



By: *Tomorrow's Affairs Staff*

An underdeveloped charging network might represent a bottleneck for the expected EV expansion



The commitment to replace internal combustion vehicles with electric vehicles happened relatively quickly in many countries.

The goals are ambitious and, in many ways, revolutionary. There is broad support from all actors - governments, manufacturers, and customers. The main steps towards road traffic decarbonisation, as one of the atmosphere pollutants, have already been made.

However, the focus on promoting and stimulating the production and sale of EVs puts infrastructure problems in the background, and raises a big question mark on the feasibility of ambitious plans for decarbonising road traffic.

According to current expectations, in a decade, EVs will make up about half of the total number of cars in the largest markets in Europe, or about 45% in the US.

Governments have enacted detailed incentive programmes for manufacturers and customers to reach this goal. Companies are joining with quite aggressive investment plans for the transition from traditional vehicles to EVs.

However, the state of the infrastructure, the network development, and the quality of EV charging points have been lagging behind the development of the "consumer" part of the traffic revolution, to the extent that they represent a threat to the set goals.

Poor infrastructure

It seems that the lack of chargers, their uneven distribution, and the absence of development strategies have not yet raised the alarm to the

extent they should have.

None of the Western EV markets has a quality EV charger network or efficient plans to overcome this problem, which in the very near future might become a bottleneck for the expected superiority of electric vehicles over traditional vehicles.

In a dozen of Europe's largest car markets, including Germany, the UK, and France, from 7 to 14 EVs use one public charge point.

The ratio is slightly less favourable in the US and Canada, with 13 and 17 EVs per public charging point respectively.

Given that this is ongoing and that in the next decade, even more exponential growth in EV sales is expected, this kind of infrastructure will hardly satisfy the projected market.

The share of EVs in the total number of cars sold on the European market is close to 15%. Their owners have been facing difficulties due to the insufficiently developed network of chargers, their capacity, and speed.

The EV transition requires many more chargers

The projected expectation that half of the cars in Europe in 2035 will be EVs is hard to achieve if there is no positive shift in infrastructure development soon.

One of the reasons for lethargy in this field is that EV users still predominantly charge their vehicles at home or in places where they stay longer, for example, near their work or restaurants and shopping centres.

However, along with the growth in EVs' popularity and sale, the desire of owners to spend as little time as possible charging their vehicles, and travel longer distances, will increase.

In line with the expected EV sales growth, S&P Global Mobility estimates that it will be necessary to quadruple the number of EV chargers in the US by 2025, and by 2030 their number will be as much as eight times higher.

"The transition to a vehicle market dominated with electric vehicles (EVs) will take years to fully develop, but it has begun. With the transition comes a need to evolve the public vehicle charging network, and today's charging infrastructure is insufficient to support a drastic increase in the number of EVs in operation", said Ian McIlravey, S&P Global Mobility analyst.

Incentive packages in European countries mainly refer to installations in houses, communal buildings, settlements, and business facilities.

As part of the 2021 Infrastructure Law, the US federal government approved a five-year package of \$7.5 billion for public charge points installation.

The plan is to spend two-thirds of the money installing highway chargers every 50 miles and \$2.5 billion on other community charging sites.

Still cheaper to charge at home

This package will no doubt alleviate the poor infrastructure in the US, but it will not solve other significant problems in the EV race.

First of all, the price of the electricity used will

remain many times lower when the EV is charged at home than in a public place.

EV owners will prefer to charge their cars at home, for \$10 on average, even with the improved network of chargers and slower, than at a public charge point for \$20 to 30.

Those who see the solution in expanding the fast-chargers network as a way for customers to turn to charging vehicles in public places and increase their mobility face other problems.

The more extensive use of fast chargers has been limited by high installation costs. Higher power consumption requires special equipment, greater demands on power distributors, and special permits.

Their use is tied to the technological improvement of car batteries, which is still not fast enough to keep up with the expected demand.

From the current great enthusiasm, the EV revolution might slow down if the owners are left without a space to recharge their vehicles and enough time to wait for their "tank" to fill up.

Efforts to improve infrastructure exist but are nowhere near keeping up with EV production and sales.

Also, most incentives to install chargers still come mostly from governments and public funds, much less from the private sector, whether from car manufacturers or energy companies.

Whether the projected goals for EV dominance in the next decade will be achieved at all depends on their greater involvement in

expanding the network and improving the quality of EV charging.