Electric mobility is more than electric cars: it is a cross-sectoral fundamental innovation

The topic of e-mobility is without doubt becoming a subject that cannot be ignored when addressing the topic of sustainable ways of transportation. Benefits range from more efficient engines to the reduction of noise and emissions - at least locally and especially if the electricity has been generated from renewable energy sources (RES). Depending on the type of e-mobility, there are other advantages to be considered too, because we are not only talking about electric cars: there are many other types of vehicles that can benefit from being powered by electric engines, i.e. buses, bikes, trucks, trams, trains etc.

As a matter of fact, electric bikes already have a huge market share in many EU countries. The Netherlands and Germany are among the leading countries in e-bike sales. One of the main benefits of the e-bikes is the increase of the accepted distance of traveling. With ordinary bikes, a 3-5 km distance is accepted as reasonable for a home-work or home-school itinerary; with e-bikes that figure can be doubled, meaning consequently that cycling will be used as a means of transportation by many more people. If solutions for intermodality are found - such as bike sharing systems, bike garages etc - there are even greater possibilities here.

As far as e-cars are concerned, the range anxiety that for a long time has been in the center of the discussion - especially when it comes to the battery electric vehicles (BEV) - will soon be history: in fact, new BEVs are now introduced with realistic ranges of around 400 km when fully charged. For most people this will be enough for almost all travels. Concerning hybrid electric vehicles, this range anxiety was never really a case. For the few travels that are more demanding, the problem can be solved by a temporary change of car. This in turn could be accomplished by different kinds of car sharing systems.

The charging infrastructure must be considered for all kinds of e-mobility, this has to be taken care of in urban planning processes, e.g. in the form of a Sustainable Urban Mobility Plan (SUMP). Normally, charging bikes and cars takes place at home for those living in houses of their own, but if one lives in an apartment the situation is quite different. And if the sales of electric cars continue to go up, this aspect of e-mobility will be a common concern. SUMPs will probably have to be combined with specific e-mobility strategies to find long-term sustainable solutions.

Already today, looking at the market share of new cars, electric cars (BEV and hybrid cars) are close to 25% in Norway – a country where a lot of resources have been put into charging infrastructure and other incentives for promoting e-mobility. The Norwegian example shows that these levels are possible to reach, if you have a strategy for it.

A study in Sweden has shown that in order to reach a fossil fuel independent vehicle fleet in 2030, approximately 20% of all cars should be electric. As can be understood, there is also a need for other fuels in order to reach fossil fuel independency, e.g. biomethane. In yet another study conducted at Blekinge Institute of Technology in Sweden, it has been shown that electric buses today are the economically best alternatives when incorporating all aspects.

Hence, there is very little to wait for now, facts are pointing to the direction of e-mobility. Many EU-funded initiatives in which FEDARENE members engage in look at this direction.

Ulf HANSSON
Director of Energikontor Sydost
Vice-president for Mobility and Transport of FEDARENE
Karima Delli is a French Member of the European Parliament for the Greens/EFA Group since 2009 – President of the Transport & Tourism Commission within the Parliament since January 2017. She was Rapporteur about Sustainable Urban Mobility in 2015.

Despite the European Union’s ambitious targets to fight climate change, greenhouse gas emissions from the transport sector keep growing.

Unlike agriculture, they grew by 28 % in the EU between 1990 and 2007. If we want to reach our emission reduction targets for 2050, a shift towards a sustainable transport system must be a top priority for the EU. In this regard, electric vehicles can be part of the solution.

In a sector that is still quite dependent on oil, electricity can play a major role in improving its energy efficiency, as part of a holistic, systemic approach to sustainable transport and energy sectors.

Likewise, can electric mobility solve the issues related to energy consumption? A shift from liquid fuels to electricity will be necessary, accompanied with the development of sustainable second generation biofuels, which do not use food or feed as their raw material. But as the energy consumed should be both sustainable and renewable, building a mobility solely upon nuclear energy cannot therefore be part of a truly sustainable economy.

Another issue with electric vehicles is their lifecycle impact. Especially in the batteries, prevalent technologies have so far used rare materials that are often mined under extremely problematic circumstances for the environment. Research & Development investments in battery technologies are hence needed to ensure the achievement of the sustainability of batteries in the near future.

