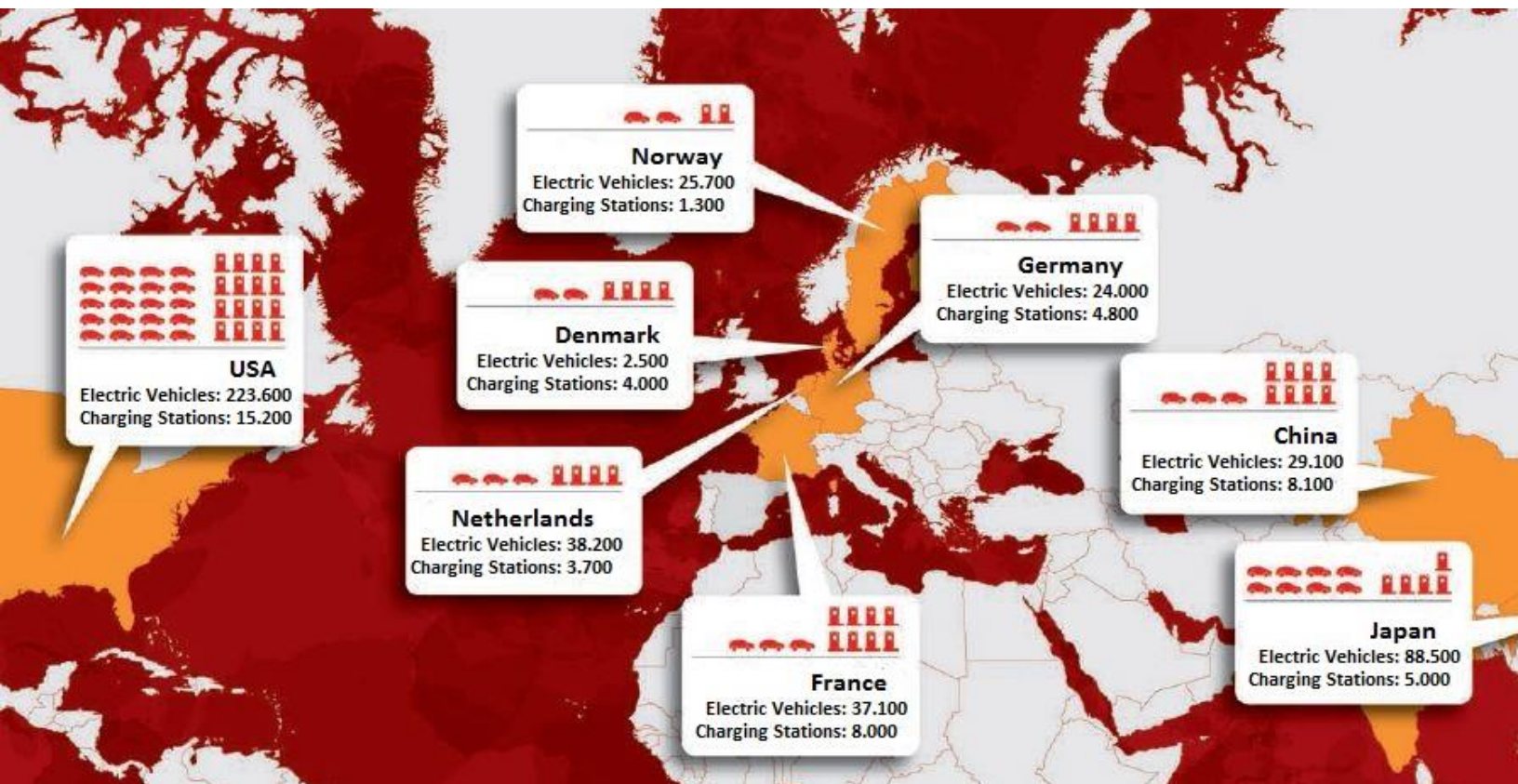


## The Future is electric - A Roadmap towards eMobility

Four years ago, the German government pledged the idea of bringing one million electric vehicles (EV) to the German roads by the year 2020. Today, approx. just 24.000 electric cars cruise the streets of Germany – a far cry from the ambitious goal once set. The recently published progress report of the *German National Platform for Electric Mobility (NPE)* was supposed to be a milestone. After all, the year 2014 marks the end of the first of three phases meant to blast Germany to the top of the global electric car market by 2020.



