

## CEER Citizens' Q&A

### CEER Paper on Electric Vehicles: Network Management and Consumer Protection 8 August 2023

#### 1 Why do electric vehicles matter to energy regulation?

Electric mobility is becoming integrated into national and European energy systems. In the retail energy market, energy suppliers and service providers are offering more and more consumer-oriented electric vehicles (EV) products and services. Meanwhile, distribution and transmission infrastructures need to be prepared for the deployment of EV charging stations. For energy regulators, this means adapting existing regulation or even developing new regulatory approaches to keep up to date with network and market developments.

National regulatory agencies (NRAs) are responsible for regulating energy markets and infrastructure operators in general. In many cases, these general powers apply by extension to the challenges of electric mobility. For instance, electricity transmission and distribution tariffs set by NRAs will have to include an increasing volume of investments made by system operators to connect publicly accessible charging points. In other cases, NRAs may be given new responsibilities depending on the national legislative and regulatory framework; for example, to ensure consumer protection.

#### 2 What are the impacts of electric vehicles on power systems and markets?

Electric vehicles will have significant impacts on our power systems:

- 1) **Increase in charging infrastructure:** EVs require charging infrastructure to be distributed across Europe to meet consumers' charging needs, whether in public or in private spaces. According to recent studies, the number of public charging points required in the EU by 2030 will be greater than 2 million compared to today's estimated 510,000.
- 2) **Higher electricity demand:** Electric mobility also represents an increase in electricity demand and will require grid reinforcements and increased investments from system operators. The more EVs are rolled out, the more charging capacity will be required, and the more resilience will be needed in the system to ensure its stability and ability to meet demand.
- 3) **New regulation and consumer protection measures:** With the increase in electric vehicles, regulatory challenges will arise in the context of new business models, products and services emerging in the retail energy market. Consumer protection and engagement issues will also appear, such as the accessibility of EV products and services, awareness of smart charging options and benefits, and price transparency in both public and private EV charging infrastructure.



**2 million\***  
public charging  
points expected  
by 2030

\*compared to today's estimated  
510,000

### **3 How can these impacts be properly addressed?**

Given the anticipated impacts of electric mobility on the grid, it is important to proactively address and mitigate potentially negative effects by optimising the localisation/deployment of EV charging infrastructure. This will help minimise the need for additional grid investment and ensure the effectiveness of smart charging incentives. Most of these measures rely on economic incentives to make smart charging attractive for users, whether in the form of lower network tariffs or different power tariffs based on charging times.

However, some initiatives already adopted by NRAs show that alternative approaches to mitigate the expected impacts are possible, such as through regulatory requirements. For instance, in the UK, new private charging points are configured to discourage charging during periods of high demand.

### **4 Why is this important for energy customers and what can NRAs do for them?**

The success of widespread EV adoption relies on active and informed consumer participation. Consumers will have to be empowered to participate in the energy market and manage their EV charging habits in a way that is beneficial both to them and the wider system. This means that consumers will need to have a good understanding of and access to offers of products and services suited to their needs. Consumers will also expect adequate protections to be in place. These will include comprehensible and accurate information from EV service providers and a level of service that is reliable and equal throughout the European Union (and more broadly, in all CEER member countries).

Therefore, NRAs play an important role in facilitating a continued and successful EV rollout while safeguarding consumers interests. Depending on their national mandates, NRAs can carry out research to better understand consumer expectations and behaviours. By collaborating with policy makers and industry, they can identify obstacles to innovation and encourage the emergence of innovative business models. NRAs are also responsible for adapting and extending regulation to ensure appropriate consumer protection. Furthermore, they monitor emerging issues such as interoperability and e-roaming to proactively address potential challenges in the EV system.

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