Electric cars: Current trends make for a shocking change

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While vehicle manufacturers invest in research, authorities are working to improve charging infrastructure to support consumers' growing interest in the sector. The day when electric cars dominate the passenger transport market no longer seems quite so distant.

Electric cars are rapidly moving from the periphery of the automotive

sector in the European Union to the mainstream. The sales figures alone across Europe do not necessarily justify such a bold claim, given that within the overall market, fully-electric vehicles (known as BEVs, or battery-electric vehicles) account for around 1.7 per cent of all passenger vehicles sold. But as the EU looks towards a carbon-neutral future based on green energy and zero emissions, BEVs are undoubtedly integral to the debate around Europe's automotive future.

While that figure of 1.7 per cent may appear irrelevant, the 21,000 BEVs sold across the EU in January 2019 represent a year-on-year increase of 67 per cent, according to a report by CleanTechnica.com. Fully-electric vehicles are also surging ahead of plug-in hybrids in popularity, with figures from the same month showing that BEVs now account for almost two-thirds of all plug-in vehicles sold in the EU.

With various national incentive schemes promoting the acquisition of zero-emissions vehicles, consumers can make informed choices about the economic advantages of going all-electric. However, support from the EU, through an integrated policy framework across transport, the environment, infrastructure and regional policy, will be essential if electric vehicles are to continue their impressive growth in the market. Giuseppe Fabri from the Department of Industrial and Information and Engineering and Economics at the University of L'Aquila in Italy, says that the future of passenger transport is inevitably fully electric: "The trend is to design fully electric cars, no longer hybrids that are still tied to fossil fuels. Many car manufacturers are thinking of producing cars in the next five-seven years that are fully electric."

"But the main problem today is the charging infrastructure, because if you want to go today between Rome and Milan with an electric car it's not possible. You have to stop after 300 km to recharge the car." He adds: "In parallel with research, we need to invest in infrastructure and create fast charging systems in cities, as Norway and the Scandinavian

countries are doing today."

In fact, a study by Transport & Environment points out the disparity between northern and western Europe, where charging infrastructure is more sophisticated and more widely available than in southern and eastern Europe.

A pan-European network of charging points for BEVs is taking shape, with around five vehicles on the road for every public charging station, but the study also suggests that only five per cent of vehicle charging takes place at such points, with most charging happening privately, in people's homes or workplaces.

The urgent need to address the dangers and consequences of climate change is a principal driver of change and innovation in the electric vehicle sector. The EU has set an ambitious target to reduce CO_2 emissions from transport by 60 per cent by 2050 compared to 1990 levels. The regulatory framework at European level is designed to ensure a progressive, steady and predictable transition towards a future in which electric vehicles predominate.
EU member states are reinforcing this trend with their own policies: Sweden, the Netherlands, Ireland, France and Denmark have all pledged to ban sales of new petrol- and diesel-powered vehicles by 2030, and in France all cars powered by internal combustion engines will be banned from the roads by 2040. Regions and cities across Europe are also taking initiatives where they have the power to do so, with Brussels itself introducing rules banning diesel-powered cars from circulating after 2030.

Car manufacturers are investing in developing new electric cars, but the EU is supporting this innovation, funding 165 related projects since 2009. More recently, the European Green Vehicles Initiative is tackling the challenge of decarbonisation of road transport, and contributing to

the transition to greener road transport, while boosting the competitiveness of the European economy.

Ultimately, electric cars are going to be successful if they appeal to the consumer from a visual and performance point of view. And manufacturers are only going to develop such a broad range of vehicles if they know these vehicles have the technical reliability to deliver.

In this context, the EU project DriveMode is developing the next-generation of electric drivetrains to suit different types of electric and hybrid cars. Jens Müller, research and development manager of Semikron, is part of the consortium. He told us that through the kind of technological innovation being pioneered by the project, manufacturers will have more options at their disposal to respond to consumers' varying expectations, fostering choice in the e-vehicle market by widening the technical possibilities as much as possible.

The company is very active in the Chinese market, Mr Müller said. "We have a comparable project that is running in 50,000 units, mainly light buses in China, and we think that the European and also non-European markets will strongly benefit from technologies such as the one developed under DriveMode".

Furthermore, Lucie Beaumel, of the European Green Vehicle Association, explains that "currently, EU research projects are not only contributing to develop prototypes, but also to improving the techniques of electric car and plug-in hybrid production, so the effect of innovation is multiplied." Researchers and representatives from the car manufacturers will gather in Brussels in December 2019 at a conference organised by the Association to discuss innovations ways to shape European policy on improving road transport.

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