



# COVID-19 TRANSPORT BRIEF

## Electric Mobility: Taking the Pulse in Times of Coronavirus

27 April 2020

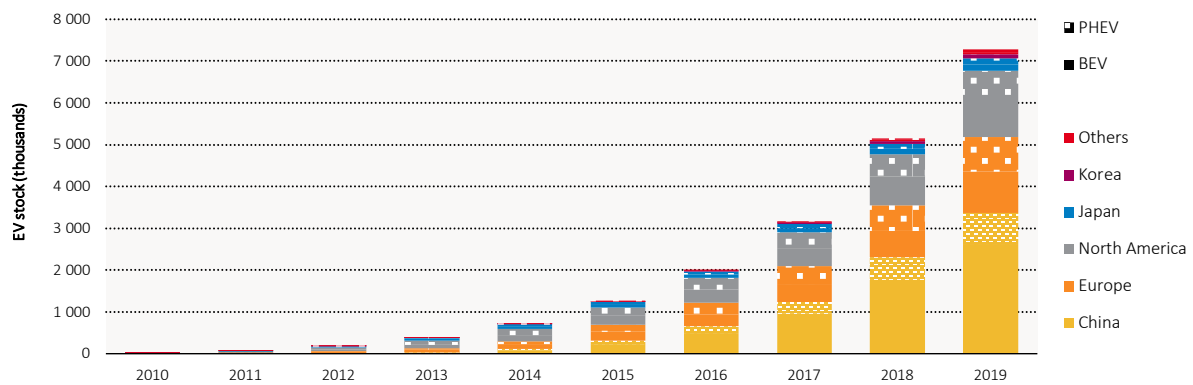
**The number of electric vehicles (EVs) on the world's roads continued to grow in 2019. Early data for 2020 show that they will not be exempt from the impact of Covid-19 on the automotive market. But fundamental drivers suggest that the longer-term outlook for the EV market is likely to remain positive – if clean mobility remains a policy priority and economic stimulus packages reflect the role of e-mobility as a driver of broader innovation.**

Consumers have adopted electric cars at a rapidly accelerating pace since the mid-2010s. By the end of 2019, the global electric car fleet exceeded 7.2 million units. This was up more than 40% on the previous year. Worldwide sales of electric vehicles in 2019 totalled 2.1 million units, above the record 2018 total. Figure 1 summarises the growth of the global electric car stock since 2010.

Behind this growth lies a mixed performance in different markets. In Europe, electric car sales increased, while they stagnated or declined in the other major markets. In China, the reduction of subsidies for electric vehicles in late June 2019 led to a decline in annual EV sales. Japan and the United States also saw fewer EV being sold. In all world regions, sales of battery electric vehicles (BEVs) exceeded those of plug-in hybrids (PHEVs). Figure 2 shows how sales of BEV and PHEV developed in major markets since 2015.

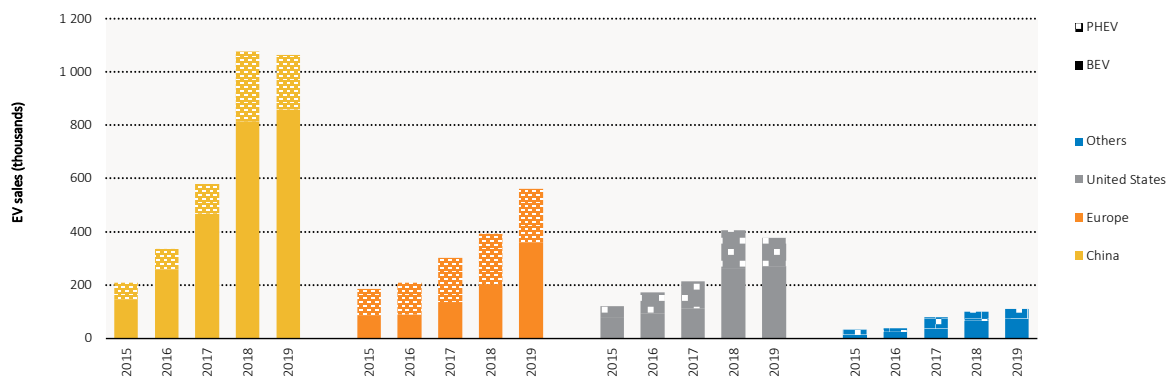
Transport electrification encompasses a wide variety of vehicles. These range from small personal mobility devices used for urban trips – such as three-wheelers, mopeds, kick-scooters and e-bikes – via electric cars to buses and delivery vans. More than 300 million electric two-wheelers roamed the world's roads in 2019. The number of electric buses in service approached 600 000, with new deliveries in 2019 close to 100 000 units.<sup>1</sup>

