

Trump's US overtakes the EU in electric car race

March 2019

Summary

Latest electric passenger car sales data from 2018 shows that the US has overtaken Europe in the numbers of electric vehicles (EV¹) sold, by around 60,000 units. This is despite the EU being much more committed to climate action than the US where the Trump administration is dismantling much of the nation's climate laws.

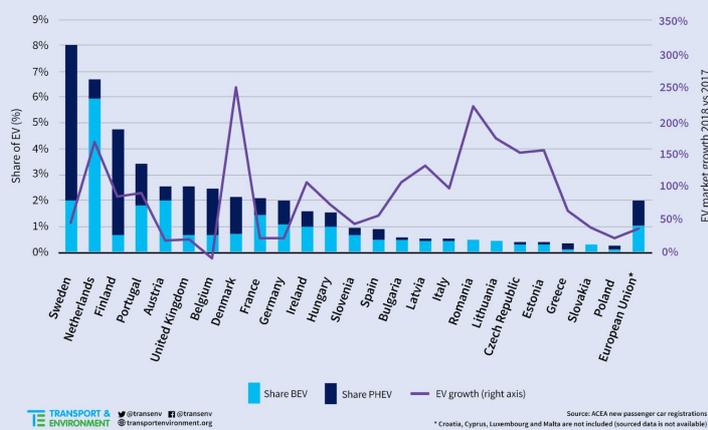
While in the US Tesla is driving the EV market to new highs, the EU EV market is driven by compliance. Sales are being suppressed in the run-up to the 2020/2021 CO2 emissions standard seen by model launch delays and long waiting times. The number of new zero-emission models on the European market will surge from 7 in 2018 to 20, 33, and 45 new models in 2019, 2020, and 2021 respectively.

This sales suppression is reinforced by the continuous protection of diesel sales and the withdrawal of some plug-in hybrids to upgrade them to comply with the new CO2 emissions test (WLTP). Europeans might have lost the 2018 battle but the race is still on. There are good signs that the market is maturing, with increasing diversity of models and shift towards a higher proportion of battery electric cars in the EV mix.

New ZEV models in Europe: steep increase from 2019 after 2018 sales suppression



2018 EV sales (EU): strong market growth reaching 2% share



For the first time the EU EV market reached 2% share, with the top markets being Sweden (8%), Netherlands (6.7%), Finland (4.7%) and Portugal (3.4%). An effective policy framework will help drive the market beyond compliance, including a smart reform of national vehicle taxation, faster roll-out of charging infrastructure in line with the sales growth, and robust industrial policy to ensure EU companies capture the entire EV and battery value chain.

¹ EV refers to all cars propelled by an electric motor, including battery electric (BEV), hydrogen fuel cell (FCEV), plug-in hybrid (PHEV) and range extender.

1. Electric vehicle sales in 2018: US vs EU

Latest electric passenger car sales data from 2018 shows that the US has overtaken Europe in the numbers of electric vehicles (EV²) sold. This is despite the EU being much more committed to climate action than **the US where the Trump administration is dismantling much of the nation's climate laws, including its clean car standards.** This briefing explores why Europe is lagging behind Trump America, and why Europeans carmakers are not selling EVs faster.

European and American car sales have been lagging behind China for years, which has surpassed the [4% EV share](#) mark in 2018 by selling more than [1 million units](#). Combined the EU and the US account for less than 700,000 new EVs sold in 2018.

Until 2017 the EU led the US with a higher share of EVs in 2017 (1.5% vs. 1.2%). But everything changed in the second half of 2018 as Figure 1 shows below. The surge (+ 120% Q4 YoY growth) in American EV sales meant the country has leapt in the second place globally. Totalling 361,000 units in the US (2.1% market share), Europeans saw growth (+33% Q4 YoY growth) but are now behind with 302,000 units (or a 2.0% market share). **To put into perspective, China's EV share in the last quarter was miles ahead with [7.3%](#) and [surpassed 150,000](#) EV units in December only (more than the EU or the US over the whole quarter).**

