European Fuel Cell Car Workshop | March, 1st - 3rd 2017, Orléans, France

Fuel Cell cars, the market issues

Bertrand Chauvet
109 Boulevard Pereire, 75017 Paris

bertrand.chauvet@symbiofcell.com

Keywords: Market development, H2 clusters, car fleets, economies of scales, car TCO, European Programs

Our lecture aims at presenting the market drivers and prerequisites to a successful Fuel Cell Electric Vehicle market development.

We can observe a recent acceleration of electric vehicles penetration in the market. This not only due to the consequences of the so-called “dieselgate”, or to the rise of the consumer awareness for “green” solutions. Policy makers are now taking actions, and car OEMs are rolling out new models and more competitive solutions. Currently, this trend mainly benefit to BEVs, not much to FCEV yet. As a matter of fact, the battery world which has accumulated enormous amount of research and industrial investments for decades, is now coming to maturity, entering mass production cycle.
Despite a long history, the Fuel Cell world is just starting to seriously invest, comparatively, and is still far from mass production to reach economies of scales. However, there is practical and viable path for this electric vehicle solution, which is partly competing with BEV, but seem to have a much broader range of transportation applications, covering bikes, cars, utilities, trucks, special engines, buses, ships, trains and even aeronautics. Furthermore, hydrogen energy is not only a convenient electric storage solution for mobility, it can also bring great services to the global energy system, enabling and accelerating the energy transition towards a more distributed, more efficient, more flexible and more sustainable electric grid.
This lecture identifies the challenges, the drivers, and the key milestones to reach for making FCEV a successful and viable solution. In particular it addresses the critical importance for hydrogen cars to reach an acceptable TCO (total cost of ownership) that is close to diesel ICE, as well as securing the ROI (Return On Investment) for the refueling infrastructure in order to motivate both private and public entities to invest, and get a better leverage on financial resources. Initially, the role of the national and European funding programs remains absolutely key to deploy successful demonstrators proving the case for this solution.
The lecture will also explain what strategy the French ecosystem has been developing to tackle the issues and make a successful market kick-off for FCEV mobility. In essence, the strategy relies on the initial role of vehicle fleets to trigger further infrastructure investments and development, and the need to solve the “chicken and egg” dilemma through comprehensive, self-contained and profitable local hydrogen ecosystems.
Simultaneously, energy providers and utilities have started to understand the key role that hydrogen could play in the energy system since electrolysers producing green hydrogen will contribute to provide flexibility to the electric network, adapt to local power needs, improves the ROI of intermittent renewable electricity production infrastructure thanks to storable hydrogen; and finally, offer more possibilities to get a better value for renewable electricity outside the electricity grid, notably through mobility. These two converging developments could drive the successful deployment of FEVs.

Kangoo ZE H2 from Symbio