CONFRONTATIONS EUROPE

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SEMINAR

ELECTRO-MOBILITY AND THE ELECTRICITY SECTOR: CHALLENGES AND SOLUTIONS

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The present note summarises the contributions of the four panellists:

- **Axel VOLKERY**, Policy Coordinator Clean Transport, DG MOVE, European Commission
- **Antoine ASLANIDES**, Director of Innovation, EDF
- **Marie-France VAN DER VALK**, Head of Alliance Renault-Nissan Brussels Office
- **Dimitri VERGNE**, Senior Sustainable Transport Officer, BEUC

Michel CRUCIANI, Climate and Energy Adviser for Confrontations Europe, was moderator of the discussions.

THE VIEWS OF THE EUROPEAN COMMISSION

Additional efforts should be targeted at expanding market offer for electric vehicles

The Three Mobility Packages aim at reducing emissions in transport. In 2016, the European Commission had clearly prioritised three areas of action with its Clean Mobility Strategy: the overall efficiency of the transport system, the uptake of low emission alternative energies, and the uptake of low emissions vehicles. As transportation is multi-modal, different transportation modes are in the centre of the strategy, not only passenger vehicles. Developing electro-mobility is therefore key in reducing emissions in transport. However, in this perspective, the Commission stresses that it equally supports other alternative fuels in order to make use of all the levers at disposal to make transports cleaner.

Electromobility is an interplay of electric vehicles (EV), energy and mobility services and infrastructures. These three elements, from a policy point of view, are at different levels of maturity, with different stages of the policy-making process reached. Even though Member States should step up their efforts in deploying additional alternative fuels infrastructures, there is in Europe a sufficient number of EV charging points compared to the number of EVs on the road. However, the market offer needs to expand with a broader range of vehicles available to consumers, to deal with the uptake of electro-mobility. This is a more pressing need than building additional infrastructures: as competition is fierce, the lack of reaction increases the risk of having the market share taken over by non-European actors. EV development and charging infrastructures deployment need to go hand to hand.

Regarding potential services linked to the deployment of electromobility, it is necessary to examine the whole value chain, customers, price information, payment system etc. This remains an emerging market to be tested; it is therefore crucial to make sure consumers are provided with correct information and data on the location and availability of the infrastructures. The lack of correct information constitutes a big barrier for the take up of EVs. In this perspective, the new Europe Facility Initiative is trying to develop solutions aimed at improving the information availability to consumers (for instance mapping of charging points etc.). Discussions with Member States are continuous in order to exchange practices, to establish a common classification of infrastructure, and perhaps setting up a common identification system for users.

A key element of the European Commission's approach on interoperability is to ease roaming for e-mobility. This consideration goes even further than the transport sector: smart charging for instance is a very important component to increase flexibility, as it requires dynamic pricing. Here some constraints exist with fixed tariffs in some Member States, whose social benefit will have to be assessed. It favours the emergence of business models that reward consumers for recharging at certain times. As it is an emerging market, we need to ensure we are organizing it in a competitive manner. The Commission wants access for all consumers, and reckons that the infrastructures should be accessible to all players, European and non-European actors. This will require full transparency in pricing.

It is also clear that the sustainability of the value chain has to be carefully assessed to ensure that we do not trade Europe's oil dependency with another type of dependency. However, one can be optimistic on this, for the new generation of batteries is very promising. What will matter the most is not so much the cost of batteries, but much more the governance of the grid and how it will be organised. Finally, long distance and urban relations require more attention. Market has taken up the challenge in long distance with fast charging and ultra-fast charging is arriving soon. However, the main issues remain in rural areas.

THE PERSPECTIVE OF EUROPEAN CONSUMERS

Key conditions remain to be fulfilled to make sure consumers understand the benefits of electromobility

Decarbonisation and electrification of transport is beneficial for the environment, climate, our health, and is potentially good for consumer's purchasing power. A study realised by the BEUC on the costs of rolling out electromobility for consumers, taking into account all the dimensions (purchase, managing, residual value etc.) over a 4 years period, revealed that by 2024 the costs of EVs could match the costs of petrol-fuelled cars (without taking incentives into account). It therefore makes good sense for consumers to move progressively to EVs.

Moreover, there are consequent potential additional benefits linked to new energy services brought by EVs. For a sustainable transition, we need to move towards smart charging and Vehicle-to-Grid to make sure that we do not overload the grid. From a consumer point of view, using the car as a balancing tool or a storage unit could bring great benefits, estimated to several hundred euros a year.

However, a lot remains to be done on the policy-making level to make sure this transition happens. Two main points need close attention: the availability of EVs, and making sure that consumers see an interest in taking up new energy services.

While it is often said that there is no consumer interest to move towards EVs and low emission vehicles, manufacturers have on the contrary been vocal about their struggle to meet up the demand. Therefore, it seems that some consumers are ready despite high costs of purchasing, and that low levels of EV take up are not entirely linked to a lack of demand but rather to a lack of supply. In addition,

there is also a clear lack of variety of models, as pointed out previously. Another important obstacle is linked to sales, dealership and sale houses practices. Recent car manufacturers' announcements on reaching big markets shares in the future are good signs, but good markets tools to push the market in the right direction already exist and should be used, such as the CO_2 regulation on cars and vans, higher targets and bonus/malus scheme etc.