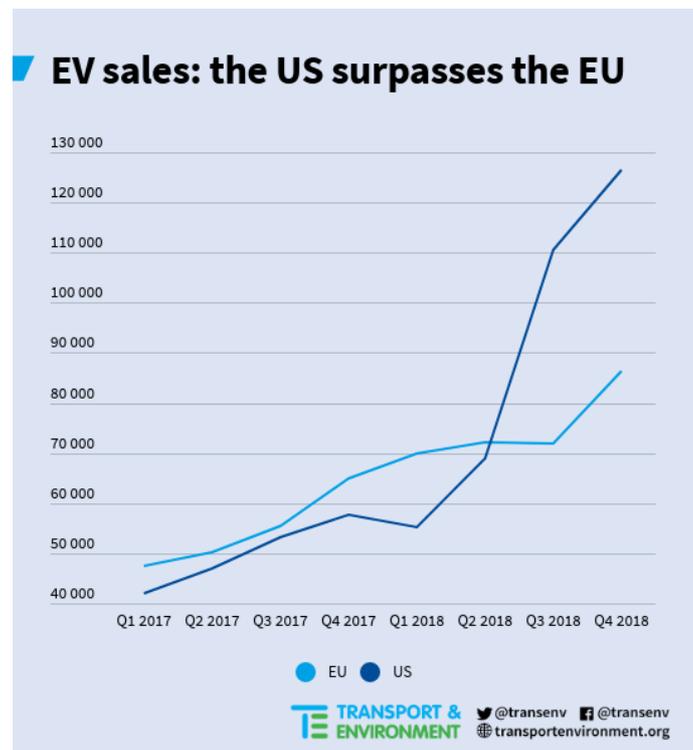


Figure 1: EV share of new sales in the EU and USA. Source: [ACEA](#) (EU) and [InsideEVs](#) (US)

² EV refers to all cars propelled by an electric motor, including battery electric (BEV), hydrogen fuel cell (FCEV), plug-in hybrid (PHEV) and range extender.

2. Tesla Model 3 in the US while European carmakers still suppressing sales

The US sales of Tesla Model 3 is one key part of the explanation. The new battery electric model is now the [top selling luxury car in the US](#) and became the [best-selling US car by revenue](#). In the last quarter of 2018, [68% of BEV sales in the US](#) were Model 3s (86% were Tesla), see Figure 2 below. The US EV market and in particular **Tesla's success** was provided for by the California Zero Emission Vehicle program, or the ZEV mandate, a robust zero emission vehicle regulation based on sales credits that enabled a solid EV market deployment for years and was extended to 9 other US states. Equally important **for Tesla's success** is the US \$7,500 tax credit, but it is being [halved in 2019](#) affecting Tesla and GM.