Figure 1: Global electric car stock by world region, 2010-19



ITF elaboration based on [CAAM \(2020a\)](#), [EAFO, 2020](#), [DOE EERE, 2020](#), [Pontes \(2020\)](#), [EV-Volumes \(2020\)](#), [MarkLines \(2020\)](#), [InsideEVs \(2020\)](#) and [IEA \(2019\)](#)

Figure 2: Global electric car sales by world region, 2010-19



ITF elaboration based on [CAAM \(2020a\)](#), [EAFO, 2020](#), [DOE EERE, 2020](#), [Pontes \(2020\)](#), [EV-Volumes \(2020\)](#), [MarkLines \(2020\)](#), [InsideEVs \(2020\)](#) and [IEA \(2019\)](#)

## Amid collapsing car sales, rising market shares for EVs

Covid-19 has led to a very significant decline in car registrations across all major automotive markets. Electric vehicles are not exempt from this but, so far, have been hit less severely.

In China, sharply reduced car production and sales are reported by the Chinese Association of Automobile Manufacturers (CAAM) for early 2020, with a decline for both of roughly 80% in February compared to the same month of 2019 and close to 50% in March.<sup>2</sup>

Similar drops were registered for Italy (a fall of 85% year-on-year in March), France (more than 70%) and Spain (almost 70%). In the United Kingdom, the car market contracted by 44% in March. It shrank by 38% in both Germany and the United States.<sup>3</sup> In Japan and Korea, the market contraction was comparatively small, with a drop of 10% for Japan and 15% for Korea (passenger car sales) in March 2020 compared to the same month of 2019.<sup>4</sup>

Against this backdrop, the market share of EVs has continued to grow in the first months of 2020, at least in Europe.

Sales of BEV in the United Kingdom almost tripled in March 2020 compared to one year earlier. In Italy, they increased by almost 50% and by almost 20% in France. The EV market in Spain contracted by 44%, but this was less than the overall car market.<sup>5</sup> In the United States, Tesla was estimated to see a 3% year-on-year sales increase.<sup>6</sup>

Plug-in hybrid vehicles also did comparatively well in the first months of 2020. In the United Kingdom, new PHEV registrations were up by 38% year-on-year in March. In Italy PHEV registrations fell by 16% and in Spain by 22%, but in both cases this was less than the overall car market.<sup>7</sup>

In China, the market dynamics were closer to the overall car market, with sales of BEVs falling by 75% and those of PHEVs 83% in February 2020.<sup>8</sup>

## What will be the near-term impacts on e-mobility?

The freeze on virtually all activities of the automotive industry, practical constraints on the access to car retailers and deferred purchases due to Covid-19 are already leading to lower production and falling sales across the whole car market. A contraction is inevitable also for EV sales in the short run, possibly even in terms of market shares. A number of factors could contribute to such a development:

- The implementation of regulations and policies aiming at transport decarbonisation may be delayed. This was suggested by European car industry associations in a letter to the European Commission on 25 March, while a coalition of companies, cities and civil society organisations opposed postponing implementation in a letter dated 16 April.<sup>9</sup>
- There may be greater constraints for consumers to borrow capital which may hamper electric car sales due to higher-than-average purchase prices. However, this effect may be small because EVs tend to fall into the premium market segments where capital-constrained customers are fewer.
- The recent fall in oil prices following the worldwide introduction of mobility restrictions (aggravated by a supply shock) lowers the total costs of driving of vehicles using petroleum fuels and makes electric vehicles less attractive.
- Car manufacturers may decide to delay or reduce investments that they had lined up to diversify the offer of EV models and meet the preferences of a broader range of consumers.

