Session 2: Scaling up electric passenger transport in cities

Best practices for scale up of electric mobility in cities

EVI Board Meeting and EVI-PCP Pilot City Forum

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Guangzhou, China

Outline:

- Barriers to Electric Vehicles (EV) adoption
- Drivers for EV adoption
- Geopolitical implications for EV adoption
- Policy Initiatives in Electric Mobility
- Infrastructure and technology requirements for EV adoption
- Business Models
- Financing approaches

Key Barriers in EV adoption

Economic Barriers

- Business viability issues
- High upfront EV cost

Regulatory Barriers

- Characterization of EV charging activity
- Tariff related issues

Technical Barriers

- Charger standards and protocol issues
- Grid stability issues
- Battery performance issues

Informational Barriers

- Lack of awareness
- Range anxiety

Drivers for Electric Vehicles (EV) adoption

- Reduction in battery prices
- Evolving battery technology
- Evolving EVSE (Electric Vehicle Supply Equipment) technology
- Promotion of renewable energy
- Rising crude oil prices
- Government Support

Geopolitical implications for EV adoption

Opportunities for Electric Mobility in Small Island Developing States

Island nations do not have large distances to be covered
This eliminates the range anxiety of EVs

Reducing pollution
With almost zero tailpipe emissions, EVs can drastically reduce the GHG emissions from transport

Reduce dependency on fossil fuels
EVs will reduce the requirement of fossil fuels for transport, thus reducing the import of the same for the nations

Increasing Renewable Energy
SIDS have to preserve the ecological balance and thus, EVs with technologies such as V2G and second life of batteries can reduce.
SIDS usually have an abundance of Sun and Wind that can be utilized to produce electricity and the batteries can also work as backup during natural hazards/events.

Policy Initiatives for deployment of Electric vehicles

- It is essential for countries to set a clear and well defined roadmap or strategy for implementing electric mobility.
- The roadmap should be prepared in co-operation with the stakeholders and should assign roles and responsibilities to each of them. It should also be followed by concrete legislative action.
- The implementation of the strategies need to be monitored and evaluated at regular intervals to ensure that the goals are achieved.

Providing free parking and access to high capacity lanes	Providing additional financial and non financial incentives	Spreading awareness about electric mobility with the citizens	Setting up EV procurement programmes and mandates for themselves and their suppliers

Role of local administration

Infrastructure and Technology in deployment of Electric vehicles

- With constantly evolving technology in charging infrastructure, it is required to ensure that the already installed infrastructure does not become obsolete. Additionally, it is equally important to provide ease-of-charging to early adopters and new consumers of electric mobility.

- It has been evident from the various incentive programmes for setting up charging infrastructure that they are necessary in the short term. Once the viability of various business models is established, these incentives may not be required for setting up charging networks

- It is suggested that for countries looking to establish a target for EVSE, they should model their cities according to the markets with increased deployment of EVs. The plan for setting up public and private charging infrastructure in a city should incorporate the urban infrastructure available.

Infrastructure and Technology in deployment of Electric vehicles

- Every country needs to build a plan for charging infrastructure ratio. Based on the requirement of chargers in public and private buildings, the building codes should have specific requirements for incorporation of charging points.

- By classifying the activity of charging an EV as a resale of power can severely restrict the installation of EVSEs. Hence, it is essential that charging of EVs is defined as a service.

- Smart charging has emerged as one of the most effective way that the power of EVs can be harnessed and their impact on the grid can be reduced. It can be utilized to encourage renewable energy integration into power generation for many countries.

- There is a need to develop safe, high energy and low cost batteries to overcome range anxiety and reduce the purchase cost of EVs.

Business Models for Deployment

Key Findings

- Public fleet procurement can make EVs less expensive than gasoline vehicles.
- A volume purchase can encourage favorable pricing approaches and increase vehicle model availability.
- Increasing the annual mileage of vehicles can improve EV competitiveness.
- EVs can play a leading role in achieving the environmental goals of public agencies.

Examples of electric car sharing

The Lithuanian electric car-sharing service, Spark has officially launched in Romania with deployment of 50 cars in Bucharest. The fleet consists of Nissan Leafs and Renault Zoes electric cars. The minimum rental time is 12 minutes. The service area, however, is Bucharest, so anybody outside the city's vicinity must bring the car back or else pay extra.

Financing Electric Mobility

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Thank you..

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