

EU Action Plan for the Digitalisation of the Energy System



Dr. Karsten Krause
Head of Sector
Innovation, Research, Digitalisation,
Competitiveness (B.5)
DG Energy, European Commission

Twin Energy and Digital Transition

European Green Deal

Europe fit for
the Digital Age

a better-functioning, smart, integrated and interconnected energy system, where new business models can easily emerge in a fast-changing market.



On-site building automation enables holistic management of commercial building energy consumption

VPP platforms enable RES to participate in the flexibility market, and grid operators to solve e.g. congestion issues

Energy communities help reduce power and gas network utilization and can offer attractive heating/cooling options

Smart Charging enables charging of electric vehicles in line with self-consumption or price signals, as well as enabling local grid stabilizing measures for DSO

Industrial load control allows demand side management at industrial sites, e.g. via hybrid boilers

Vehicle to grid enables usage of EV batteries for flexibility measures (with remuneration for the owner)

Home automation helps manage residential energy demand (e.g. heat pumps) and supply/storage installation according to self-consumption flexibility goals

Grid optimization e.g. via DERMS/ADMS systems help DSOs to keep their grids stable

Main areas of the Digitalisation Action Plan





A European framework for sharing data to support innovative energy services



- Priority **high-level use cases**: (a) flexibility services, (b) smart charging of electric vehicles, and (c) buildings
- Developing a **Common European Energy Data Space** (interoperable framework of common standards and practices)
- Building on the energy and digital regulatory framework, including the Implementing Acts under preparation
- Creating an EU **Smart Energy Expert Group** with a 'Data for Energy' working group



Promoting investments in digital electricity infrastructure

- Creating a **digital twin** of the electricity grid with ENTSO-E and EU DSO Entity
- Supporting National Regulatory Authorities and ACER in defining common **smart grid indicators and objectives**
- Urging Member States to accelerate the rollout of **smart meters** and revisit their costs-benefits analysis when necessary





Benefitting citizens

→ Strategies & tools to engage consumers to have an active role in the crisis

→ **common reference framework**
→ **for an app** helping consumers reduce their energy use, especially during peak hours

→ Fitness Check of EU **consumer law on digital fairness**

→ Large-scale partnership on the digitalisation of the energy value chain as part of the **EU's Pact for Skills**





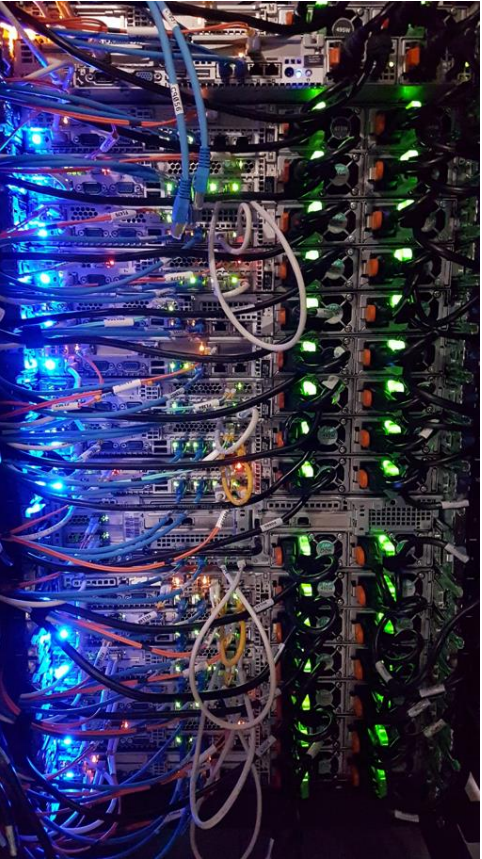
Ensuring cybersecurity and resilience



- Security and cybersecurity are paramount in the digitalised energy system: (1) the amount of exchanged data, the complexity of interactions between the actors increases (2) "the risk surface" of the energy system increases with devices and appliances connected to the traditional distribution networks.
- Actions complement **cross-sector legislation such as the Directive on measures for high common level of cybersecurity across the Union/ the NIS 2**, the EC proposal on the Cyber-Resilience Act (2022/454) of 15.9.22
- **A network code for cybersecurity aspects of cross-border electricity flows (under the Electricity Regulation)**
- a possible **delegated act on the cybersecurity of gas and hydrogen networks** (as part of the legislative package of December 2021)
- the announced **Council Recommendation** (2022/551) on coordinated approach by the Union to strengthen the resilience of the critical infrastructure



Energy consumption of the ICT sector



- **Eco-design and energy labelling of products**
e.g. energy-label for computers
- Measures targeting **communication networks**
e.g. EU code of conduct for their sustainability
- Measures targeting **Data Centres**
e.g. environmental labelling scheme
- Measures targeting **crypto-assets**
e.g. energy-efficiency label for blockchains

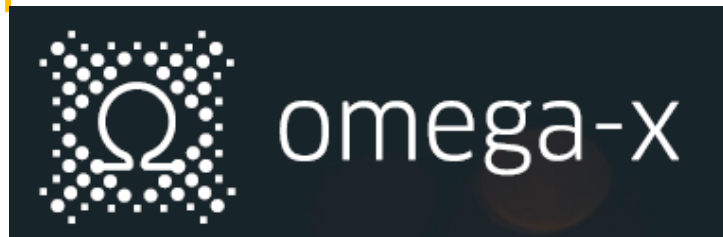


An EU-wide coordinated approach



- Increasing investments in digital solutions through **National Energy and Climate Plans, Digital Decade roadmaps, and Recovery and Resilience Plans.**
- **EU funding** to accelerate the **development and deployment** of innovative digital energy solutions.
- Structured **high-level dialogue** on digitalisation of energy.
- **Platform for cooperation** between digital and energy innovators.
- Reinforcing **international collaboration.**

Horizon Europe



Timeline:
2022 - 2025



HORIZON-CL5-2021-D3-01-03:
Interoperability community



int:net
Interoperability Network for
the Energy Transition

<https://cordis.europa.eu/en>

Thank you

Stay informed: DG ENER work on Digitalisation of the energy sector: https://energy.ec.europa.eu/topics/energy-system-integration/digitalisation-energy-sector_en