Many conditions still need to be fulfilled to convince consumers. One good example to illustrate this is the United Kingdom market. Despite an early energy liberalization which considerably increased the choice in energy providers, most consumers stayed with the same supplier. This shows that consumers engagement in new markets cannot be taken for granted, and that more has to be done to ensure that consumers are provided with the right information, transparency, etc. Another key condition is to guarantee that consumers who do not want an EV or any of the consequent services should not be penalised, for instance by paying more for more flexibility in the grid (energy providers, insurance).

THE VIEWS FROM THE CAR MANUFACTURERS

Policy tools should be used to support the automotive industry in producing more and better electric vehicles

In Renault-Nissan's vision, electro-mobility is at the heart of the mobility and autonomy revolution, in ongoing new ecosystem is built. On this topic, few observations can be made. First of all, Renault-Nissan was a pioneer in EV about 8 years ago, and has continuously improved the range of capacities of its EV (now reaching 400 km), and has advocated in favour of electro-mobility. Secondly, in order to reduce EV costs, Renault-Nissan has created economies of scale as consumers are the key element to make EVs uptake a reality. The company has therefore developed different types of vehicles to answer to all consumers' needs. Nevertheless, more support to the automotive industry to develop more EV models should be given, for example, by implementing an integrated approach and better connectivity, which is crucial for EVs uptake. The industry and the consumers also need a good level of incentives and sufficient deployment of charging points. This last point is highly important for Renault-Nissan. Given the current number of EVs in the market, infrastructures are sufficient. However, if the European Union is to reach its CO_2 targets for 2025 and the consequent number of needed additional EVs to be put on the road, there is a clear shortage of charging points throughout Europe. More efforts need to be achieved on this aspect, also to reassure consumers that infrastructures are sufficient. Though the results on EV sales are not as high as expected, Renault-Nissan is positive on EV development if appropriate financial and non-financial incentives are put in place.

Renault-Nissan has sold half of the existing one million EVs in Europe. The three main points of improvement of its EVs are price, autonomy, and infrastructure. To face that, the company has decided to focus on technology evolution, and on creating an EV ecosystem, with energy services and circular economy considerations. There is a clear trend in improvement of the technology and of battery autonomy. The challenge is in charging infrastructures, but progress is only possible if the right policy framework is put into place. A clear roadmap is needed, with fiscal incentives and harmonisation at the EU level. The situation on CO_2 taxation where each Member State has its own system is not satisfying.

Renault-Nissan has started to implement a certain number of projects, some of them focusing on batteries. The company is working in close cooperation with the European Commission to create a friendly policy framework on batteries, a crucial element of the EV, around which the company presents a story-telling based on key concepts such as freedom of movement, environment friendly and beneficial, circular economy. The automotive group welcomed the initiative of Commissioner Maros Sefcovic, who has been working on creating an operational virtual business model around batteries. The battery must become an asset with a first life and a second life, in addition to its potential

as storage of renewable energy. At the moment, the paradox is that there is no second life batteries because batteries' life is longer than expected (at least 10 years). It is absolutely clear that EVs will not at all create an explosion of the grid, but will be a contributor to a balanced grid.

THE PERSPECTIVE OF AN ELECTRICITY PRODUCER

Electromobility transition can be easily handled by the electricity system if actors work together

Like most of the major energy companies in Europe, EDF is taking important steps towards batteries and storage development. It recently announced a storage plan aiming at creating an additional 10 GWh, corresponding to 8 billion euros investment by 2035. This means doubling the R&D budget for batteries, with more or less 70 million for the next 3 years. An electricity mobility plan will be announced later this year. EDF, through its subsidiary company Sodetrel, has already installed around 3 000 charging points in France and in Belgium, reaching 400 000 charging events per year managed through this platform.

EDF is also closely involved in several ongoing EU Projects:

- The Corridor project, with 200 fast chargers along highways in France, every 80 km, with a power of 50 kW, a charging time from 20-30 minutes, and pricing by 5 minutes slots.
- The Unit-e project to connect national grids, EDF works in cooperation with Renault-Nissan to build 40 points to connect Dublin to Genoa.
- 0n ultra-fast charging (up to 350 kW), EDF has a pilot project that has to be tested.

For EDF, it is clear that there will be enough energy to power electric cars in the future. First, the electric power chain is three times better than the internal combustible engines. If half of the European cars were to be electric by 2045, it would translate into a 9% increase of electricity demand, which represents almost nothing for utilities. The electricity demand is growing by 1.3% per year since the 90's. There is no major issue on that side. If we look at forecasts of installed capacities in renewables, RES that will feed in EVs correspond to more or less 20% of the total RES generation by 2045, which is again largely manageable. Home charging in EV is not more than 5 kW. It is already very easy to switch on and off millions of equipment in France, such as boilers, without smart meters. If we had to control the charging of EVs in the future, the technology already exists. Regarding grid connection, EDF is already connecting close to 400 000 new customers every year in France. Therefore, many charging points will not overflow DSOs with demand: DSOs will have to do 5%-7% more connection operations. It is largely possible to handle these evolutions.

At the end, the transition must be properly anticipated, but the take up of electromobility will have no dramatic impact on the electricity system, which can already accommodate millions of vehicles without changing anything. The journey will take at least 20 years and there is therefore time to adapt. However, it cannot happen if actors, car manufacturers, energy providers etc. do not work together. The EV is the perfect link between transport and electricity.