Source: Progress report 2014 German National Platform for Electric Mobility (NPE)

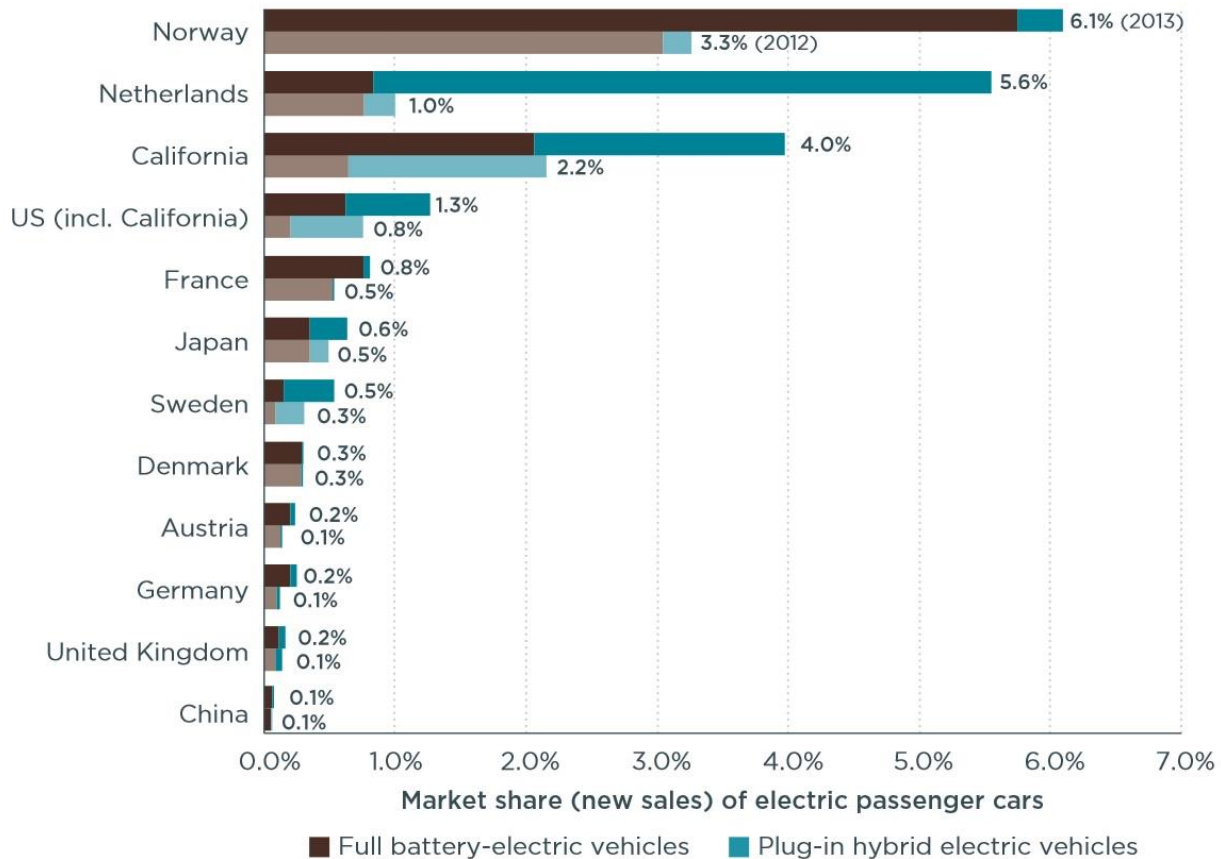
According to the NPE report, the so-called early "pre-market phase" has come at a steep price for both industry and the government. Over the past four years, German carmakers have pumped 17 billion (€) Euros into the development of electric mobility - backed by 1.5 billion (€) Euros worth of subsidies from the government. With quite some success: At the end of 2014, interested buyers could choose between 17 different EV models Made in Germany. In 2015, a dozen more are expected to hit the market. However, it's the current lack of proper infrastructure or sufficient driving range that gives experts headaches and put the brakes on EV

car sales in Germany. Above all, the report said, it's the lack of money saving incentives. Instead of calling for cash-back deals, the NPE urges tax breaks on company cars, allowing drivers to write off their electric vehicles.

### Comparison of incentives for electric vehicles

In May 2014 the ICCT (the International Council on Clean Transport) published a study – *Driving Electrification: A global comparison of fiscal policy for electric vehicles* – which evaluated the response to fiscal incentives that governments in major vehicle markets worldwide have deployed to promote plug-in electric vehicles.

The study assessed the difference between taxation costs for electric and ICE vehicles, as well as fuel and electricity prices to determine a total cost of ownership; then evaluated those incentives against the electric vehicle market share and growth in each sector to assess the impact of the different incentive programmes.



The graph above shows the market share of electric and plug-in vehicles in 11 major auto markets, and demonstrates how subsidies and incentives are encouraging EV and PHEV sales. The report highlighted the growth in Norway and the Netherlands as an indication of how national fiscal policy is working. In Norway the incentives for electric vehicles amount to approximately 55% of vehicle base price, which is considered a key contributor to the 6% market share of BEV's. The Netherlands incentives for PHEV's are equivalent to around 75% of vehicle base price, which is associated with the 5% market share of PHEV's, and the huge increase on 2012 figures.

The report also advocated a more comprehensive study to assess the full range of policy actions that have been implemented to accelerate the electric vehicle market. One which would investigate the impact of vehicle manufacturer policy (emission standards, electric vehicle requirements), infrastructure (residential equipment, public charging), electric utility actions (time of use charging), and other local policy (reduced rates for toll roads, preferential parking).

