



Market Brief:

Electric Mobility in Germany (2016)



Basic Data on the Economy

GDP (2014): \$3.8 Trillion (+1.6%)

Capital: Berlin

Language: German

Population: 81.2 million

Introduction

As of January 2016, 45.07 million passenger cars were registered in Germany, including 25,502 battery electric vehicles and 130,365 hybrid electric vehicles (this includes plug-in hybrids). While the absolute number of electric vehicles (EVs) is still marginal, the EV segment shows by far the highest and most promising growth rates amongst all vehicle segments. In recent years, the German Government has developed and implemented several initiatives to boost EV sales to reach its ambitious goal of one million EVs on German roads by 2020, along with an established and comprehensive charging infrastructure network.

While there was some significant investment in the build-up of EV charging infrastructure from both, public and private stakeholders, the ongoing expansion of the public charging infrastructure has slowed down significantly since 2012. Today, the growth rate of newly registered EV's outstrips that of charging points.

EVs Registrations Germany

| Fuel Type/ Category | Gasoline | Diesel | LPG | CNG | Battery Electric Vehicles (BEVs) | Hybrid Battery Electric Vehicles (HBEVs) | Total |
|--|-----------------------|------------------------|--------------------|-------------------|---|--|----------------------|
| Germany: Vehicle Stock by Fuel Type (as of 01/2016) | 29,825,223 (66.2%) | 14,532,426 (32.24%) | 475,711 (1.05%) | 80,300 (0.18%) | 25,502 (0.06%) | 130,365 (0.29%) | 45,071,201 (100%) |
| Germany: Annual Registr. in 2015 | 1,611,389 (50.26%) | 1,538,451 (47.99%) | 4,716 (0.15%) | 5,285 (0.17%) | 12,363 (0.39%) | 33,630 (11,101 PHEVs) (1.05%/0.34%) | 3,206,042 |

Electric Vehicles – Status Quo

As of January 2016, Germany's Federal Motor Transport Authority (KBA) reports a total of 45,071,209 registered passenger vehicles in Germany, including 25,502 BEVs and 130,365 HBEVs (this included Plug-in Hybrid Electric Vehicles, PHEVs). Note: KBA did not collect PHEVs separate from HBEVs before 2013, so no official information on the complete number of registered PHEVs in Germany is available – data is only available for new monthly/annual PHEV registrations. A total of 33,360 PHEVs were registered in 2015.

The Ten Most Popular EVs in Germany in 2015

| | | | | | |
|------------------------------|---|-------|------------------|---|-------|
| 1. Kia Soul EV |  | 3.842 | 6. Renault Zoe |  | 1.787 |
| 2. BMW i3 |  | 2.271 | 7. Tesla Model S |  | 1.582 |
| 3. Mitsubishi Outlander PHEV |  | 2.128 | 8. VW e-Golf |  | 1.099 |
| 4. VW Golf GTE |  | 2.109 | 9. VW Passat GTE |  | 996 |
| 5. Audi A3 e-tron |  | 1.839 | 10. Nissan Leaf |  | 949 |

In 2016, the Federal German Government passed an EV funding program to further promote EV sales/deployment in Germany. Accordingly, the government has joined forces with automakers to launch an incentive program to boost sales of electric and hybrid vehicles. Germany has a lower proportion of electric cars than other big European countries, including the U.K., France, Italy and Spain. The new subsidies are designed to encourage drivers to swap to greener cars and boost the production of electric cars in Germany.

Charging Infrastructure - Status Quo

According to German industry association BDEW, there were 2,567 charging stations with a total of 5,836 charging points available in 2015. Over 900 cities and municipalities report at least one public charging point. According to Germany's National Platform for Electric Mobility (NPE) 2015 status report, by mid-2015, the approx. 27,600 EVs relevant to the charging infrastructure in Germany were being served by a total of around 5,600 charging points at around 2,500 public charging stations and more than 100 public fast charging stations with Combo 2 connectors. The majority of Germany's EV users are charging either at home or at the workplace (private/semi-public access points).