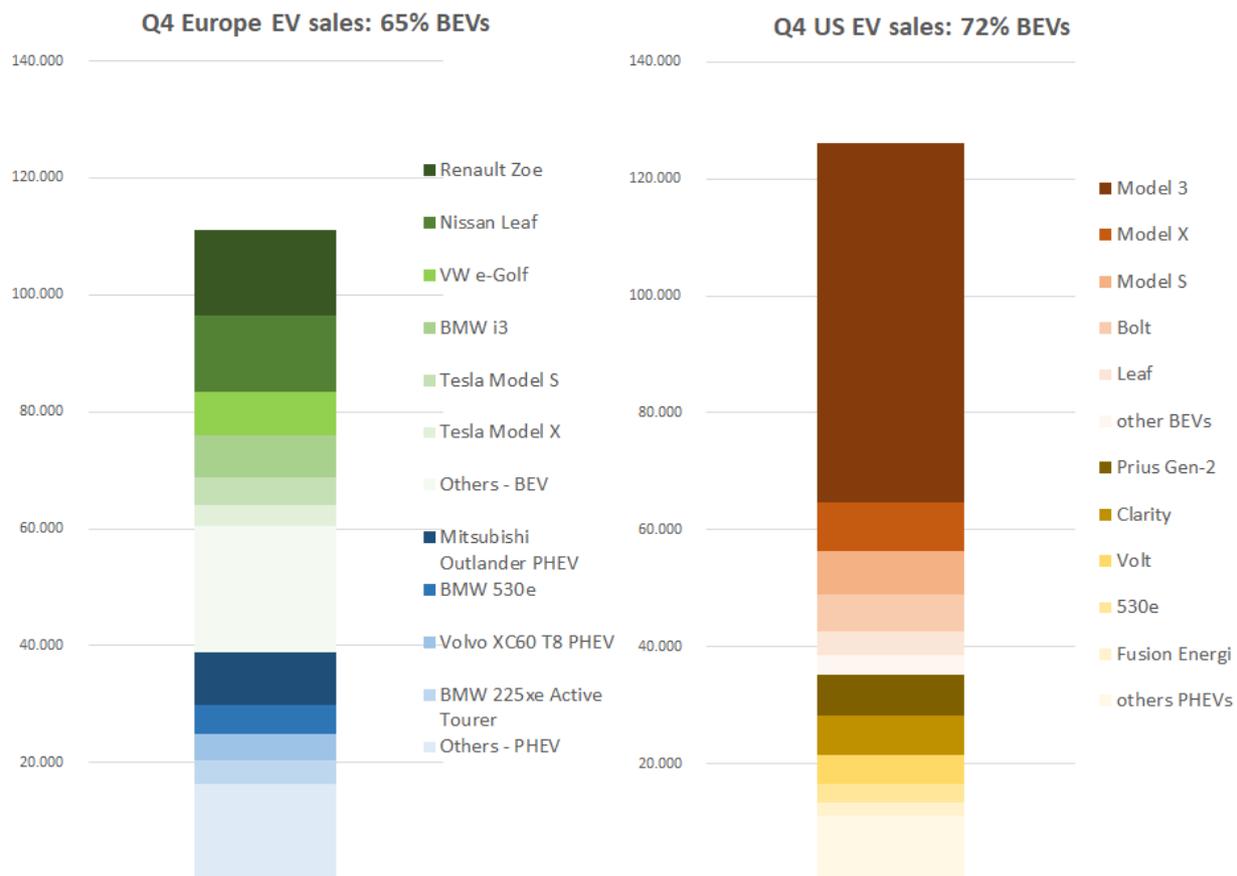


Figure 2: Q4 2018 EV sales: top 10 EV models (Source: ev-volumes, cleantechnica)

The EU market is still largely a compliance market. The cornerstone of EU's framework is the fleet-average 95g CO₂/km target for new car sales: carmakers need to be 95% compliant with the target in 2020 and fully compliant in 2021, but do not need to do much in the years before (beyond the 2015 target they all met years back). EU carmakers are currently suppressing EV car sales by including a limited model choice and availability, spending close to nothing on [EV marketing](#)³, relying on [dismissive and misinformative car dealerships](#), and using pricing to steer buyers towards other more profitable models (increasingly SUVs).

Whilst Tesla's production problems ("production hell") has been much discussed in media, there are numerous examples of European EV supply constraints, with two notable ones for BEVs being:

³ Carmakers only spend 1.5% of their advertising budgets on zero emission models, and 1.4% on plug-in hybrids, in the EU's five largest car markets, data from marketing analytics specialists Ebiquity shows.

1. The Audi all-electric E-tron, originally planned for 2018, has seen its first deliveries pushed to [March 2019](#)
2. Daimler CEO Dieter Zetsche announcement that the Mercedes EQC will [not meet demand in 2019 and probably not by 2020](#) (production is limited to keep [warranty costs](#) down and reduce the risk of warranty work).

