

Unlocking the potential of electric vehicles – EURELECTRIC publishes paper on smart charging

24/03/2015

E-mobility is a great opportunity for the electricity sector and customers alike. For instance, electric vehicles (EVs) can help to integrate renewable energy into the distribution grid. But depending on when these cars charge, they may also put a significant strain on grids. To avoid this and make the most of EVs' flexibility and storage potential, a **EURELECTRIC paper** published today proposes one straightforward solution: smart charging.

"If all the cars on the road today were electric, e-mobility would account for a 24% increase in total electricity demand, which could be handled without additional generation and transmission capacity. But if those cars are not charged in an intelligent and coordinated way, their impact in terms of peak demand at certain times could be much higher. We think that smart charging is the answer: it reduces environmental and societal costs while increasing power system efficiency. With 90% of charging predicted to take place at home or at work, it is important to make smart charging available and incentivise customers to use this service," commented EURELECTRIC Secretary General Hans ten Berge.

Divided into three main parts, the EURELECTRIC paper examines the benefits that smart charging can bring to customers, power systems, and society as a whole. It concludes with recommendations on how such smart charging functionalities can be put in place.

In particular, the paper finds that:

- **Smart charging can enable electric vehicles to avoid major overloads and support power system operation** by making better use of available grid and generation capacity. In this way, additional investments in distribution grids can be minimised or even avoided. In addition, smart charging can help enable EV charging when there is surplus renewable capacity available, e.g. solar at noon and wind at night.
- **Customers are more likely to accept smart charging if it is economically attractive.** For instance, they can save money by agreeing to charge their cars in off-peak hours with cheaper electricity tariffs. Combined with cost savings on fuel, maintenance and the like, EV owners can end up paying 23% less over their vehicle's lifetime than owners of a conventional car.
- **Electricity is a very effective way of reducing CO2 emissions from transport** while lowering the cost of the EU's oil import bill. Moreover, smart charging could lead to almost full decarbonisation of electric transport as more renewable capacity and less peaking power plants are used – achieving additional savings as a result of avoided costs on CO2 emissions.
- **Electric vehicles can also contribute to a more energy efficient transport.** Electric vehicles are up to three times more energy efficient than conventional cars, with a potential to achieve a net reduction of 137 Mtoe per year in the EU. Smart charging will help boost these values further.

The paper was presented and discussed at a **EURELECTRIC workshop** on smart charging in Brussels today.

This article is also available on our [Website](#)

Should you wish to unsubscribe click [HERE](#) to log in to your profile. Then click on 'Check your services'.