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PASSENGER ELECTRIC MOBILITY. THE BASQUE COUNTRY CASE

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The mobility sector is at a turning point towards a sustainable model. Electric vehicles are set to play a key role in this evolution, facilitating the link between electric and transport systems for goods and people, thanks to intelligent and bidirectional charging (V2G, V2H and V2B).

The use of electric vehicles is still in the minority, but it is being strongly promoted by different factors such as:

- the increasing maturity of associated technologies such as batteries and charging points;
- trends in mobility, which promote the entry of new players and innovation in new business models;
- the government's drive to reduce urban pollution and meet climate change commitments.

In the field of private mobility, although globally there are different speeds of adoption of more sustainable vehicles and medium-term promotion strategies that include other alternatives such as hydrogen or light hybridisation, there is a much stronger commitment to electrification than in the last decade. Although electric mobility is usually associated with the urban environment, **the trend in the automotive industry is towards models with longer ranges that cover all the uses of a conventional passenger car.** This requires, on the one hand, promoting and speeding up the deployment of charging points throughout the territory, a process that will be further strengthened in the coming years and, on the other hand, that most vehicles increase their charging power to that of the most technologically advanced charging points.

The technological improvement of electric vehicles, mainly to increase vehicle range and charging power, is not sufficient in itself to achieve mobility decarbonisation goals. The various charging modes required by users should be covered (connected, opportunity and fast) to promote the manufacture and purchase of low-emission vehicles, and to promote affordable electricity prices. New trends in mobility such as connectivity, autonomous mobility, sharing and intermodality should also be encouraged. Both the entry of new actors, mainly from the digital sphere and non-technological innovation, will be key for these trends to translate into improvements in the territory's competitiveness and new business models for its businesses.

These changes come at a time when **competition in the mobility sector is increasing** due to factors such as the entry of new vehicle manufacturers (OEMs) from Southeast Asia, as well as electric and digital actors. To increase the value generated, vehicle manufacturers are embracing areas traditionally outside their scope such as energy supply (charging points) or component manufacturing (battery cells). This will put pressure on the ancillary industry and open up new business opportunities, such as those linked to sustainability throughout the value chain.

At the policy level, **the promotion of electric mobility is a challenge because of the need for collaboration between multiple actors at different levels.** Firstly, it poses challenges for co-governance between institutions and administrations, which is essential to reduce administrative obstacles and coordinate measures that promote the mass use of sustainable transport. It is also necessary to combine the different forms of mobility to meet citizens' needs while promoting a healthy environment. Secondly, challenges are arising from the potential of public-private collaboration, which affects areas such as the deployment and reinforcement of the infrastructure required for electric mobility, and in supporting the competitiveness of

the entire sustainable mobility value chain, which includes new areas such as batteries, charging points and the digital industry.

This collaboration should lead to a **new paradigm for future sustainable mobility**, which has **yet to be defined**. The use of different modes of transport and the viability of new business models will depend on the characteristics of the population and the mobility policies promoted by local and regional authorities, as well as the evolution of technology itself. In the case of electric vehicles, this will impact aspects such as charging modes and majority ownership models.

The Basque Country case

The Basque Country occupies an intermediate position within Spain in terms of promoting electric mobility and a low position concerning Europe. Although it is a pioneering region in aspects such as charging infrastructure and the installation of ultra-fast chargers, there are few users of electric vehicles in comparison with other regions of similar per capita income in Spain, such as Madrid or Catalonia, whose percentage of electric cars in their vehicle fleet (0.6% and 0.2%, respectively) is much higher than that of the Basque Country (0.1%). In Europe, countries such as Germany (1.4%) and France (1.0%) have respectively tripled and almost doubled the share of electric vehicles in their fleets in the last year.

Achieving the targets for reducing CO2 emissions and pollutants from transport **will require accelerating the development of electric mobility**. In the short term, **European and Spanish regulations and standards will contribute to boosting the decarbonisation of mobility through emission limits for manufacturers, low-emission zones and the obligation to install charging points at service stations**. In the medium to long term, **harnessing the value of electric vehicles as a distributed energy resource will be the main challenge for their competitiveness in the face of new low-carbon mobility options that emerge from technological progress**.

The significant investments and the change in the mobility model that will be required by the electrification of transport represent an opportunity for the industry in the Basque Country. The regional value chain is very complete, as it comprises benchmark energy companies, vehicle manufacturers, auxiliary industry and technology centres, and its innovative and commercial capacity in technological products and services (mobility, electricity, electronics, autonomous vehicles and storage, among others) will be reinforced with the increased use of electric vehicles and their infrastructure. The passage of two major routes of the European Road Network through the Basque Country, its location on the border between Spain and France, and its high population density in the territory will boost the profitability of these investments.

To estimate the electric vehicle charging infrastructure needed in the Basque Country in the 2030 horizon, Orkestra has followed a methodology that distinguishes between urban and interurban areas. According to the latter, at an urban level, the distribution of the population should be considered in the deployment of fast charging points, and the region should be incorporated as a reference unit to achieve a ratio similar to the French reference case. The model shows that 89% of the population can be covered with only 120 charging points. At an intercity level, the installation of 8 to 10 ultra-fast charging points strategically located on major motorways and highways would reinforce the inter-city network. In any case, **effective deployment of electric mobility will be the result of a combination of solutions** that cater to users without their own parking (linked charging), business models around opportunity charging in the service sector and complementarity with shared mobility and intermodality.



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