



21.1 Major Developments in 2017

In 2017 13,726 EVs have been registered, 5,189 (+61 % compared to 2016). This is a significant increase as already 2016 showed a registration growth rate of 65 %. In 2016, the increase was linked to tax incentives, which made the purchase of EVs more attractive for companies and self-employed persons, e.g. company cars have become eligible for deduction of input tax and are exempted of non-cash compensation regulations. In 2017, the increase correlates with the introduction of the “Förderpaket für Elektromobilität” program. This program is a federal support package for EVs which consists of purchase subsidies and subsidies for the construction of charging infrastructure. In addition, the program offers incentives for the EV-use on federal level such as the particular green license plate.

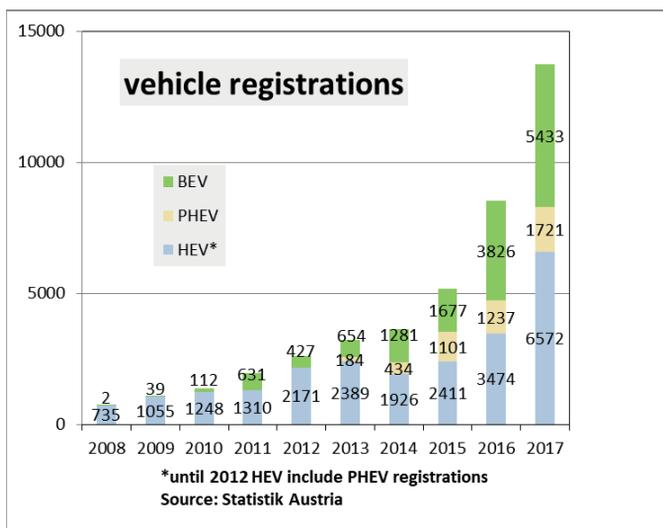


Figure 1: Development of BEV/ PHE/ HEV vehicle registration in Austria

Austria is facilitating the nationwide deployment of EVs through the creation of a nationwide network of charging stations. In a first step, 11 electricity suppliers combine 1,300 of their charging stations. From April 11th, 2017 onwards EV

drivers have access to the combined network, which will grow to 2,000 charging stations until the end of the year.

Other major developments (1) on a political level is the strong commitment to e-mobility in the 2017 Austrian government program, (2) the Austrian co-operation activities within European Battery Initiative or (3) the continuous research and innovation funding in the area of e-mobility such as the funding program “Mobilität der Zukunft” (Mobility of the Future).

21.1.1 New policies, legislation, incentives, funding, research, taxation, etc.

In November 2016, the Austrian minister for Transport, Innovation and Technology (bmvit) and minister of Agriculture, Forestry, Environment and Water Management (BMLFUW) together with the spokesman of the Austrian automobile importers presented the “Förderpaket für Elektromobilität”¹⁸, a package of measures to support e-mobility. The program runs for two years and will make 72 million EUR available for the purchase of EVs and the installation of charging stations. The package contains also EV-use incentives like a particular green license plate. The main objective of the green license plate is to allow flexibility in the introduction of tailored incentives on regional and local levels.

7,100 funding application for EVs have been submitted in 2017. 5,300 of these are related to passenger EVs. With 87 % BEVs represent the lion’s share here. There is also a considerable demand for the green license plate as 1,869 plates have been issued only in the first two weeks after its introduction on April 1st, 2017.

On December 6th, 2016, the national strategy framework was introduced to the Ministerial Council by the Federal Ministry for Transport, Innovation and Technology (bmvit), the Ministry of Science, Research and Economy (BMWFV) and the Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) and approved. With the national strategic framework “*Saubere Energie im Verkehr*”¹⁹ (Clean Energy in Transportation) Austria fulfilled an obligation of the 2014/94/EU directive of the European Parliament and Council about the installation of an infrastructure for alternative fuels, such as electricity, CNG, LNG and hydrogen.

¹⁸ <https://www.bmvit.gv.at/presse/aktuell/downloads/leichtfried/emobilpaket.pdf>

¹⁹ <https://www.bmvit.gv.at/verkehr/elektromobilitaet/downloads/strategierahmen.pdf>

21.2 HEVs, PHEVs and EVs on the Road

In 2017, the number of motor vehicles on Austrian roads has risen to 6,771,395 (+1.8 % compared to 2016) out of which 4,898,578 (+1.6 %) represent passenger vehicles. The numbers are in line with the long-term trend towards a growing passenger vehicle fleet, which showed an average growth rate of 1.4 % per year in the last ten years.

