

# ELECTRO-MOBILITY UNDERPINNED BY SMART, RELIABLE AND RESILIENT ELECTRICITY GRIDS



**Decarbonising road transport and its smart integration into the electricity distribution system is a major cornerstone of the energy transformation. We welcome this vision, as DSOs will play a crucial role in enabling both an energy and a mobility transition. Electro-mobility targets will only be met provided that there are also investments in the deployment of smart, reliable electricity networks.**

We endorse the following proposals in the Clean Energy Package and the Mobility Package as key initiatives for promoting electro-mobility:

- **Energy Performance of Buildings Directive** supporting the roll-out of charging points and pre-equipment for buildings' cars parks
- **Regulation setting post-2020 average CO<sub>2</sub> emission** targets for cars and vans, including incentives for carmakers to meet CO<sub>2</sub> objectives
- **Clean Vehicles Directive** obliging Member States to procure zero-emission vehicles, whose scope should include wider public service contracts

## DSOs AS KEY ENABLERS OF ELECTRO-MOBILITY INF



### 1. IT IS OUR VISION TO FACILITATE THE SMOOTH DEVELOPMENT OF E-MOBILITY

DSOs play a major role in facilitating customers and markets, including market development. The uptake of electric vehicles (EVs) is a challenge for DSOs, but also an opportunity: car batteries' flexibility opens possibilities for integrating renewables, as an electric car can charge at any point when not in use. EVs are thus not only part of the energy transition, but they can also help foster its development. This is why DSOs are ready to facilitate electro-mobility deployment, across low- and medium- voltage levels: from AC to DC and up to ultrafast chargers.



### 2. MEETING OUR VISION: SMART CHARGING AND SMART REGULATION

The challenge is not the extra energy demand, but the simultaneous power demand on low-voltage networks. In addition to doubling the yearly electricity consumption of a household, EVs can increase (peak) power demand five times when electric cars plug in at the same time (after arriving at home) in one street.

The result is that DSOs will need to expand or reinforce their networks. But capacity will always remain limited, which implies that DSOs' networks are used as efficiently as possible: for instance, by charging the EV in the afternoon with solar power connected to a parking (or charging) spot, or slowly at night. Here the car battery's flexibility comes into play. Or, to name it differently: smart charging.

Customers can be financially incentivised to smartly charge their EV, always in a voluntary way. These incentives could come from smart network tariffs or from other DSO signals. Another way is that customers offer their flexibility to DSOs e.g. via variable contracts, or via flexibility services offered to DSOs by aggregators.

EDSO also commends the **Action Plan for Infrastructure** as this might solve the issue of providing sufficient infrastructure. Where e-mobility markets are more developed, charging points deployment is mostly a commercial activity. DSOs might still play a role in deploying charging infrastructure at the early phase, where it is necessary to fulfil a basic societal need and geographical coverage.

But most importantly, the action plan addresses the right issues, such as leveraging public and private investments in charging infrastructure and smart charging to prepare the electricity networks for a large deployment of electric cars – with the acknowledgement of the need for a mix of low and high charging powers. Smart grids will be the backbone of the EU's future energy and transport systems.



## RASTRUCTURE AND MARKETS: FIVE KEY MESSAGES



### 3. ENABLING SMART GRIDS: FUTURE- PROOF CHARGING INFRASTRUCTURE

Cars can be charged smartly only if they are connected to charging stations that are smart charging ready. DSOs believe that existing and new charging stations should be fitted with necessary devices designed for smart charging. Developments of interoperable ICT protocols are equally important. Interoperability of data and information is essential to communicate with all parties in the smart charging process – from the grid to the charging station and the car itself.



### 4. COLLABORATIVE APPROACH: ENGAGING IN PROACTIVE DIALOGUE

Smart and reliable operation of distribution systems depends on the visibility over charging activities, planned charging stations' location and capacity. Deploying smart distribution networks to enable widespread roll-out of charging stations requires proactive dialogue and coordination between DSOs and all parties. A holistic approach to urban planning that successfully integrates charging load distribution of electric transport (cars, buses) will benefit both grids and municipalities. Beyond cities, early engagement with DSOs can also speed up the installation of fast chargers on motorways which places higher power demands on MV grids.



### 5. SUSTAINABLE DEVELOPMENT: SETTING THE RIGHT STANDARDS

Security and quality of supply is the objective of every DSO. Just as any other load on DSOs' networks, AC and DC loads of EVs may impact system stability and safety. Power quality effects such as asymmetry, harmonics and voltage quality can be reduced if EVs and charger manufacturers adopt relevant emission requirements. DSOs should initiate an update of necessary (existing and new) requirements by European standardisation bodies in an engaged dialogue with all stakeholders.

## FIVE KEY MESSAGES

1. IT IS OUR VISION TO FACILITATE THE SMOOTH DEVELOPMENT OF E-MOBILITY
2. MEETING OUR VISION: SMART CHARGING AND SMART REGULATION
3. ENABLING SMART GRIDS: FUTURE-PROOF CHARGING INFRASTRUCTURE
4. COLLABORATIVE APPROACH: ENGAGING IN PROACTIVE DIALOGUE
5. SUSTAINABLE DEVELOPMENT: SETTING THE RIGHT STANDARDS



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