

Energy Transition Dialogue in Luxembourg 2022

“Power Grid Digitalization and Interoperability”

Luxembourg, June 30th, 2022

“{ engineer; innovate; excite; }”

Context

- Decarbonization, electrification, and **digitalization** are driving the reshaping of the European energy system.
- **Innovation** and **interoperability** are the key enablers towards the aforementioned concepts.
- European organizations are engaged in a wide portfolio of relevant research projects to **test and validate the performance of breakthrough innovations and novel concepts**.

The anticipated benefits envisioned by the digitalization and innovation cannot materialize without safeguarding the appropriate level of interoperability.

EU-Funded projects

8 projects with ...

- > €100M Total Budget
- > 200 project partners from
- > 25 European countries
- Demo pilots in different countries, serving different scenarios



Achievements – fit for purpose for the GD targets

- Development and coupling of markets, planning/ optimization tools to **allow for access of system operators and market parties.**
- Development of an integrated system of (data-actors-markets-services) governance, for **optimization of sector integration and lowering the entry barriers for interested parties, including the end-consumer.**
- Development of a new TSO-DSO interface to **allow for coordination of actions** and provide grid users with optimal service.
- Development of new market concepts and ancillary services to **integrate flexible new sources and provide the basis for deep electrification.**
- Development of interoperability of digital platforms, creation of tools to manage interoperated systems, to **overcome the increased level of complexity.**
- Update of the regulatory guidelines, to **enable large-scale installation and greater potential of renewable energy sources** for Europe.

Lessons learnt towards a pan-EU energy system

- Development of **one system-of-systems**, through the activation of interoperability of physical and ICT layers of tools, equipment and platforms, by:
 - Building on standards and models such as the IEC, SAREF, SGAM.
 - Standardizing the balancing, ancillary and congestion management services.
- Better **governance of the information** that would optimize the system operation and empower new system users to create business opportunities, through the:
 - Definition of new roles and responsibilities.
 - Development and adoption of a pan-EU data exchange structure.
 - Adoption of recent initiatives towards the design of a pan-EU Energy Data space.
- Promotion of **breakthrough innovations and concepts** that would open new opportunities to system users, such as the extension of the effort in the electricity sector, **in other energy vectors**.

Future R&I initiatives

- Development of **one system-of-systems** to cover the needs of the different European actors and energy carriers (i.e. **optimized joint operations, cross-sector coupling and deep electrification**).
- Development of **new market architecture concepts** for the deployment of suitable market platforms for the newly integrated energy system.
- Development and **integration of interoperable technologies** (e.g. electric mobility solutions, demand response techniques, distributed ledger technologies/ blockchains, storage systems, distributed energy generators, etc.).

Thank you!

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