The below table summarises the 2018 delays and waiting times on selected EV models in Europe:

BEV delays	
Audi e-tron	First deliveries in March 2019 (originally planned for 2018)
Mercedes EQC	Mercedes will not meet demand in 2019 and probably not in 2020 for EQC model as it will be delayed until late 2019 .
Jaguar I-pace	Jaguar I-Pace experiences delayed roll-out and is delivered in limited volume of vehicles during the first year in the German market.
Honda Urban EV	Delayed till 2020 (Planned launch in 2019)
Kia e-Niro	Deliveries of Kia e-Niro delayed due to shortages (deliveries originally planned for spring 2019)
Volkswagen e-UP	Disabled orders
Audi / Porsche PPE-platform	The launch of the first PPE-based electric models of both brands will probably be postponed by about half a year to spring 2022.
Volkswagen MEB platform	Delayed from end-2019 to 2020
Honda Kona	Delayed from February 2019 to 2020 in the UK.
PHEV delays	
Volkswagen Golf GTE and Passat GTE	Discontinued during Q3/Q4 2018 as emissions did not comply with the low emission vehicle threshold following the introduction of the new WLTP test (see more details below)
Porsche Panamera	
Mercedes S-class, E-class and C-class	
Audi A3 e-tron and Q7 e-tron	
Waiting times	
I-Pace	6 month waiting (10/18)
Nissan Leaf	6 month waiting (08/18)
Hyundai Kona	6 month waiting (08/18)

Kia e-Niro	At least 12 month from time of order (02/19)
Hyundai Ioniq 2019	Sales planned for September 2019 but waiting times up to a year
Nissan Leaf (Germany)	10 months
Peugeot iOn	Half a year (02/18)
Kia Soul EV	Half a year (02/18)
Renault (Germany)	4 months (02/18)
Volkswagen e-Up	5 - 6 months (02/18)
Volkswagen e-Golf	8 month (02/18)
Smart	1 year delay (02/18)

However, in the run-up to the 2020/21 targets, the number of new zero emission vehicles (BEVs and FCEVs) available in the European market is expected to surge from 2019 onwards. With only 7 new models in 2018 (less than the previous year), the ZEV market will rise with 20 new models being added in 2019, 33 in 2020 and 45 in 2021 as Figure 3 below shows. The EV market in the EU today is driven solely by the CO2 regulation, and OEMs follow the path of least cost and effort to be compliant.



Figure 3: New ZEV models in Europe (Source: IHS Markit)

Many European competitors to the Tesla all-electric models will also arrive on European market in 2019-2020 including Sweden-based Polestar 2, Mercedes EQC, Audi e-tron, Jaguar I-Pace, Porsche Taycan and Aston Martin Rapide E.

3. Why are EU carmakers suppressing sales?

Protection of diesel vehicle sales

If carmakers will have to sell EVs as of 2020, why are they limiting the EV sales before? Instead of ramping up electric vehicle production and adjusting their supply chains, European OEMs are shoring up the [slumping EU diesel market](#). EU carmakers have been historically [reluctant](#) to embrace the electrification revolution, having bet on the diesel technology instead. Diesel engines have been the cornerstone of their expertise and allowed them to have a competitive edge vis-à-vis US and Asian manufacturers.

In Europe, carmakers question the air quality science, the legality of diesel restrictions and seek to [postpone the introduction of stricter emission limits](#). This scaremongering is part of a wider strategy to postpone the transition away from diesel towards zero emission technology and protect diesel sales as recently admitted by Volkswagen CEO Herbert Diess in an interview with [Financial Times](#). Diess states that incumbent carmakers have to worry about their legacy business as they invest in EVs. [Electrek](#) rightly pointed out that carmakers are trying to manage the inevitable transition to electric by affecting their conventional technology business as little as possible. In other words they are slowing down the EV adoption.

The plug-in hybrid slump

Whilst PHEVs are a major part of EU carmakers plans for the future, there have also been major delays in rolling out due to the change in the EU emissions test cycle: the compliance models produced to get super-credits on the old NEDC emit more than the 50g/km threshold on the new WLTP cycle and thus will not qualify or help carmakers with CO₂ compliance in the coming years. So some models have been removed from the market as they require upgrades and re-homologation to comply with the new emissions rules, ready to be sold and gain credits later on. Due to this OEMs have stopped supplying many major PHEV models such as the Volkswagen Golf GTE and Passat GTE, the Porsche Panamera, the Mercedes GLC350e and C350e, the Audi A3 e-tron and Q7 e-tron. Volvo and BMW on the other hand have not discontinued the sales of their PHEVs even though some were rated above the 50 g/km threshold under WLTP.

