Industry
- Car Ownership: Shifting Attitudes after Corona

Video News: Automotive Industry and Electric Mobility in Germany

What’s new in Germany’s Electric Automotive and Mobility Sector? Watch the news!

- Why Battery Makers are Coming to Germany
- Germany’s Drive Toward Electric Vehicles
- Germany to Invest Record 86 Billion Euros in Rail Modernization
- German Start-up Produces Solar-powered Car
- The Future of Mobility “Made in Germany”

Why Battery Makers are Coming to Germany

Electric vehicles batteries used to be made primarily in Asia, but now suppliers are flocking to Germany to be near Europe’s largest automotive sector. Find out more:
Germany's Drive Toward Electric Vehicles

Germany now has more than one million electric and hybrid vehicles on the road, but it has set its sights far higher. Learn more about Germany's automotive future:
Germany to Invest Record 86 Billion Euros in Rail Modernization

As part of Germany’s push to meet its climate protection goals, the country is investing billions of euros to make its rail system among the world’s most modern. More information:
German Start-up Produces Solar-powered Car

A car that’s powered solely by the sun? A pipe dream, you might say. But innovative Munich start-up Sono Motors is making it a reality. Check it out:
The Future of Mobility "Made in Germany"

How we get around is an integral part of how we are – and where we’re headed. And mobility in Germany has entered a fascinating period of disruption, change and innovation. Here’s a run-through:
News: Automotive Industry and Electric Mobility in Germany

Germany's Automotive Industry is securing its position in the future electric mobility market. Find out more in our industry news.

- E-Mobility News | June 2021
- Automotive Industry News | March 2021

E-Mobility News | June 2021

Germany has emerged as Europe's electric mobility champion. There were 400,000 new electric car registrations in 2020, with subsidies and infrastructure rollout driving vehicle sales.

Germany European leader in electric mobility

Germany established itself as the European electric mobility leader in 2020, with new vehicle sales of 400,000 for the year. A comparison of new electric car registrations for May 2020 and May 2021 shows a 380 percent increase. Electric vehicles (EV) account for just under 12 percent of the total number of newly registered vehicles. Attractive vehicle purchase subsidies have helped drive sales, with pure electric vehicles posting a 20.5 percent increase even in the coronavirus-induced crisis month of May 2020 when the auto industry witnessed a slump of around 50 percent in vehicle registrations across all classes. Willingness to switch to electric vehicles is also increasing, with around one in three Germans prepared to buy an electric car according to a survey conducted by Civey. Germany's efforts to scale up elec-
tric mobility were further bolstered by the recent passing of a law stipulating the inclusion of EV charging infrastructu­re and parking spaces in all new and refurbished buildings.

**Germany readies for multi-billion euro battery market**

Global demand for German and European technologies to service the electric battery sector will create a market worth up to EUR 60 billion by 2030, with annual sales volume of at least EUR 20 billion according technology consultancy Al­tran. According to the Fraunhofer Institute, battery factories with an annual production capacity of 500 to 600 gi­gawatt hours could be set up in Germany by 2030 – equivalent to almost one third of global production and enough to equip 10 million electric vehicles. Germany is already home to numerous companies and suppliers that are important providers in the value chain from cell chemistry and materials preparation through to final battery cell production.

**Tesla to build battery factory in Brandenburg**

Tesla has submitted formal application plans for the construction of a battery factory in Brandenburg. The electric vehicle manufacturer extended and submitted the new plans as part of its permit application for the construction of its car factory. Vehicle production is set to begin at the end of the year as part of the revised plans.

**AI start-up solutions to extend battery life**

A number of German start-ups specializing in battery analysis are attracting the interest of large suppliers and manufacturers who require third party electric battery-life solutions. Dresden-based company Novum Engineering is just one of several German start-ups specializing in battery analysis to extend battery life, with Twaice in Munich and Ac­cure in Aachen also enticing companies from the automotive and energy sectors with the promise of precise battery charging and residual capacity data. A number of start-ups are now involved in test and pilot projects to simulate battery performance and charging processes.