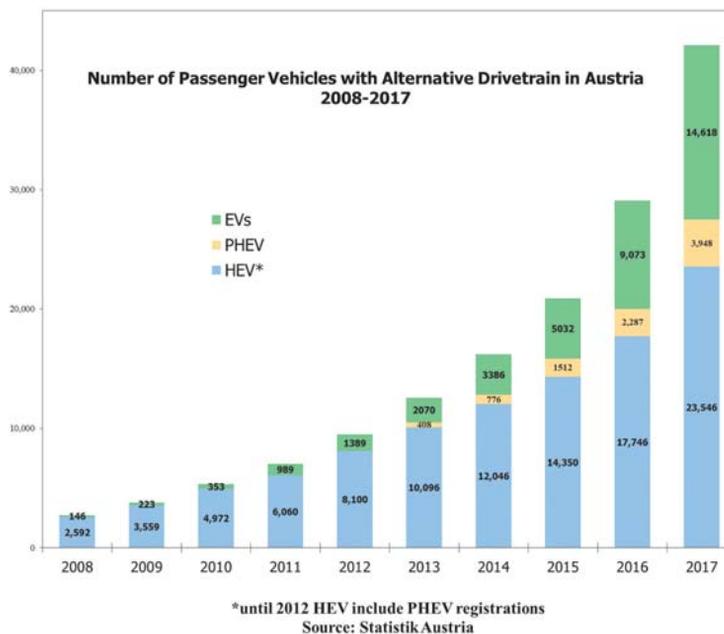


Figure 2: Passenger BEV/ HEV/ PHEV development 2008-2017

42,112 (0.9 %) of the passenger cars on Austrian roads are EVs. Figure 2 illustrates the split between BEV/ HEV/ PHEV. In absolute numbers HEVs dominate with a total of 23,546 cars with an increase by 5,800 (+33 % compared to 2016), followed by 14,618 BEVs (+5545 vehicles or +61 % vehicles) and 3,948 PHEVs (+1661 vehicles or +73 %). The number of FCEVs (not included in Figure 2) increased since 2016 from 13 to 18. Although the passenger EV share of the total vehicle fleet is not significant yet, the number of newly registered EVs and its yearly growth rate show a promising trend towards an accelerating EV uptake.

In 2017, a total number of 457,174 motor vehicles (+6.1 % compared to 2016) and 353,320 passenger cars (+7.2 % compared to 2016) were newly registered. 13,726 or 3.9 % (+5189 compared to 2016) of the newly registered passenger vehicles are EVs. Remarkable is the high EV registration growth rate of +61 % in 2017 which

considerably outperforms the overall market growth. The trend is a continuation similar to previous years with EV registration growth rates of +43 % in 2015 and +65 % in 2016. Within the passenger EV sector differences in the registration growth between BEV/ HEV/ PHEV can be identified. HEVs show the highest growth with +6572 vehicles (+89 %), followed by BEVs with +5433 vehicles (+42 %) and by PHEVs with +1721 vehicles (+39 %).

21.3 Charging Infrastructure or EVSE

In Austria most public charging stations (EVSE) are operated and/or owned by regional energy service providers and many operators require a specific registration for the customer in order to charge at their stations. To overcome this EV-use barrier the Climate and Energy Fund funded the project “ÖHUB”. In the project 11 regional energy service providers connected their existing charging infrastructure to a shared network. This step gives EV-drivers access to 80 % of the current public Austrian charging infrastructure with only one single contract. In 2017, approximately 2,000 charging points became part of the ÖHUB network. Until 2020 the network plans to expand to 5,000 charging points.

Another relevant service provider yet not part of the ÖHUB network is SMARTRICS, a company which provides a public charging network. Shareholders of SMARTRICS are the “Verbund”, Austria’s biggest energy service provider, and Siemens. The SMARTRICS charging network includes around 435 charging points located along motorways and in urban centers out of which 210 are high-speed charging points with 43 or 50 kW output.

