

## Joint Online International Workshop

# Flexibility in energy systems: trends and perspectives

(Energy Communities, Virtual Power Plants, Energy Storage Systems)

**Wednesday May 8<sup>th</sup>, 2024**  
**16:00 – 17:30 CET**

Flexibility in energy systems has emerged as a pivotal concept within the European Union (EU), reflecting the region's commitment to sustainable and resilient energy transition. As the EU navigates challenges posed by climate change, resource depletion, and evolving energy demands, the need for adaptable and responsive energy systems has become increasingly apparent (flexibility refers in fact to the capability of energy systems to swiftly adjust production, consumption, and distribution patterns in response to fluctuating demand, supply, and external factors).

Within the EU, the pursuit of flexibility in energy systems aligns with broader objectives outlined in initiatives like the European Green Deal and the Energy Union Strategy. These ambitious frameworks aim to achieve carbon neutrality, enhance energy security, and foster economic competitiveness while promoting inclusive growth across member states. Flexibility serves as a cornerstone in realizing these objectives by enabling efficient integration of Renewable Energy Sources (RES), enhancing grid stability, and optimizing energy utilization.

The transition towards a flexible energy system entails a multifaceted approach encompassing technological innovation, regulatory reforms, market design enhancements, and consumer engagement strategies. Advances in digitalization, smart grid technologies, energy storage solutions, and demand-side management play pivotal roles in enabling greater system flexibility. Furthermore, regulatory frameworks must evolve to facilitate market dynamics that incentivize flexibility services, promote cross-border cooperation, and ensure fair competition.

Crucially, fostering flexibility in energy systems requires active engagement from stakeholders across various sectors, including policymakers, industry players, research institutions, and civil society. Collaboration and knowledge-sharing are essential to overcome challenges related to infrastructure development, investment barriers, and socio-economic impacts. By leveraging the diverse expertise and resources within the EU, the region can foster a thriving ecosystem for flexible energy systems that underpins sustainable development and resilience in the face of future uncertainties.

**In this context, this second Joint Online International Workshop will present different yet complementary flexibility-oriented approaches as proposed by four research projects funded by the European Commission (under the Horizon 2020 and Horizon Europe programmes) spanning from Renewable Energy Communities (REC) to Virtual Power Plants (VPP) through advanced Energy Storage Systems (ESS), including novel applications of thermal storage (TS).**

In collaboration with:



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# Programme

VPP4ISLANDS – Virtual Power Plant for Interoperable and Smart isLANDS

<https://vpp4islands.eu/>

**“Empowering Green Energy Replication in Islands through Virtual Power Plants”**

Habib NASSER – RDIUP

THUMBS-UP – Thermal energy storage solUtions to optimally Manage BuildingS and Unlock their grid balancing and flexibility Potential

<https://www.thumbsupstorage.eu/>

**“Unleashing Grid Flexibility: the Vital Role of Thermal Storage and Maximizing its Potential via Network Digital Twins”**

Luca SCAPINO – Gradyent

MASTERPIECE – Multidisciplinary Approaches and Software Technologies for Engagement, Recruitment and Participation in Innovative Energy Communities in Europe

<https://masterpiece-horizon.eu/>

**“Flexibility management to support energy communities”**

Adelaida PARREÑO – Universidad de Murcia

FLEXCHES – Flexibility services based on Connected and interoperable Hybrid Energy Storage System

<https://flexchess.eu/>

**“Enhancing Grid Stability and Renewable Integration: FlexCHES's Innovations in Residential Energy Storage Flexibility”**

Constantina STAVROU – Citizens in Power



Funded by  
the European Union

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ThumbsUp project has received funding from the European Union's Horizon Europe research and innovation programme under the Grant Agreement No 101096921.  
Masterpiece project has received funding from the European Union's Horizon Europe research and innovation programme under the Grant Agreement No 101096836.  
FlexCHES project has received funding from the European Union's Horizon Europe research and innovation programme under the Grant Agreement No 101096946.

# Participation

**PARTICIPATION IS FREE!**

The online international workshop is in English only – no realtime translation is provided.



**Reservation required:**

[Form](#)

The link for the connection will be sent by email to registered participants, before the event.



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