**Volkswagen plans bidirectional charging to feed into the grid**

Volkswagen has announced plans to introduce bidirectional charging to its vehicles. As of 2022, all electric vehicles pro­duced by the Volkswagen Group will be developed on the basis of the "Modular Electrification Toolkit" (MEB) that al­lows unused energy to flow back into the grid. Two bidirectional scenarios are emerging, the first being "vehicle to home" (where electric vehicles can store energy from a photovoltaic system, for example, and feed it back into the household energy supply) and "vehicle to grid" where all of the vehicles connected to a charging station can be linked to form a huge electricity storage system. Test vehicle development is already underway with the group entering the final preparation stages before rollout next year.

**Varta keen to enter e-mobility battery market**

Swabian battery manufacturer Varta is reportedly seeking to enter the electric mobility battery-cell market. To date, Varta has mainly produced small lithium-ion button cells for wireless headphones as well as household batteries for remote controls, watches, flashlights and other small devices. The company is currently setting up a pilot project for a large format 21700 battery cell primarily for use in high-performance electric vehicles at its Ellwangen headquarters. Industry insiders believe that the company is currently in talks with a number of car manufacturers.

**Automotive Industry News | March 2021**

Germany has become the world’s second-biggest electric car market, with German OEMs already taking steps to secure their position in the future digital mobility market.
AUTOMOTIVE INDUSTRY

Germany overtakes USA to become world number two electric car market

Germany has overtaken the USA to become the world’s second-largest market for electric vehicles. Generous subsidies for electric cars and plug-in hybrid vehicles have led to a boom in Germany and Europe. New vehicle purchase premiums of up to EUR 9,000 have kick-started demand, allowing Germany to overtake the US as the world’s second-largest market for electric vehicles according to the Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW).

China remains the largest market for electric and plug-in hybrid vehicles with 1.25 million new registrations in 2020, although demand is falling with the market growing by just three percent in the same period. However, global demand has increased by 38 percent, fueled by demand from Europe, led by Germany with a 264 percent increase (395,000 vehicles). The demand has given a fillip to domestic vehicle manufacturers, with VW recording 422,000 new electric car and plug-in registrations in 2020. The Wolfsburg-based car giant overtook Tesla for the first time in Q4/20, selling 192,000 electric cars (compared to Tesla’s 181,000 over the same period).

German auto manufacturers doubled their global production of electric and plug-in vehicles last year, producing more than a quarter of all electric passenger vehicles made worldwide.

German brands dominate the global auto industry

German auto brands continue to dominate the world’s most valuable auto brands despite the harsh effects of the coronavirus crisis on the auto industry. According to the Brand Finance Global 500 2021 ranking, the country’s auto industry dominates globally with a cumulative brand value of USD 201.8 billion.

Mercedes retains its position as Germany’s most valuable brand across all industry sectors, with VW, BMW, Porsche, and Audi all occupying spots in the global top 10 most valuable auto brands. German companies in the top 10 have a combined brand value of USD 197.2 billion – equivalent to 54.7 percent of the top 10 most valuable auto brands.

VW sees future in digital software services delivery

Having successfully made the move to electric vehicles, VW has announced ambitious plans to revolutionize its business model. According to Handelsblatt, the Wolfsburg-based concern is currently working on a “Business Model 2.0” strategy that will see its primary focus placed on software and services provision. The digital transformation presaged by VW is premised upon the future value of electric and autonomous vehicles being measured in terms of digital services. To that end, VW is examining the possibility of partnerships with start-ups like Isar Aerospace in order to develop solutions for car connectivity to the satellite internet.

Handelsblatt reports that, although the further course of action will be determined in the coming years, the project is already in progress within VW development departments. In March, VW presented its technology roadmap for battery and charging up to 2030, with ambitious plans for a number of charging cooperations, a new unit battery cell and six battery-cell factories across Europe.

Audi plans to build own fast-charging infrastructure

German carmaker Audi intends to build its own charging infrastructure of between 200 and 400 stations for electric vehicles. Speaking to Handelsblatt, Audi CEO Markus Duesmann argued the necessity for the plan, citing the fact that at least 30 percent of Audi cars sold in Europe will be electric in the next four years. “We don’t want sales of our vehicles to fall due to a lack of charging stations.”

