SUSTAINABLE PLACES 2023

Session:

Digital tools to increase flexibility and sustainability of our energy system

Date: 15/06/2023

Venue: Madrid (Spain)

Host: Sustainable Places Conference

11:00 – 11:05	**Welcome** *Lola Alacreu (ETRA I+D)*
11:05 – 11:50	**X-FLEX H2020 project final results and impact.** *Diego García / Lola Alacreu (ETRA I+D)*
11:50 – 12:10	**SYNERGY a big data platform for energy purposes: solutions for flexibility** *Ugo Stecchi (ETRA I+D)*
12:10 – 12:30	**ebalance-plus: technologies and challenges to unlock energy flexibility (project experience)** *Noemi Jimenez (CEMOSA)*
12:30 – 12:50	**FLOW - EV smart charging and V2X as flexibility resource to valorise** *Federico Noris (R2M)*
12:50 – 13:00	**Conclusions and closing** *Lola Alacreu (ETRA I+D)*

About the workshop:

Digitalisation is helping improve the safety, productivity, accessibility, and sustainability of energy systems around Europe. The greatest transformational potential for digitalisation is its ability to break down boundaries between energy sectors, increasing flexibility and enabling integration

across entire systems.

That fact is evidenced by many European projects working on this field where digital technologies are set to make energy systems for the different actors more connected, intelligent, efficient, reliable, and sustainable.

The Horizon 2020 project X-FLEX (https://xflexproject.eu/) will organize and chair the workshop "Digital tools to increase flexibility and sustainability of our energy system.", together with other H2020 projects such as Synergy (https://www.synergyh2020.eu), and e-Balance+ (https://www.ebalanceplus.eu), in order to present the final results and the impact generated during the project and beyond.

The objective of this workshop is to present the ICT tools developed and demonstrated in these H2020 project to increase the penetration of renewable energies in the European energy system, improving the sustainability and resilience of the grid.

These solutions help balance the supply, storage and demand of energy and make our energy system more flexible, thus facilitating the integration of decentralised renewable energy sources.

These tools will enable all the energy actors to control and manage their part of the grid in a more efficient way and participate actively in the energy market. The end-users of these tools could be citizens, energy communities, DSO, TSO, Market Operator, etc. in order to cover all the energy value chain. This way, it will be possible to create a win-win situation, providing benefits and more power to both the grid operators and the final consumers, building greener and more liveable cities.

Moreover, in the workshop, it will be analysed the preliminary economic, environmental and social impact assessment results of the projects, calculated with the data gathered during the demonstration phase, and the lessons learnt from this analysis. In this context, the replication roadmaps will be presented for scaling-up of the projects solutions to be applied on a large scale and in different real-world settings, creating synergies among the projects.

About X-FLEX project:

X-FLEX project proposes, a set of efficient, cost-effective, integrated solutions, that will facilitate the optimum combination of decentralised flexibility assets, both on the generation (DER) side and on the demand side (V2G, power-to-heat/cold/gas, batteries, demand response), enabling all parties, including final prosumers, to offer their flexibility in the market creating benefits to all the actors in the smart grid value chain.
X-FLEX is unique in its multi-technology, multi-actor approach which, in an increasingly RES-powered grid, will ensure security, resilience and stability for all, even under grid-stressing scenarios such as extreme climate events.
This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement nº 863927.
Website: xflexproject.eu/
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LinkedIn: @XFlex-H2020
YouTube: @xflexh2020

About e-Balance+:

The ebalance-plus project aims to increase the energy flexibility of distribution grids. The core of the project is the development of a comprehensive ICT communication platform where different electric grid players and operators (prosumers, DER exploitation managers, energy aggregators and

DSOs) can deal with the available flexibility to increase the grid stability and security. It delivers flexibility mechanisms & energy efficiency services.
The following flexibility solutions are integrated in the platform and developed and tested in the project: electric storage, V2G systems, SiC power inverters, power to heat, control of CHP and management of building devices with IoT-based systems.
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 864283.
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About Synergy:

SYNERGY introduces a novel framework in response to the need for "end-to-end" coordination between the electricity stakeholders, not only in business terms but also in exchanging information. The is composed by the SYNERGY Big Data Platform and AI Analytics Marketplace, accompanied by big data-enabled applications for the totality of electricity value chain stakeholders, to help them to simultaneously enhance their data reach and improve their internal intelligence on electricity-related optimization functions, while getting involved in novel data (intelligence) sharing/trading models, in order to shift individual decision-making at a collective intelligence level.
This project has received funding from the European Union's Horizon 2020 Research and Innovation program under Grant Agreement No 872734.
Website: synergyh2020.eu/
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YouTube: @SYNERGY-Horizonproject

About Flow:

The FLOW project boosts and demonstrates multifaceted EV smart charging and V2X integration into the energy systems with a range of comprehensive solutions including: highly replicable user-centric products, concepts, configurations and mechanisms; cross-sector harmonisation and standardisation to facilitate activities of stakeholders and EV users; advanced interoperable solutions to enhance planning and operation of EV charging; and scenario assessment based on a multi-criteria model.
FLOW will deploy 5 demonstrations (including 2 testbeds and 3 large-scale demos) in CZ, IE, IT, DK, and ES covering a wide range of applications (e.g., V1G/V2B/V2H/V2G, public/private/semi-public, urban/rural/touristic, car/small- & medium commercial) to validate and quantify the benefits associated with enabling and valorising EV flexibility, alleviating grid challenges, and fostering mobility and energy decarbonization.
This project has received funding from the European Union under the grant agreement nº 101056730.

Website: https://www.theflowproject.eu/
Twitter: @FLOW_V2X
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