

Article 1:

Issues and Challenges of Electric Vehicles – JAMA speaks at the 4th Environmentally Friendly Vehicle (EFV) Conference

A biennial international conference, the first Environmentally Friendly Vehicle (EFV) Conference started in 2003 in Japan, followed by Birmingham, UK in 2005 and Dresden, Germany in 2007. The fourth Conference was held in the last week of November in New Delhi, organized by the Government of India.

The EFV conference aims to share experiences of measures for promoting or introducing environmentally friendly vehicles by Contracting Parties of the United Nations. The Conference also exchanges experiences of provision of legal and economic framework for the introduction of such vehicles and technologies. In addition the Conference aims to identify specific learning, initiative and programmes that could be shared between developed and developing countries and lead to possible cooperation.



Speakers at one of the sessions of the 4th EFV Conference

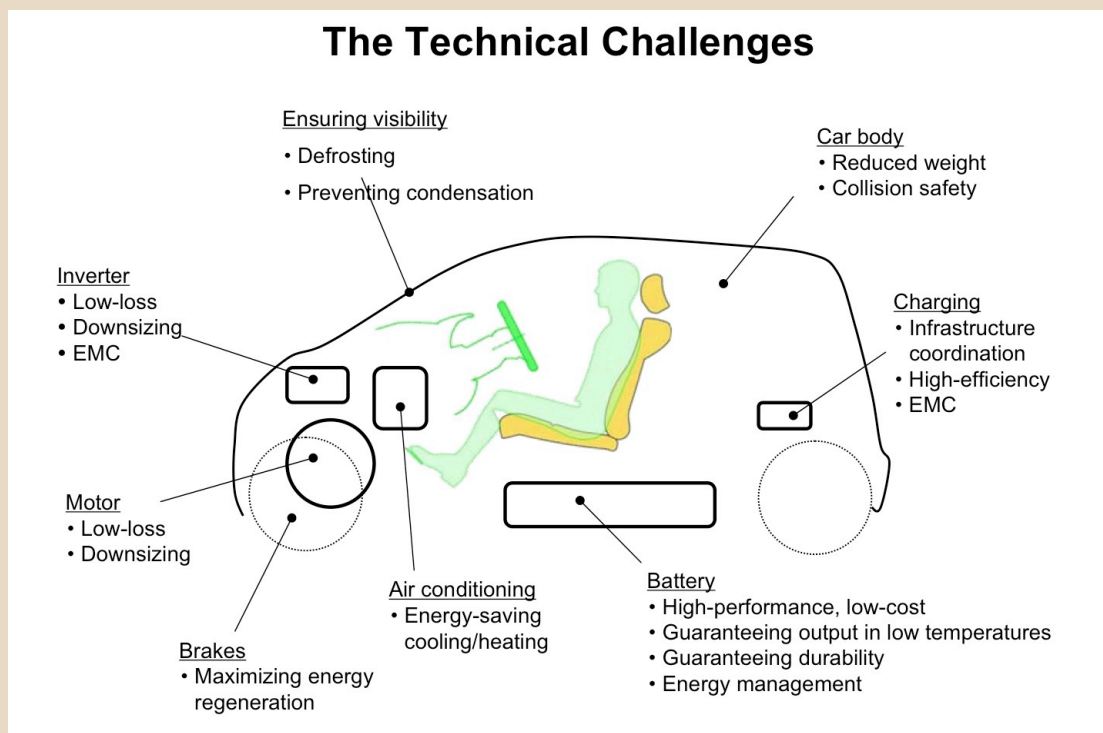
According to the EFV Informal Group for GRPE (Working Party on Pollution and Energy), WP29, 'by 2030, as many as 50% of vehicles manufactured worldwide are expected to be electrified-hybrids, plug-in hybrids and electric vehicles.' Indeed, the automotive industry has come to a significant turning point of reinvention where the spotlight is increasingly shone on EFV. At this juncture, where the momentum of transition to such vehicles speeds up, it is timely that stakeholders from Government departments of Europe, USA, Asia, South Africa and Australia, along with several international development agencies, policy makers, industry leaders and academia from across the globe participated widely in the 4th EFV Conference, speaking enthusiastically on various topics ranging from roles of EFV, legislative and regulatory framework of EFV, future scenario, alternative fuels to electric vehicles.

Being a keen supporter of environmental initiatives, JAMA members have been active in introducing a variety of next-generation vehicles. Recently, in particular, the momentum for electric vehicles has been gaining speed in automotive industries all over the world. Amidst this backdrop, JAMA took part in the 4th EFV to introduce some of the issues and strategies of electric vehicles from the viewpoint of the Japanese automobile industry.

As various types of energy and environmental challenges present themselves to the automobile industry over the span of time, so have technological breakthroughs. For the issue

of air pollution, technologies for solving it have been established to a great extent. More recently, as JAMA pointed out during the Conference, the focus has shifted to challenges from global warming and energy shortages, which are considered the two most urgent issues. To address both of these issues, the key is the reduction of petroleum consumption. For motor vehicles, this means the increase of fuel efficiency and greater use of non-petroleum energies. While research and development are in progress for fuel cells in the meantime, the most important direction in powertrain technology is electrification in the medium and long term.

