

Session 2. Full Electric Vehicles and the Infrastructure

1. General

Introduces chair, structure of panel and types of participants (interests they represent). Summarises aim of the discussion/panel. Recall that the report does not summarise the detailed presentations but rather the issues discussed, main messages, questions raised and orientations that could tentatively be brought forward. Indicate where the detailed presentations can be found - link to conference web-site.

The aim of this session was to offer an outline of the ICT requirements for the efficient integration of FEVs and to provide an opportunity for stakeholders to discuss these issues and possible actions for the integration of FEVs in the infrastructure.

The session panel involved four speakers representing the interests of energy companies, powertrain manufacturers, ministries and other organizations. These speakers presented an analysis of the situation of Spain regarding the introduction of FEV's from the perspective of the energy company Red Elctrica, the situation of FEV's within the energy consumption and battery development forecasts according to AVL List GmbH, the current plan for the electrification of transport of the Portuguese ministry of economy, and the role of the municipality in the deployment of charging stations according to POLIS.

The chair for this session was Mr Jean-Luc di Paola-Galloni, vice chairman of ERTRAC and CEO Delegate of Valeo.

The suitability of Spain for the introduction of FEV's was pointed out. The country has a very high dependence in renewable energies and this would mean an important reduction in GHG. The Spanish network could allocate up to 6.5 million vehicles with the help of "smart charging". This ICT technology shifts the charging of the vehicle to the moments of the day when the demand is at its lowest, for this the FEV needs to be permanently connected to the energy grid. For this to happen ICT technologies will be crucial to bridge all the different players.

A series of figures on current and future energy pathways were presented to illustrate the challenge that batteries and other energy storage systems will face. The key is on the efficient transfer of energy from the renewable energy source to the powertrain. The coming trends in energy used for transportation that were shown suggested that ICT will be a key technology in the deployment and integration of FEV's.

Portugal's current electrification plan was presented during this session. The importance of the FEV user and his/her experience has received special attention here. In this context, ICT will be crucial to allow the seamless interoperability of all the players and service providers, allowing the users to recharge anywhere without concerns about who is the service provider.

The role of the municipalities as key players in all the electrification plans was remarked. They are interested in reducing air and noise pollution, control the infrastructure investment and have the potential to move forward initiatives such as public transport captive fleets. A summary on the different electrification initiatives happening in mayor European cities was presented.

During the round table two important points were made. First was that the electric companies are ready to deliver the needed energy supply at the charging points, and second was that we need to develop smart technology to reduce the "range anxiety" in FEV drivers.

The panel raised among other the following issues:

- The importance of ICT in bridging the different players in the electrification of mobility.
- There is still large room for improvement in electric and hybrid powertrains.
- The focus must be on the user and his/her experience.
 - The interconnection of all actors must be seamless.
- The importance of the municipality in the deployment of charging points.

2. Details

May have a number of sub-headings related to specific issues discussed/presented and preceded by a paragraph that describes the scope of the session/topic – possibly why some issues did not crop up and others do not.

3. Orientations/Conclusions

May be useful to describe what is feasible today from the technological point of view, but why it is not widely taken up. Support by evidence from presentations – or other. Give an indication as to what needs to be done to move forward. Identify any specific issues that would need emphasis.

The importance of "smart charging" as a requisite to FEV deployment was pointed out during the session. In order to make an efficient use of the electric grid, intelligent charging time allocation will be required in both the FEV and the infrastructure. On-board energy managers will have to be developed to optimize the energy flow between the vehicle and the infrastructure. Furthermore, education of the users and best practices for sustainable usage will be needed too.

New breakthrough powertrain technologies have been developed to improve efficient mobility. Nevertheless, further advance in these fields will be required for them to properly deal with current energy and mobility challenges. ICT will play a crucial role in this field coordinating all the systems in FEV's in terms of safety and energy efficiency, and thus enhancing the vehicle's autonomy and reliability.

The integration of charging points in the urban infrastructure will require investments in ICT. Energy efficiency will need to be addressed when distributing the charging points. Furthermore, the combination of parking space and charging point is recommended to integrate seamlessly the FEV's in the urban daily life.

4. Annex

List of speakers with their affiliations.

- Ms. Susana Bañares from Red Electrica (in substitution of Mr Luis Imaz Monforte)
- Mr. Affenzeller from AVL List GmbH
- Mr. Luis Reis from the Portuguese Ministry of Economy
- Mr. Sylvain Haon from POLIS
- Mr Jesus Garcia Martin, from Iberdrola joined the round table.