

ANEC contribution to the study commissioned by the European Commission with respect to the interoperability of charging four-wheeled electric vehicles (EVs) throughout the EU.

ANEC, the European Consumer voice in standardisation, welcomes the study commissioned by the European Commission (DG Enterprise & Industry) in view of developing and reviewing potential options for enabling interoperability of charging four-wheeled electric vehicles throughout the EU.

If Electric vehicles - able to contribute to the European target for reducing CO2 emissions - are to become mainstream, it is essential to provide infra-structure that achieves consumer confidence. This infrastructure must include equipment that allows the recharging of batteries in an interoperable, efficient, user friendly and safe way.

Below are the ANEC replies to the questions in the study conducted by Risk & Policy Analysts Ltd (RPA) on behalf of the European Commission:

- 1. Does your organisation think that lack of interoperability of charging infrastructure is a major hindrance to consumers purchasing EVs, or are there more important factors?*

ANEC believes that lack of interoperability is one of the major hindrances. Nevertheless the average consumer who is willing to buy an EV is rather concerned about the maximum range that can be driven as well as the price of the vehicle. In addition, the consumer wants to be able to charge the EV at any charging station in his surrounding area (within the maximum range). Usually the EVs are used in an urban environment. Interoperability throughout the whole country or even Europe is important but not that important for the decision to buy.

Besides the pure interoperability of plug and socket the interoperability of billing and payment is also very important. Even with the same plugs and sockets at every charging station they still can be incompatible due to missing billing arrangement between the infrastructure and power grid operators.

- 2. Should consumers continue to be able to charge their vehicles in domestic sockets at home, or do you think that dedicated charging units should be installed by EV owners?*

Charging via domestic plugs and socket in Mode 2 should be possible at home. Every additional equipment has to be purchased or lend out from

the electrical company and installed by an electrician. This would incur costs putting more burdens on consumers. Nevertheless, if the consumer wants to charge his EV faster (Mode 3) and/or use smart grid technologies he would have to install a dedicated charging unit (includes use of dedicated plug).

3. *Do you think that public charging stations should be equipped with the same plugs/connectors across Europe and if so, how do you think this could be achieved?*

Every charging station in Europe should be equipped with the same plug / socket. Unfortunately, till now, no consensus could be reached on standardization of plugs at the European Standards Bodies. If this situation persists, Legislators might take a decision. After a final decision on the plug/socket has been taken, the next important issue to be tackled would be billing and payment at every charging station.

4. *Alternatively, do you think that drivers should carry multiple cables in order to be able to use a wide range of charging stations?*

ANEC believes that this would be one of the major hindrances concerning the market breakthrough of EVs. The problem would be far bigger than the case with mobile telephones and their chargers. ANEC has been criticizing the lack of EU-wide harmonisation of phone chargers and calling for a universal charger for all mobile devices, including tablets and digital cameras since several years. In the case of EVs, what if the consumer forgets to pack the multiple cables and the EV runs out of power in front of an incompatible charging point? This could even happen within the same city if multiple plugs and socket are permitted throughout Europe.

5. *Do you think that public charging stations should be fitted with a tethered cable and connector or should drivers carry their own cable to plug into a socket on the charging station (or does it not matter)?*

ANEC believes that it would be more convenient if the driver would not have to carry the cable all time. If only one plug/socket solution existed, that would be feasible. Nevertheless it has to be kept in mind that a tethered cable has to be protected against vandalism and checked regularly for any damages for safety reasons. In addition, if the cable is partly rolled up while charging, it could become quite hot due to the high currents.

6. *What are the implications of mass adoption of electric vehicles for the future of the electricity grid? Do you think that public and/or domestic charging stations should be equipped with "smart" capabilities in order for electricity companies to be able to control the amount of electricity used to charge EVs?*

ANEC is of the opinion that public charging stations do not really require smart grid capabilities. They are mostly used to charge the EV instantly to its maximum capacity. Domestic / private charging stations on the other hand could/should implement smart grid capabilities. The EV is usually connected throughout the night and the fully charged vehicle is required at the next morning. In the meantime all possible solutions of smart grids should be used (vehicle to grid, charging at off-peak time).

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ANEC in brief

ANEC is the European consumer voice in standardisation, defending consumer interests in the processes of technical standardisation and conformity assessment as well as related legislation and public policies. ANEC was established in 1995 as an international non-profit association under Belgian law and represents consumer organisations from 33 European countries (EU, EFTA & candidate countries). ANEC is funded by the European Union and EFTA, with national consumer organisations contributing in kind. Its Secretariat is based in Brussels.

ANEC has signed the European Commission's Register of Interest Representatives and accepted its Code of Conduct: Identification Number 507800799-30.