The expansion of public EV charging stations has been slowing down since 2012, mainly due to poor cost-efficiency and low utilization levels. The growth rate for EV registrations today has outstripped the number of new charging points added to Germany's public charging infrastructure and the ratio for registered EVs/public charging station is about 10:1 (i.e. 10 EVs share one charging station). Dynamic development is currently observed for DC-fast charging infrastructure (NPE estimates that around 1,400 DC fast-charging stations will be installed by 2017 – but another 5,700 additional DC charging stations will be needed by 2020, which according to experts may call for need of around EUR 140 million in additional investments).

Operators of charging stations in Germany include the country's leading energy providers (Vattenfall, E.ON, RWE and EnBW), regional and municipal energy & utility providers, as well as private companies & networks (such as LAdenetz, Orlen, Park & Charge and Drehstromnetz). Companies like Mennekes, ABB, Schneider Electric, e8energy, or TheNewMotion are examples of established EV charging stations manufacturers. Additional companies specialized in either public- or private charging are offering solutions in Germany and Europe, such as innovative SME/start-up Ubitricity. Integrated mobility and charging solutions for customers, private industry as well as public authorities are provided by companies such as Allego, Parkstrom or The Mobility House, who provide and serve as suppliers & (system) integrators of innovative charging infrastructure (private & public).

Today, there is no official, centralized charging stations registry in Germany, although this was recently suggested by legislators. Today, EV-users may find charging stations through various private websites & apps, such as [LEMnet](#), [e-Stations](#), [GoingElectric](#), [Plugfinder](#) or [Plugsurfing](#). Different payment methods are available which is often complicated & frustrating from a user-perspective. Several national and pan-European eRoaming initiatives and platforms (e.g. Hubject, MOBI.E, Enel, e-clearing, or GIREVE) were formed to address these issues and to enhance user experience and ease of charging & payment across the EU. The European Commission has also pushed for initiatives and provided funding in order to deploy EV charging stations across Europe. An example of that is the Fast E (DE/BE) which plans to install 241 multi-standard fast chargers in Germany and 37 in Belgium, the cost is being divided between the European Commission and a consortium of project partners.

Recent EV Policy & Legislation

Central governmental body and initiative to promote, develop & implement electric mobility in Germany is the Federal Government's National Platform for Electric Mobility (NPE), which serves as an official advisory body and brings together leading representatives from industry, science, politics, trade unions and trade associations for strategic dialogue, to investigate the economic, social and environmental potential of electric mobility and recommend actions for politicians and business. Via NPE, Germany has identified and articulated a common strategy as well as specific targets: the common goal of industry, politicians, science, civil society and trade unions is to make Germany the leading supplier and lead market for eMobility by 2020 and to achieve one million electric vehicles on Germany's roads by 2020.

Apart from already existing tax incentives for private and corporate EV owners, in 2016 Germany's legislators passed an EV-incentive scheme to further subsidize electric mobility. From 2016-2020, new EV-buyers will be able to apply for a EUR 4,000 (\$4,500) subsidy for purely electric cars (BEVs), and up to EUR 3,000 for plug-in hybrids (PHEVs). The funding scheme is limited to EUR 1.2 billion and subsidies are only available for EVs listed below a EUR 60,000 price tag. EVs will also be exempt from motor vehicle taxes for 10 years. The costs of the scheme will be shared between Government and the auto industry (several major OEMs have signed up so far), each putting up as much as EUR 600 million. The government is hoping that between 300,000 and 500,000 new electric cars will take to the streets of Germany thanks to the new scheme – which would be a massive increase on the roughly 25,500 BEVs (plus 130,000 HBEVs) currently registered. In addition to the buyer's premium, the German government will spend EUR 300 million to improve related infrastructure – the goal is to install as many as 15,000 new charging stations in the next three years. It will also invest 100 million euros to ensure 20% of government vehicles are electric. The government scheme intends to aid the official target to get one million electric cars onto Germany's streets by 2020. Up until this point, the scheme is heavily discussed and also criticized for various reasons and is currently under review by the European Commission and subject to approval.

Additional EV-specific legislation was recently passed in Germany (i.e. EmG, LSV) to further support electric mobility on a local level (empowering cities/municipalities to grant EVs certain privileges) and to enforce corresponding EC directives. Accordingly, as of 2015, EVs are considered a distinct and separate vehicle classification with a separate license plate. This was necessary so that cities/municipalities may now grant certain privileges to EVs, such as access to restricted parking areas, reduction/absence of parking fees, access to bus lanes and/or other restricted areas.