In summary, EVs in Europe are compliance cars, and in the early 2020s we expect the EV sales to jump as carmakers will have to actively market and sell them to comply with the stricter regulations, such as the [recently agreed 2025/30 CO₂ standards](#) which has 15%/35% benchmark for zero and low emission vehicles sales in 2025 and 2030 respectively.

4. The race has only begun & the EU can still catch up

Europeans might have lost the 2018 battle, but the race is on. If we look at 2018 in more detail, we can see there is much potential for further growth. The EU EV car market grew by a solid 38% in 2018 (+53% for BEVs and +26% for PHEVs). Some markets have reached a 5% market share, including Sweden with an 8% EV share (boosted by new bonus-malus taxation in July), and the Netherlands with 6.7%, closely followed by Finland at 4.7%, and Portugal at 3.4% (see Figure 4 below). There is much potential for the 3 biggest car markets to reach similar levels in the next years: France and Germany barely hit the 2% mark while the UK reached 2.5% in 2018 (with only one quarter of BEVs due to badly designed incentives that have since been reformed).

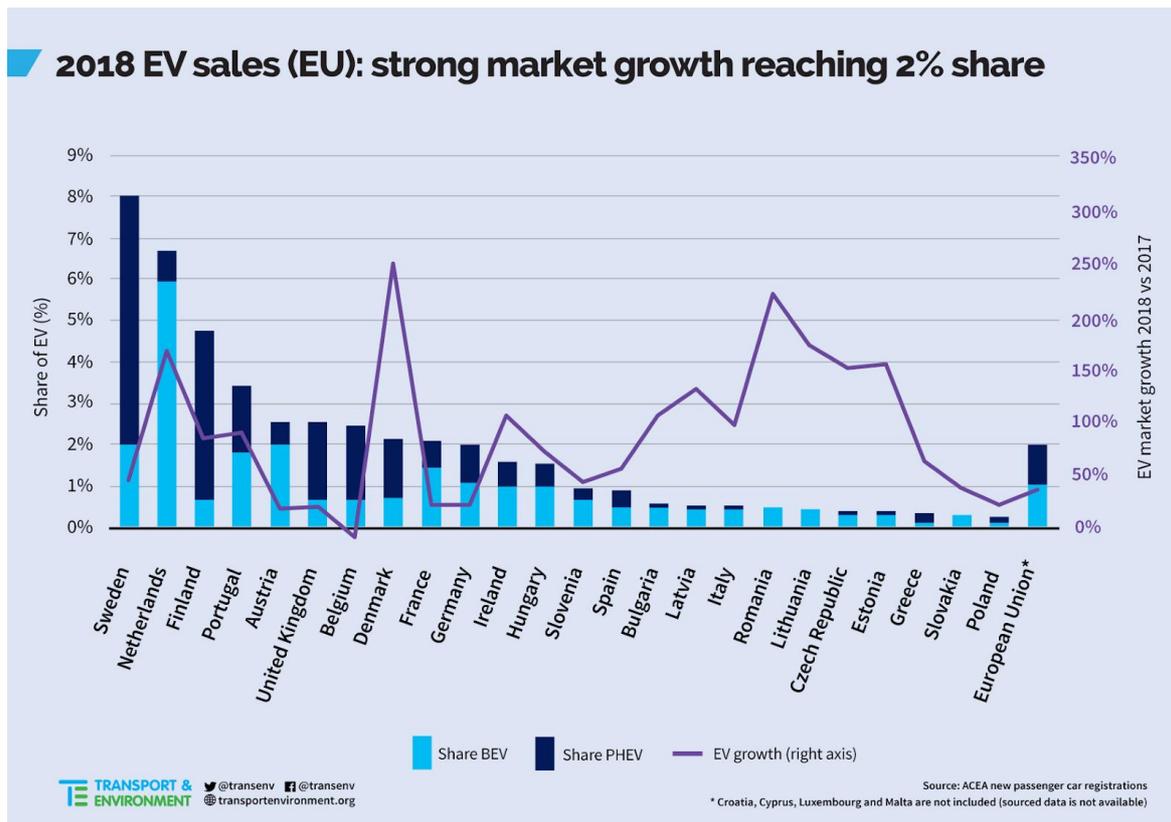


Figure 4: Share of EV sales and EV sales growth in 2018 (Source: ACEA)

