



## Questions and Answers: EU action plan on digitalising the energy system

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### 1. Why is the Commission proposing a plan to digitalise the energy system?

To end the EU's dependence on Russian fossil fuels and tackle the climate crisis, our energy system requires a deep transformation, in which digitalisation plays a central role. In a context of high energy prices in particular, accelerating the digitalisation of the energy sector is key to help consumers save on their bills. Smart buildings, smart meters and electric vehicles, Internet of Things devices provide key information that allows to monitor energy consumption, increase renewable integration and reduce costs. Innovative data services, apps, and energy management systems have a large untapped potential for energy users, but they need a further boost and adequate policy support measures to become ubiquitous.

This is why the Commission is setting out a series of actions to support this process via legislative initiatives, investments and coordination with the Member States in the next months and years. In the medium term, digitalisation will enable seamless interactions among very diverse actors. In particular, it will allow consumers to further profit from domestic energy sources such as solar PVs or community-owned wind turbines. For example, it could allow solar panel owners to sell electricity to their neighbours when they are not using it at a price which is cheaper than buying from the grid. Similarly, bidirectional EV charging would allow the use of car batteries as an additional resource for electricity during peak hours on the grid.

To support these developments, the Commission will formally re-establish the existing Smart Grids Task Force. The group will be renamed the 'Smart Energy Expert Group' and will have greater responsibilities and involve all Member States and additional relevant stakeholders. Within this expert group, the Commission will set up, by March 2023 at the latest, the "Data for Energy" (D4E) working group to support with developing and rolling out a common European data space for energy.

In the longer-term, digitalisation will be a prerequisite for the integration of decentralized forms of renewable energy in the grid, which will enable the EU to become less reliant on imported fossil fuels, and therefore less exposed to their price volatility. The integration of renewable energy sources requires more grid decisions to be taken closer to the edge of the network. It also requires more grid flexibility, which can be provided by active consumers and prosumers that flexibly manage their energy assets. By doing so, they can also lower their energy bills and reduce their carbon footprint. A seamless access to more granular data about the state of the electricity smart grids and smart consumer assets (such as heat pumps, solar panels, home batteries, smart thermostats, building automation systems or electric vehicle charging points) will be central, but this can only happen if digital tools and shared data infrastructure for delivering energy services at the right moment in time become widespread.

### 2. What is the Commission proposing to tackle the energy consumption of the ICT sector?

The ICT sector accounts for approximately 7% of global electricity consumption, and it is forecast to rise to 13% by 2030. This energy footprint currently represents 3-5% of global carbon emissions, putting it on a par with the aviation sector. The growing energy needs of the ICT sector shouldn't become an obstacle to the EU's objective to reduce energy demand in the current context and to achieve climate neutrality in the longer term.

The Commission will extend the Ecodesign for Sustainable Products Regulation to cover new ICT products and develop an **energy label for computers**. This should encourage manufacturers to make their products more energy efficient and more easily repairable, reusable and recyclable.

With data centers accounting for 2.7% of EU electricity demand in 2018 and their energy consumption expected to rise 200% between 2020 and 2030, the Action Plan outlines different actions to address the growth in this critical infrastructure. The Commission will, in particular: introduce monitoring and reporting requirements for their energy consumption in the review of the

Energy Efficiency Directive; develop an **environmental labelling scheme** for data centers; explore introducing separate reporting lines for indirect greenhouse gas emissions stemming from the purchase of cloud computing and data center services in EU sustainability standards; and improve requirements on the operating conditions of servers and data storage products through the revision of the Ecodesign rules.

The Commission will also increase efforts to develop common indicators for measuring the environmental footprint of electronic communications services, such as the telecommunication networks used by ICT devices to send and receive information. It will work towards an **EU Code of Conduct for the sustainability of telecommunications networks**.

### **3. Does the Action Plan tackle cryptocurrencies?**

The energy consumption of cryptocurrency mining has attracted considerable attention over the past years. The energy consumption of cryptocurrencies has increased by 900% in the past 5 years and has more or less doubled compared to 2 years ago, reaching around 0.4% of worldwide electricity consumption.

The Commission will develop a report by 2025 that includes a description of the environmental and climate impact of new technologies in the crypto-asset market, as well as potential policy options that could help mitigate adverse impacts on the climate of technologies used in the crypto-asset market.

Given the current energy crisis and the heightened risks for the coming winter, the Commission urges Member States to implement targeted and ambitious measures to **lower the electricity consumption of crypto-asset actors**, in line with the proposed Council Regulation on an emergency intervention to address high energy prices. In case, there is a need for load shedding in the electricity systems, the Member States must also be ready to stop crypto-assets mining. In the longer-term perspective, it is also crucial to put an end to tax breaks and other fiscal measures benefitting crypto-miners currently in force in certain Member States.

In addition, the Commission will also cooperate internationally and build on the technical expertise of standardisation bodies to develop **an energy-efficiency label for blockchains**.