Table 1: Charging infrastructure in 2017 (Data source: e-tankstellen-finder.com)

Charging Infrastructure on 31 January 2017	
Chargers	Quantity
AC Level 1 Chargers	n.a.
AC Level 2 Chargers	3,329
CHAdeMO	196
CCS	181
Tesla	30
Inductive Charging	n.a.
Totals	3,736

Austrian EVSEs are not obliged to register in a central data base. Therefore the number of public available EVSEs and their charging capacity vary depending on the data set source. The number of charging points accessible at a single EVSE depends on the used charger type. EVSEs using AC level 2 Charger with a

charging capacity of maximum 22 kW consist of in average three charging points. EVSEs using other charger types provide in general one charging point. 3,736 EVSEs are publically accessible. 3,178 of these allow a charging capacity of up to 22 kW. The remaining 588 stations offer accelerated charging or fast charging.

The figures in table 1 are based on a comprehensive data base provided from the website “*e-tankstellen-finder.com*” of the regional energy service provider KELAG (*Kärntner Elektrizitäts-Aktiengesellschaft*), which is a member in the ÖHUB consortium. Although EVSE operators are free to add their stations to the data base, the information can be considered as reliable and up-to-date as EV drivers use the website and the related app for charging station decisions.

21.4 EV Demonstration Projects

*klimaaktiv mobil*²⁰, the national action program for mobility management, provides a national framework for developing and implementing measures to reduce CO₂ emissions. It promotes environmentally friendly and energy efficient mobility and stimulates new innovative business opportunities and green jobs. Between 2006 and 2016, more than 8,400 green mobility projects have been initiated. This enabled annual savings of 640,000 tons of CO₂. In 2016, 19 million EUR funding has been made available. For the whole program period an overall funding of 87.5 million EUR is planned.

The Program “*Leuchttürme der Elektromobilität*”²¹ (Electric Mobility Flagship Projects) is a funding program within the *Climate and Energy Fund*. Its objective is to demonstrate the suitability of Austrian electric mobility technologies for everyday use and to translate innovations into close-to-the-market applications. The program addresses technological areas such as automotive engineering, software development, usability optimization or transport planning to tackle the challenges of electric mobility. From 2014 to 2017, four calls have been published. This program has an annual budget of approximately 5 million EUR.

The research program “*Mobilität der Zukunft*”²² (*Mobility of the Future*) is an Austrian national transportation R&D-funding program for the period 2012–2020. The program was developed by the Austrian *Federal Ministry for Transport Innovation and Technology* (bmvit). It includes four complimentary thematic fields: *Personal Mobility*, *Mobility of Goods*, *Vehicle Technology*, and *Transport*

²⁰ <http://www.klimaaktiv.at/mobilitaet.html>

²¹ https://www.klimafonds.gv.at/assets/epaper/en_catalog_7042335/html5.html#1

²² <https://www.bmvit.gv.at/innovation/mobilitaet/mobilitaetderzukunft.html>

Infrastructure. The annual budget of *Mobilität der Zukunft* is between 13 and 19 million EUR.

In 2006, the Austrian *Federal Ministry for Transport Innovation and Technology* (bmvit) founded the “*Austrian Association for Advanced Propulsion Systems (A3PS)*”²³ in order to support an active technology policy of the ministry and to strengthen Austrian research and development activities. A3PS is a strategic public-private partnership, serving as a reliable partner for the ministry as well as for the partner companies and scientific institutions. A3PS addresses all advanced power train and vehicle technologies such as advanced ICE technologies, hybrid, battery electric and fuel cell vehicles as well as advanced fuel technologies including bio fuels and active safety measures such as ADAS and supports the whole innovation cycle including research, development and deployment.

It is worth to mention that according to VCÖ²⁴ (Verkehrsclub Österreich) 86.500 e-bikes were sold in 2016, which makes Austria number 3 in terms of sold e-bikes per inhabitant in Europe. However, these impressive numbers are not included in the above statistics as electric bikes, e-bikes or pedelecs (pedal-electric-vehicles) are defined as bicycles with assisted pedaling.