The VW subsidiary has however come in for criticism from the German Federal Association for E-Mobility, which believes that Audi’s draft plan fails to conform to existing specialized laws and regulatory fundamentals as well the associated infrastructure for electric mobility. Germany’s transport ministry is investing almost two billion euros in extending the charging infrastructure along the national motorway network.
EU gives green light to Daimler Trucks and Volvo venture

Daimler Trucks and Volvo are set to join forces for the joint development of fuel-cell systems following EU competition regulator approval. The decision leaves the way open for the two companies to establish the new company focused on the research and development, production and sales of heavy truck fuel-cell systems. The venture will see Volvo acquire 50 percent of the company for around EUR 600 million, with the transaction set to be finalized in the first half of the year.

Publications: Germany’s Automotive Industry and Future Mobility

Download our latest publications about the Automotive Industry and Future Mobility in Germany completely free of charge.

The Automotive Industry in Germany

Germany is Europe’s number one automotive market in production and sales terms and the most innovative in international comparison.

Find out more and download our latest industry overview "The Automotive Industry in Germany" free of charge:

Download

The Automotive Industry in Germany
Issue 2020/2021
(PDF; 1.5 MB)
Future Mobility in Germany

Germany’s world-leading automotive industry is a driving force in the transformation to the smart and sustainable mobility of the future.

Find out more and download our latest fact sheet "Future Mobility in Germany" free of charge:

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Future Mobility in Germany
Issue 2021/2022
(PDF; 1.9 MB)

Automotive Industry & Market Numbers

The automotive industry is the largest industry in Germany and the European leader. The sector’s proven track record and commitment to new mobility technologies make it the world’s auto innovation hub.

- The automotive industry is the **largest industry sector in Germany**. In 2020, the auto sector listed turnover of EUR 379.3 billion – around 20 percent of total German industry revenue.
- Germany is Europe’s **number one automotive market**, accounting for around 25 percent of all passenger cars manufactured (3.5 million) and approximately 20 percent of all new car registrations (2.9 million).
- One in every five cars worldwide carries a German brand.
- Germany is home to 42 automobile assembly and engine production plants with a capacity of over **one third of total automobile production** in Europe.
- In 2018, Germany’s domestic internal automotive industry R&D expenditure remained at EUR 25 billion – equivalent to **35 percent of total R&D** expenditure in Germany.
- Eighteen of the world’s top 100 automotive suppliers are German companies.*
- Around **75 percent of cars** produced in Germany in 2020 were ultimately destined for international markets – a new record.
AUTOMOTIVE INDUSTRY

- More than **40 percent of patent registrations** in Germany originate from the automotive industry.
- R&D personnel within the German automobile industry reached around 120,000. Around 809,000 are employed in the industry as a whole in 2020.

*Source: VDA und ACEA 2020
*Source: Crain Communications 2019

Business Opportunities in Germany

Germany’s automotive industry provides numerous business opportunities for international companies seeking to enter Europe’s biggest and most innovative automotive market.

International investors benefit from numerous competitive advantages when doing business in Germany. Germany’s **favorable geographical location** in the heart of Europe enables business without trade barriers, thanks to its integration in the European Union and the Eurozone. A **stable single currency** and **close proximity** to other major **European markets** consolidate the German automotive industry’s advantageous position.

“Germany has established itself as one of the most attractive investment destinations worldwide. It is the only western European country that plays a significant part in the so-called “global Champions League.”” *Source: Ernst & Young Standort Deutschland 2013*

Germany’s **high concentration** of auto-related **R&D, design, supply, manufacturing** and **assembly** facilities makes it possible for companies to successfully partner across the whole value chain. It also explains why recent studies see the German automotive industry outperforming other countries when it comes to innovative power, product quality and productivity.

Around **36%** of all **premium segment cars** were produced **in Germany** in 2019. By becoming part of the world’s automotive innovation hub, investors have the opportunity to boost their businesses through innovating, producing, and marketing world-leading technologies and products "Made in Germany."
Germany Welcomes Tesla Gigafactory to Berlin-Brandenburg Location

Political and business leaders have hailed Elon Musk’s announcement that EV giant Tesla will build its European plant just outside Berlin.