### **4. How is the Commission promoting investments in smart grid development and related digital solutions?**

Significant progress has already been made in digitalising the energy sector: 51% of all EU households and SMEs are equipped with smart electricity meters. EU digital and energy policies, such as the Renewable Energy Directive, the Energy Performance of Buildings Directive and the Data Act, already guide digitalisation of energy as issues like security, privacy and consumer protection cannot be left to the market alone and its proper implementation is key. But there is still a significant way to go before achieving a fully smart and flexible environment.

In order to reach the Fit for 55 and REPowerEU objectives for renewables and energy efficiency, it is estimated that about **EUR 584 billion** of **electricity infrastructure investments** are needed between 2020 and 2030, in particular in the distribution grid. Investments in digital solutions such as grid optimisation at distribution level will help reduce further capital expenditure on enhancing the existing grid infrastructure, allowing for a faster deployment of electric cars, decentralised renewables, heat pumps and other technologies - due to reuse of existing infrastructure.

To increase the efficiency and smartness of the grid for the benefit of the energy system as a whole, the Commission will support **closer cooperation between the EU Transmission System Operators (TSOs) and the distribution grids operators (DSOs)** to create a **virtual model of the European electricity grid**.

To guide investment, the Commission will also support the European Union Agency for the Cooperation of Energy Regulators (ACER) and the national regulatory authorities (NRAs) in their work to define common smart grid indicators and related objectives that would contribute to this goal. This will allow NRAs to monitor smart and digital investments in the electricity grid annually as of 2023 and measure progress towards the creation of the digital twin of the grid.

### **5. How will the Action Plan address cybersecurity ?**

Ensuring cybersecurity of a digitalised energy system is a key component of the Action Plan.

Digitalisation can deliver a strong contribution to the EU's energy security and climate goals, by making our energy system more efficient, more flexible and more resilient. But it also brings along new challenges related to the cybersecurity of our European energy infrastructure and the reliability of its electricity grid, access to and sharing of data, data protection and privacy. More decentralised and digitalised production and consumption of energy together with connected devices increase the "attack surface" of the entire energy system, thus increasing the cyber-related risks.

The EU has a systemic approach to strengthen the cybersecurity of energy networks, combining measures that are specific to the energy sector with the cross-sectoral cybersecurity framework. The revised Network and Information Security Directive – the so-called NIS2 – has been agreed by the co-legislators and will be formally adopted shortly. It defines the energy sector as one of the EU's critical infrastructures and lays down provisions for cyber-security on national capabilities and crisis response, risk management and cooperation and information exchange. In consultation with NIS Cooperation Group, ENISA, as well as other relevant stakeholders, the Commission will identify the specific ICT services, systems and products that might be subjected to coordinated risk assessments with priority. Particular attention will be paid to risks in the renewable energy and grid supply chain, including offshore wind.

Resilience to cybersecurity-risks in the electricity system will be further increased by a Delegated Act in the form of the network code on sector-specific rules for cybersecurity aspects of cross-border electricity flows.

Upon completion of the legislative proposals of **the gas and hydrogen networks, the Commission may also look to propose to adopt specific Delegated Acts on the cybersecurity for these sectors.**

The Commission is also issuing today a [Recommendation to enhance the resilience of critical energy infrastructures](#) against possible physical, cyber or hybrid attacks. These measures are in addition to the recent proposal for a new [Cyber Resilience Act](#).

## **6. What funding opportunities will be available for reaching the goals set in the plan?**

The following EU funding instruments can play a strategic role to fast-forward the twin transition:

- The **Horizon Europe 2021-2027 programme** can support initiatives to enhance interoperability, engage consumers in the new energy market and pilot energy data spaces. In the 2023-2024 programme, the Commission intends to launch a flagship initiative to support digitalisation of the energy system.
- The **Digital Europe Programme** will be pivotal in kick-starting the deployment of the common European energy data space building on the results of the Horizon Europe-funded projects that demonstrate solutions for this data space. It will also fund the newly established European Cybersecurity Competence Center and the Network of National Coordination Centers.
- **Connecting Europe Facility** grants can be used to support some cross-border smart grid projects being identified as Projects of Common interest (PCIs).
- **National Recovery and Resilience Plans** are tools through which Member States can channel funding into the digitalisation of the energy sector.
- The **LIFE Clean Energy Transition (CET) sub-programme** supports the development of smart energy services' solutions to empower citizens and communities in the energy system.
- **Cohesion Funds** can also be used by Member States, regional and local authorities to target the digital transformation across sectors, including energy, with a particular focus on smart energy systems and smart grids.

The Commission calls on Member States to **increase their R&I support** for the testing and piloting of digital technologies in the energy sector and **promote cooperation between digital and energy stakeholders** through the national R&I programmes.

### **For more information**

[Press release](#)

[Factsheet](#)

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