In order to further support and establish the interoperability of Europe's charging infrastructure, EU member states must also enforce compliance with corresponding EC directives. According to Germany's latest charging station bill, several minimum technical standards/specs must hence be met for all newly installed EV charging stations, such as CCS compatibility. Certain roaming and payment-related requirements (ad-hoc payment) were announced as well. This directly addresses and translates corresponding European directives into national law (e.g. [EC/2014/94](#)).

Projects & Initiatives (selection/examples)

Federal programs/initiatives:

- [Germany's Showcase Regions for Electric Mobility](#)
- [National Organization of Hydrogen and Fuel Cell Technology \(NOW\)](#)
- [National Platform Electromobility \(NPE\)](#)

SLAM

- Web: <http://www.slam-projekt.de/>
- funded by Germany's Federal Ministry of Transport and Digital Infrastructure (BMVI). The goal is to install 400 fast charging stations across Germany (at highways rest stops).

Fast-E

- Web: <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/projects-by-country/multi-country/2014-eu-tm-0196-s>
- EU-funded program to promote & deploy fast charging network infrastructure (connecting strategic

corridors)

Hubject

- Web: <https://www.hubject.com>
- eRoaming platform (initiated and organized by industry – close cooperation with most leading associations, national programs and public entities/programs)

Important Electric Mobility Stakeholders

- Federal Ministry for Transport & Digital Infrastructure (BMVI):
 - ✓ Web: http://www.bmvi.de/EN/Home/home_node.html
 - ✓ Federal Motor Authority (KBA): <http://www.kba.de/>
- Relevant Association Overview:
 - ✓ (BDI) [Federation of German Industry](#)
 - ✓ (BDEW) [Association for Energy and Water Industries](#)
 - ✓ (BEM) [German Association of Electric Mobility](#)
 - ✓ (BITKOM) [Association for Information Technology, Telecommunications and New Media](#)
 - ✓ (BVES) [German Energy Storage Association](#)
 - ✓ (BWE) [German Wind Energy Association](#)
 - ✓ (CharInEV): <http://www.charinev.org/>
 - ✓ (DWV) [The German Hydrogen and Fuel Cell Association](#)
 - ✓ (IVM) [German Motorcycle Industry Association](#)
 - ✓ (VDA) [German Association of the Automotive Industry](#)
 - ✓ (VDMA) [German Engineering Association](#)
 - ✓ (VKU) [Association of German Municipal Enterprises](#)
 - ✓ (ZIV) [German Bicycle Industry Association](#)
 - ✓ (ZVEI) [Electrical and Electronic Manufacturers' Association](#)
- Leading Trade Fairs in Germany (featuring eMobility):
 - ✓ **Automechanika Frankfurt** (September 13-17, 2016): <http://automechanika.messefrankfurt.com/>
 - ✓ **eCarTec Munich**, October 18-20, 2016: <http://www.ecartec.com/>
 - ✓ **EVS30**, Stuttgart, October 9-11, 2016: http://www.messe-sauber.eu/index.php?article_id=280
 - ✓ **Hannover Fair**, April 24-28, 2016: <http://www.hannovermesse.de/home>
 - ✓ **IAA Commercial Vehicles**, Hannover, September 22-29, 2016: <http://www.iaa.de/>
 - ✓ **IAA Passanger Vehicles**, Frankfurt, September 14-24, 2017: <http://www.iaa.de/>
 - ✓ **Intermot Cologne**, October 5-9, 2016: <http://www.intermot-cologne.com/intermot/index-3.php>
 - ✓ **Metropolitan Solutions**, Berlin, 2017: <http://www.metropolitansolutions.de/>
 - ✓ **World of Energy Solutions**, Stuttgart, October 10-12, 2016: <http://www.world-of-energy-solutions.de/en/>

Your POC in Germany:

Mr. Felix Happe
Commercial Specialist
American Consulate General
U.S. Commercial Service
Gießener Str. 30
60435 Frankfurt
Tel: +49-(0) 69-7535-3153
Felix.Happe@trade.gov
<http://export.gov/germany>

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