### **Norway**

Norway has been the leader in electric vehicle ownership over the last few years with a number of incentives helping to grow market share. In September 2014 electric vehicles accounted for 11% of all vehicle sales. Owners of electric vehicles in the country benefit from a number of different incentives, including permission to travel in bus lanes. EV's are exempt from high purchase tax rates and VAT, as well as road and ferry tolls and parking fees. They are also cheaper to insure and can be charged with free electricity from thousands of charging points.

These incentives have driven growth, but the market could be about to change as some incentives are due to be reconsidered or withdrawn in the next few years. The government has indicated that it will re-assess the incentives when 50,000 zero emission cars have been sold, or in 2018, whichever comes sooner.

### **UK**

The slow uptake of electric vehicles in the UK has led to the government extending its subsidy of £5000 on the purchase of an EV until at least 2017, or until 50,000 EV's have been sold. This is part of a wider initiative announced earlier this year which allocates £500 million of funding to encourage the uptake of low-emission vehicles.

Other initiatives in the scheme include £32 million of funding to improve the infrastructure for EV charging, and £4 million for the charging network for hybrid commercial vehicles. £100 million will be invested in the development of new technology, and £50 million has been

allocated for investment in cleaner taxis and buses. Local authorities have also been encouraged to offer incentives for drivers of electric vehicles, and a £35 million pot has been set aside for 'ultra-low carbon emissions car cities'.

The UK government has also announced a plan to lead by example by introducing electric and plug-in vehicles into government fleets. The £5 million Ultra Low Emissions Vehicle (ULEV) Readiness Project, will see over 150 plug-in vehicles added to government fleets in the first wave of the scheme.

## **China**

Earlier this year the Chinese government also indicated that it would take steps to slow down the reduction of government subsidies beyond 2015, and may add a further incentive to buying an EV by cutting or waiving the 10% purchase tax on new electric and plug-in hybrid vehicles.

The target for the Chinese government had been 500,000 electric vehicles on the road by 2015, but after five years of subsidies, there are currently only 70,000. Subsidies were due to be cut by 10% in 2014 and 20% in 2015, but the legislation was changed so that the incentives will only be cut by 5% and 10% respectively.

## **Energy turn and mobility turn must be thought of together**

The traffic sector in Germany is responsible for approx. 30 percent of final energy consumption. At 20 percent, the proportion of traffic in CO<sub>2</sub> emissions is also significant. If we also take into account traffic performance, which has been on the increase for years now, the figures demonstrate: The energy turn and the mobility turn must be thought of, and approached, together.

One important starting point for initiating the traffic turn successfully and sustainably is the successive electrification of the federal, state and municipal fleets. According to estimates, the procurement volume of the public sector is approx. EUR 480 billion per year. Politicians can use this to set target demand impulses for innovative and sustainable products and to smooth their path to the mass market. Currently, public fleets and car pools consist of approx. three million vehicles. If the public authorities were to shift to clean engines, this would set a visible signal for a sustainable New Mobility, which is ready for everyday use today.

The different government levels from the EU to the municipalities are by now striving to use legal provisions to create framework conditions, which simplify the procurement of alternative engine vehicles as additions to public car pools. With this, they aim to accelerate the development of a market for clean and energy-efficient vehicles.

In the end, such increases in sales might also lower the costs of the vehicles (economies of scale) and make them more financially attractive to a broader group of buyers.

The cities of Hamburg and Dortmund are the forerunners, having included an explanatory clause in their procurement guidelines, which favours the use of electric vehicles in service fleets. As a result, the procurement managers of these two cities must in the future set forth why a vehicle with a regular engine should be acquired instead of a low-emissions vehicle with an alternative engine. All costs incurred over the vehicle's entire life cycle (Total Cost-of-Ownership, TCO) - including operating costs - will be taken into account. Since it is significantly cheaper to run e.g. electric vehicles than conventional cars, the TCO analysis will easily come out in favour of an electric vehicle.

We can but hope that other municipalities and cities as well as the federal government will follow this example in the future and that in this way, low-emissions mobility will be able to establish itself in our public car pool.

**Sources:**

[http://www.bmub.bund.de/themen/luft-laerm-verkehr/verkehr/luft-verkehr-download/artikel/fortschrittsbericht-2014-bilanz-der-marktvorbereitung/?tx\\_ttnews\[backPid\]=708](http://www.bmub.bund.de/themen/luft-laerm-verkehr/verkehr/luft-verkehr-download/artikel/fortschrittsbericht-2014-bilanz-der-marktvorbereitung/?tx_ttnews[backPid]=708)  
<http://www.egvi.eu/about-the-egvi-ppp/presentation>  
<http://www.egvi.eu/uploads/Modules/Publications/ppp-egvi-roadmap-oct2013.pdf>  
<http://theicct.org/driving-electrification-global-comparison-fiscal-policy-electric-vehicles>  
<http://insideevs.com/>  
<https://www.gov.uk/government/news/electric-cars-for-all-government-fleets>  
<http://www.bloomberg.com/news/2014-04-02/china-considers-more-electric-car-incentives-vice-premier-says.html>  
<http://www.asianage.com/delhi/government-plans-25-50-subsidy-electric-cars-254>