In a sector that is still quite dependent on oil, electricity can play a major role in improving its energy efficiency, as part of a holistic, systemic approach to sustainable transport and energy sectors.

New circumstances imply that we need to make sure its energy efficiency can be optimized via a decrease of private cars, encouraging public transport, car-sharing or e-bikes.

According to the different nature of these regions, the challenges differ: in rural areas there is less public transport and it is becoming more and more difficult to operate it economically. In suburban areas, densely populated regions, surrounding by the capital Vienna and around, medium sized villages which spread across the country.

E-CARSHARING IN AUSTRIA – A SUCCESS STORY

Lower Austria is the largest province in Austria and is characterised by a diverse geographical structure: on the one hand there are rural areas, mainly at the border regions to Slovakia and the Czech Republic. On the other hand there are suburban, densely populated regions, surrounding by the capital Vienna and around, medium sized villages which spread across the country.

According to the different nature of these regions, the challenges differ: in rural areas there is less public transport and it is becoming more and more difficult to operate it economically. In suburban areas, motorised road transport is increasing causing also an increase of CO2 emissions, noise etc. Therefore the extensive experience of eNu – energy and environment agency of Lower Austria shows that e-carsharing works in both cases: in rural areas, it offers a cost-effective mobility alternative for people with reduced mobility offers. In suburban areas, e-carsharing offers the “second car” (...)

About the electric vehicles: The electric vehicles charging infrastructure in Catalonia

The analysis of governmental policies of different leading countries in electric-mobility shows without doubt that there is a direct relation between the availability of a public and private electrical vehicles (EV) charging network and the percentage of EV in the car fleet renewal.

In this framework, in June 2016, the Catalan Government approved the Plan for the Deployment of Electrical Vehicle Charging Infrastructure for the period 2016-2019, with the aim of turning Catalonia into an attractive region for the electric-mobility by ensuring the energy supply to the EV that travel around the Catalan road network.

To guaranty the EV energy supply the Plan defines a pyramidal charging network. The base of the pyramid consists of low power charging points associated to private EV, mainly at home. In the centre of the pyramid there are the medium power semi-fast charging points, which will allow lengthening medium routes. These charging points will be located mainly in commercial establishments, leisure areas and health facilities and also in urban areas. On the top of this pyramid there are the strategic fast charging points: it is a high cost network needed to assure high power charging and allow simultaneous charging of different vehicles.

The specific goals of this pyramidal charging network are:

- 100 open fast charging points (power >45 kW)
- 400 open semi-fast charging points (power >7.5 kW)
- 25,000 charging points associated to private EV

The Electric Vehicles Charging Infrastructure in Catalonia

The Government of Catalonia is working in the definition of a new energy model based on energy efficiency and renewable energies.

Nowadays there is no doubt that the penetration of electro-mobility is destined to be the cornerstone at global level to face the extreme energy dependency on oil, to reduce the greenhouse gas emissions and, last but not least, to give a response to the high levels of local air pollution existing in much of urban agglomerations.

Massive RES penetration in the transport sector will be possible only by its progressive electrification. Electro-mobility will reinforce the role of distributed generation by means of electricity storage with batteries, favour RES self-consumption with V2H (vehicle to home) or V2G (vehicle to grid) technologies and accelerates the necessary development of electricity distribution smart grids.
The Roger Léron Award aims to acknowledge impressive contributions from an individual to sustainable energy at the regional and/or local level in Europe (not a single project).

Indeed, regional and local levels of governance play a central role in energy and climate issues, through their responsibility for many policy areas (energy, transport, housing,…), their proximity to citizens, their thorough knowledge of the territory, and their greater flexibility than national governments. Their concrete contributions on the ground are adding up to reduce Europe’s dependence on foreign energy, ensure Europe’s security of energy supply, and prevent further impact on our climate.

The winner will receive the trophy at a ceremony in Brussels. We invite you to have a look at the nomination form for the Roger Léron Award.

The Award is named in memory of Roger Léron, a pioneer of regional energy development in Europe and one of the FEDARENE founders who also served as its president for over a decade (1995-2007). Deeply rooted in local and regional development, he had a far-reaching vision for greater European sustainability.

Download our communication kit.