## Why the longer-term outlook for EVs remains positive

On the other hand, a number of factors that suggest the longer term outlook for the EV market can remain positive over the next decade and beyond:

- Opportunities for self-reinforcing cost reductions in EV production will persist. These result from increasing scale of battery production as well as battery technology improvements and will make it easier for BEVs and PHEVs to compete with vehicles using internal combustion engines in terms of total cost of ownership.

- Governments around the world are expressing their strong determination to insure citizens and businesses against the negative economic impacts of Covid-19, and to provide an economic stimulus to reverse the forced slowdown.
- The interest in, and need for, policy action on priority objectives such as mitigating climate change, improving local air quality, improving economic productivity and fostering industrial development will continue. These priorities require support for innovation, including industrial progress in the EV and battery value chains.
- Oil prices will progressively increase from their current levels as the global economy recovers from the Covid-19 shock, even if they could remain lower than before the pandemic.

## Implications for policy

Electric mobility requires rapid government interventions to provide insurance against Covid-19 risks to a variety of stakeholders. These range from large established corporations such as car manufacturers, public utilities and energy companies to small but often fast-growing companies without stable and substantial cash flows.

In the near term, sticking to policy requirements on clean mobility would help to reduce risks for investments into e-mobility that have already been made. Derogations would offer advantages for stakeholders that have not yet taken action. Should derogations be allowed, they should include guarantees that the requirements will be met in due course.

Economic stimulus packages geared towards decarbonising transport would benefit e-mobility and could help strengthen the pace of economic recovery over time. This is because e-mobility, like other energy efficiency improvements, can improve economic productivity by reducing the cost of travel and, in addition, be a driver of innovation. It is central for stimulating progress in battery technology, which has wider implications for the clean energy transition and, more broadly, the growth-enhancing impacts of self-reinforcing innovations.

Increased public debt as a result of stimulus programmes will likely mean that in the mid- to long-term polices will need to help recover government revenues, and not just fulfil policy goals like economic development and clean mobility. This may increase interest in taxing carbon-intensive fuels, implementing bonus/malus schemes that tax vehicles based on their environmental performance, as well as introducing distance-based charges for road use that are well-suited to manage a decline of fuel tax revenues resulting from the decarbonisation of transport.

<sup>1</sup> [IEA, 2019](#); [Businesswire, 2020](#); [EV-Volumes, 2020](#).

More detailed analysis will be available in the forthcoming *Global EV Outlook 2020* of the International Energy Agency.

<sup>2</sup> [CAAM, 2020b](#); [CAAM, 2020c](#).

<sup>3</sup> [UNRAE, 2020](#); [CCFA, 2020a](#); [CCFA, 2020b](#); [ANFAC, 2020](#); [VDA, 2020](#); [SMMT, 2020](#); [MarkLines, 2020a](#).

<sup>4</sup> [MarkLines, 2020b](#); [MarkLines, 2020c](#).

<sup>5</sup> [SMMT, 2020](#); [UNRAE, 2020](#); [CCFA, 2020b](#); [Automobile Magazine, 2020](#); [ANFAC, 2020](#).

<sup>6</sup> [MarkLines, 2020a](#).

<sup>7</sup> [SMMT, 2020](#); [UNRAE, 2020](#); [ANFAC, 2020](#).

<sup>8</sup> [CAAM, 2020b](#), [CAAM, 2020c](#).

<sup>9</sup> [ACEA, 2020](#); [AVERE, 2020](#).