During the Conference, JAMA also discussed the technical challenges facing electric vehicles. Primary technical issues are found in the batteries but other issues must also be addressed for the commercialization of electric vehicles. Wide-ranging technical innovations are necessary to realize a full diffusion of electric vehicles.



Battery development is the foremost technical challenge, among other EV-specific challenges.

Currently the average driving range of electric vehicles is only about one-fourth or one-fifth of other types of vehicles. Therefore, for the time being, the use of electric vehicles will be limited to short distance driving commuting. Besides the need to ensure a sufficiently long service life of batteries, drastically lowering the cost of battery is also important. In the performance and cost targets drawn up by the Japanese Ministry of Economy, Trade and Industry, from year 2030, the cost of batteries for electric vehicles is one-fortieth of their current cost. Hence, a phenomenal breakthrough in the improved performance of the battery is essential to bring about full-fledged use of the electric vehicle. The industry, government and academic sectors are working together for the development of next-generation batteries in Japan.

Next, JAMA reports on the status of alternative-energy/next-generation vehicle use in Japan. As of 2008, there were about 600,000 next-generation vehicles in service—0.8% of Japan’s total fleet. Specifically, among the next-generation vehicles, only 2,500 were electric vehicles which shows that its introduction is only at the very beginning.

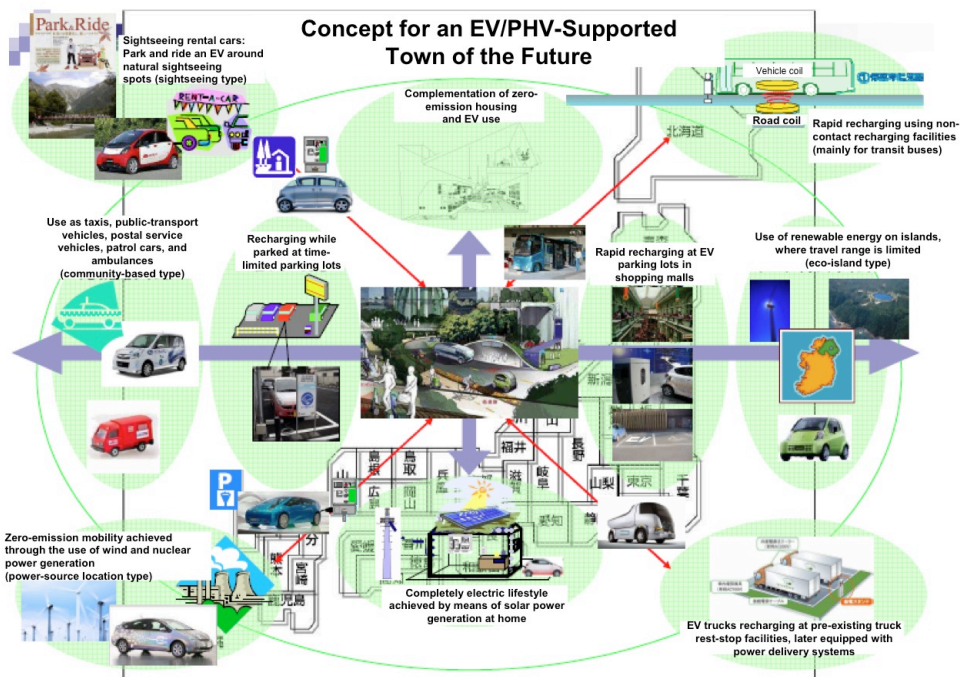
However, JAMA cites the projection of McKinsey research company to point out that, assuming Japan will account for 10% of the world’s total demand for next-generation vehicles, sales of electric vehicles and plug-in hybrid vehicles will reach 600,000 units in the year 2020, a huge increase from the 2,500 units currently.

For a healthy development of electric vehicles, an integrated and cooperative approach is necessary. Besides technical innovations in the battery technologies and other components

and aspects of the vehicle itself, market innovations such as development of infrastructure and the creation of initial demand is part of the approach; so is the elimination of obstacles such as inappropriate regulations and standards.

An 'EV-PHV (Plug-in Hybrid Vehicle) Town Project' is an example of innovation to facilitate the introduction of electric vehicles and plug-in hybrid vehicles. It is undertaken jointly by a team of industry, government and academic members. This project takes place in eight different local communities in Japan with the support of stakeholders such as government, automobile manufacturers, electric power companies and users. JAMA expects that this project will accelerate the use of electric vehicles as well as plug-in hybrid vehicles.

Scenarios for Widespread EV Use (Example: Japan)



As electric vehicles are a highly potential means of reducing petroleum consumption, JAMA is actively engaged in activities to achieve its sound development, and deems it important for stakeholders in the world to come together for collaboration.