The Premium Segment
Germany: World’s premium car production and innovation hub

- Germany produces 36% of all premium vehicles globally
- 53% of all premium vehicles are manufactured in Europe
- 67% of all premium vehicles are manufactured by German OEMs

The country’s strong industrial base, its value chain density, its R&D power, and particular strength in the automotive premium business, enables investors to develop cutting edge automotive technologies for today’s automotive needs. [..]"
Market Trends: Global Automotive Industry

Germany is showing the world the way forward to the autonomous, connected and green mobility models of the future. What’s trending within the global automotive industry?

The German automotive industry is a substantial and integral part of the global automotive industry. Suppliers and OEMs in Germany are on top of the technological market transformation. Automotive engineers are hard at work improving internal combustion engine energy efficiency, developing alternative drive technologies (including electric, hybrid, and fuel cell cars), and adapting lightweight materials and electronics.

Tighter carbon emission reduction targets and the government’s electric mobility initiative (“National Electromobility Development Plan”) are major innovation drivers for future growth. As a result, demand for connected cars equipped with driver-assistance systems and information components will increase significantly – especially in the premium segment.

Smart technologies will revolutionize the driving experience further. Germany’s industry strength in electronic technologies and software solutions allied to its innovative business networks bolster technological development in one of Germany’s major fields of expertise.
“7 out of 10 premium cars produced in Europe are manufactured in Germany – A number which impressively il­
lustrates the country’s innovation power – particularly important for the premium segment.”

Oliver Seiler, Director Mechanical & Electronic Technologies, Germany Trade & Invest

As well as technological transformation, the automotive industry is undergoing a continuous value shift from OEMs to suppliers. According to a study conducted by Oliver Wyman and the German Automotive Industry Association (VDA), OEM share of global R&D value creation will decline from 60% today to 47% in 2025 (Source: FAST 2025). Strategic al­
liances between OEMs and suppliers - as well as within the supplying industry - will grow in importance and offer sig­nificant growth potential. Be part of Germany’s automotive success story and locate your business in the world’s largest automotive innovation hub.

Car Ownership: Shifting Attitudes after Corona

The global coronavirus has dramatically changed mobility attitudes. Consumer demand for private vehicles is
on the rise as mobility services and public transport fall out of favor.

Corona and changing mobility attitudes

The first automotive sector studies conducted since the start of the global corona pandemic show a fundamental turn­
around in consumer mobility attitudes: Sharing offers are being avoided and the car is becoming even more popular – particularly in terms of individual ownership. An additional push to increase electric car ownership is part of the re­
cently announced German stimulus package.

Interest in mobility services and public transport down

According to the Capgemini “COVID -19 and the automotive consumer” study, interest in car ownership amongst under
35-year-olds is on the rise for the first time in years. The findings are based on a sample of 11,000 consumers in 11
countries responsible for 62 percent of global annual passenger vehicle sales. 44 percent of younger consumers who
have never previously owned a car are currently considering purchasing one in the coming months. Consumer demand
for mobility services and public transport will also reduce significantly – now and in the future – according to the re­
port.

Modes of urban mobility changing

Post-corona, we can expect that urban mobility will most likely be very different. Within a matter of weeks, the pan­
demic has changed something that car manufacturers have failed to do for years; namely altering the intended buying behavior of younger customers. For some time, the focus for 18- and 35- year-olds has been on mobility and service use and less about car ownership. Instead of driving their own car, young consumers preferred intermodal public transportation and other shared mobility options. The coronavirus crisis has revived interest in car ownership. This
finding is reinforced by a second study conducted by the Boston Consulting Group. The group asked a sample of 5,000 individuals about their new mobility preferences. Not surprisingly, the car ranked at number one.

Support for electric vehicles in Germany

In Germany, the government has announced plans to double the amount of purchase incentives already in place for battery electric vehicles (BEVs) as part of its EUR 130 billion stimulus package intended to shore up the country’s post-coronavirus economy. This translates into a cash grant of EUR 6,000 for each BEV purchased. This is supplemented by an additional EUR 3,000 subsidy from car manufacturers. The measure apply for cars with a value of up to 40,000 Euros (excluding value-added tax).

Additional investment in battery infrastructure

To further boost e-mobility, an additional EUR 2.5 billion will be allocated to existing infrastructure programs to build additional charging stations and support further battery cell production. Both changing consumer behavior and the generous grants available will create new opportunities for Germany’s strong automotive industry as well as attract new foreign investors to the sector.

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