The end of 2018 saw a particular rise in the sales of battery electric cars, making year 2019 particularly promising for EU BEV sales, as many EV markets are experiencing a steep uptake (the start of the typical s-curve for penetration of new technologies, see Figure 5 below). In the Netherlands, the share of BEVs as part of total sales reached 13.3% in the last quarter of 2018, and even [surpassed 30% in December!](#) In the EU, the BEV share was 1.6% in the last quarter of 2018, whereas it was only half that a year earlier.



Figure 5: Quarterly share of BEV sales in the 6 top BEV share markets (Source: ACEA)

Historically EU BEV sales have represented less than half of all EV sales but this also changed in Q4 as BEV accounted for 65% of EV sales: it seems the EU is shifting away from PHEVs and its traditional 55/45 PHEV/BEV split.

2019-2020 outlook

The European EV market is more diverse than the US market which is very dependent on Tesla sales (see Q4 in Figure 2 above). Without Tesla, Q4 EV sales in the US were less than 50,000 units while they were above 100,000 units in the Europe. Tesla Model 3 and the [14,000 reservations](#) (less than the number of Renault Zoe sold in Q4) held by Europeans will have a significant impact on sales growth. Particularly in countries with attractive company car schemes the Model 3 could have a major impact in the premium segment.

EU carmakers currently do not need to sell EVs, so they don't make an effort. On the other hand, as shown in figure 3, model availability will change radically from 2019-2020 onwards. This is because EU carmakers need to sell an estimated [5-7%](#) plug-in models to meet the 2021 CO2 standard. This means that the EU market is less likely to be as dependent on the Model 3 as the US market currently is.

The current technological changes and EV sales and production commitments are mainly driven by regulation and climate targets. In 2030, the CO2 standards in Europe alone will require more than a third of sales to be electric, whereas to meet 2050 climate goals, all sales would have to go [zero emission in the early 2030s](#). This is also why governments are trying to incentivise fully zero emission models, like battery electric cars, more.

Over the next couple of years, automakers will spend at least [\\$300 billion investment on EVs](#). This will transform the EV landscape. Radical technology advances will improve battery cost, performance, vehicle range and charging time. Volkswagen alone plans to invest \$91 billion and will develop a radically new MEB platform that will become the [building block for the 50 EV different models](#) carmaker promised by 2025 (and a wider industry standard potentially).

If the EV sales growth maintains a consistent 38% growth rate as seen in 2018, the EU market would reach 19% EV sales in 2025, surpass a third in 2027 and reach 50% of all new car sales in 2028. But given that 2018 was a slow year for OEMs, one could expect the annual growth to become even steeper in the coming years, accelerating the transition. The question is whether in the next years the European market will transition from a compliance market (driven by CO2 standards and incentives) to a self-sustaining and business-driven market. The evolution in China (state-backed EV industrialisation) and the US (Tesla-fueled growth) suggests the shift to a self-sustaining market will happen sooner than later. The key question therefore is whether EU carmakers (not just Volkswagen but also others such as Renault, PSA, Daimler, BMW and FCA) will be ready for a future that is fast approaching.

The best way for EU and national regulators to ensure the long term competitiveness of the EU automotive industry is through well-designed, consistent and ambitious policies focused on zero emission vehicles. This includes complementing the agreed CO2 standards with a smart reform of national vehicle taxation, faster roll-out of charging infrastructure in line with the sales growth, and robust industrial policy to ensure EU companies capture the entire EV and battery value chain.

Further information

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