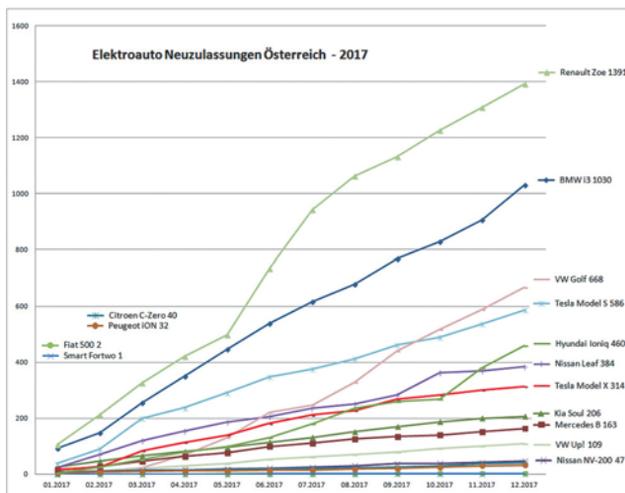


Figure 3: Newly registered electric passenger vehicles in Austria in 2017. Data source: <https://myampera.wordpress.com/statistik/>, based on Statistik Austria Data

²³ <http://www.a3ps.at/>

²⁴ <https://www.vcoe.at/news/details/vcoe-in-oesterreich-fast-400-000-e-fahrraeder-klarere-spitzenreiter-bei-e-fahrzeugen>

CHAPTER 21 – AUSTRIA

Table 2: Distribution and sales of EVs, PHEVs and HEVs in 2017 (Data source: Statistik Austria)

Fleet Totals on 31 December 2017					
Vehicle Type	EVs	PHEVs	HEVs	FCVs	Total ⁵
2- Wheelers ¹	5,975	8		0	796,478
3-Wheelers and Quatricycles ¹	1,082	5		0	35,741
Passenger Vehicles ²	14,618	3,948	23,546	19	4,898,578
Buses and Minibuses ³	143	4		0	9,956
Trucks ⁴	1,713	9		0	474,778
Totals without bicycles	23,531	27,520		19	6,215,531

Total Sales during 2017					
Vehicle Type	EVs	PHEVs	HEVs	FCVs	Total ⁵
2- Wheelers ¹	1,838	0	0	0	43,361
3-Wheelers and Quatricycles ¹	145	0	0	0	2,812
Passenger Vehicles ²	5,433	1,721	6,572	0	353,320
Buses and Minibuses ³	6	0	0	0	1,244
Trucks ⁴	237	0	0	0	44,127
Totals without bicycles	7,659	1,721	6,572	0	444,864

n.a. = not available

¹ UNECE categories L1-L5 ; ² UNECE categories M1 ;

³ UNECE categories M2-M3 ; ⁴ UNECE categories N1-N3 ; ⁵ Including non-electric vehicles

Table 3: Available vehicles and prices (Data source: ÖAMTC, February 2018)

Market-Price Comparison of Selected EVs and PHEVs in Austria	
Available Passenger Vehicles	Untaxed, Unsubsidized Sales Price (in EUR)
Audi A3 e-tron	41,270
BMW i3	38,400
BMW i3 Rex	43,100
Citroen Berlingo	33,300
Citroen C-Zero	21,990
Ford Focus Electric	34,900
Hyundai Ioniq Elektro	34,990
KIA Soul EV AC	33,290

2018 HEV TCP ANNUAL REPORT

Mercedes Benz B-Klasse Electric Drive	39,800
Mercedes Benz S 500 Plug-In Hybrid	86,750
Mitsubishi i-MIEV	29,990
Mitsubishi Outlander PHEV	44,640
Nissan e-NV200 2.Zero Edition	42,444
Nissan Leaf Visia 40kWh	32,950
Peugeot iOn	21,990
Peugeot Partner	33,300
Porsche Panamera 4 E-Hybrid	111,754
Renault Kangoo Z.E.1	25,440
Renault Twizy 45 Life2	7,180
Renault Zoe R903	22,190
Smart Fortwo Electric Drive4	19,420
Tesla Model S 75D	85,200
Tesla Model X 75D	92,050
Toyota Prius Plug-In Lounge	38,890
VW e-Golf	38,690
VW e-up!	27,190
VW Golf GTE	41,360
Audi A3 e-tron	41,270

Figure 3 illustrates the number of newly registered passenger BEVs for specific OEM models. Like in the previous years, Renault Zoe was the most popular electric vehicle in Austria.

21.5 Outlook

The “Förderpaket für Elektromobilität”, package of measures to support e-mobility will be continued in 2018.

Several funding programs provide a stable and lasting framework for e-mobility research innovation and demonstration projects.

Austria is also planning to further develop H2 infrastructure and is setting up a hydrogen flagship region which will demonstrate a feasible transition of the Austrian economy and energy production towards a hydrogen based energy system.