

Smart Grids: Powering the e-Mobility Future

How does the provision of transport and electricity need to change to make e-mobility a reality?

Thursday, 3 May, 11:45-13:15

SESSION OUTLINE

Electrification is a promising route to low-carbon road transport. It requires major investments in the development of vehicles and infrastructure. But recent innovations in electricity distribution and load management may offer opportunities to spread investment costs, and the storage capacity of electric vehicles is attracting the interest of electricity suppliers. As the use of electric vehicles (EVs) grows, this new electricity load will need careful management. Otherwise plugging-in the car to recharge at the end of the daily commute could create major problems in coping with peak electricity demand.

Electric utilities have begun to deploy "smart grid" technologies to better manage demand using intelligent metering systems and the internet to manage the use of household and office heating systems and appliances - saving energy, cutting CO₂ emissions and shaving peak loads. Smart grids not only enable EV recharging to be scheduled intelligently but permit batteries to be used to help meet peak demand. Car batteries could have residual charge drawn down to run household appliances in the evening peak and then be recharged at night - with a quick charge option for an evening trip.

For vehicle-to-grid systems to meet their full potential, proponents suggest they should also be used to manage electricity supplied from intermittent renewable energy sources, such as wind and solar. The relatively short "storage window" available makes this a subject for debate. The session will bring together key players to shed light on the critical issues for developing vehicle-to-grid systems and making electric mobility seamless. It will examine:

- The deployment of smart grids, integration with electric vehicles and innovations in the pipeline;
- The unfolding commercial prospects for fully electric vehicles and plug-in hybrids;
- Interoperability of vehicles and battery systems and models for the development of public recharging infrastructure.

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