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WEBINAR

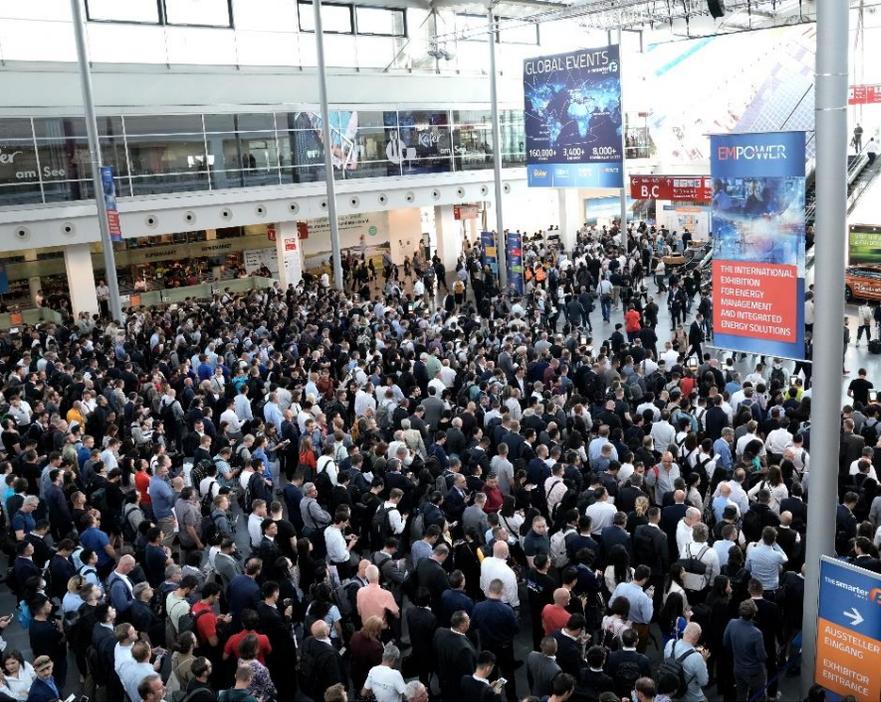
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# European Energy Communities

April 09, 2024

Partner





## OVERVIEW

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The International Exhibition for  
Energy Management and  
Integrated Energy Solutions

WEBINAR

## Our Guests



**Keynote Speaker**

**Stéphane Pouffary**

CEO

**ENERGIES 2050**



**Moderator**

**Zia Lennard**

Co-Founder

**R2M France**

WEBINAR

## Our Guests



**Speaker**

**Dr. Ana Trbovich**

Co-founder

**Grid Singularity**



**Speaker**

**Federico Giani**

Project Manager

**AEM**



**Speaker**

**Dr. Vito Mario Fico**

R&D Programme Manager

**Hive Power**



**Speaker**

**Dr. Iván Pasarín**

R&D Project Coordinator

**Veolia**



**Speaker**

**Dr. Annette Steingrube**

Solar Energy Systems

**Fraunhofer**



**Speaker**

**Ione Lopez Gonzalez**

Storage & DR Power  
Management

**Iberdrola**

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Antonella Battaglini, CEO, Renewables Grid Initiative
- [Start-Up Deep Dive: How They Can Be a Driver of the Energy Transition](#)  
Jan Lozek, Managing Partner and Co-Founder, Future Energy Ventures
- [Smart Buildings: The Future of Energy Efficiency & Climate Action](#)  
Ivan-Asen Ivanov, Energy & Climate Policy Officer, Eurelectric.
- [Don't Let the Lights Go out – What About the Cybersecurity of Critical Infrastructure?](#) Maarten Hoeve, European Network for Cybersecurity (ENCS)

→ **New podcast every Thursday**

[www.thesmartere.de/the-smarter-e-podcast-episodes](http://www.thesmartere.de/the-smarter-e-podcast-episodes)



**See you in Munich  
June 19-21, 2024**

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EUROPE 

# European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives

Tuesday, April 9th, 2024 - 11:00am–12:15pm CEST - Free Webinar in English

Opening  
speech



Stéphane POUFFARY  
ENERGIES 2050



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Zia Lennard  
R2M France



Closing  
speech  
Wrap up



Dr. Annette Steingrube  
Fraunhofer-ISE



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# Energy Communities – Activities / Objectives

## Citizen Energy Community (CEC)

- Electricity generation (RES)
- Electricity distribution
- Electricity supply
- Consumption
- Aggregation
- Storage (incl. charging for EV)
- Energy efficiency services
- Other energy services

## Renewable Energy Community (REC)

- Activities based on RES, including
- Generation
  - Energy efficiency
  - Supply
  - Aggregation
  - Mobility
  - Energy sharing
  - Self-consumption
  - District heating & cooling



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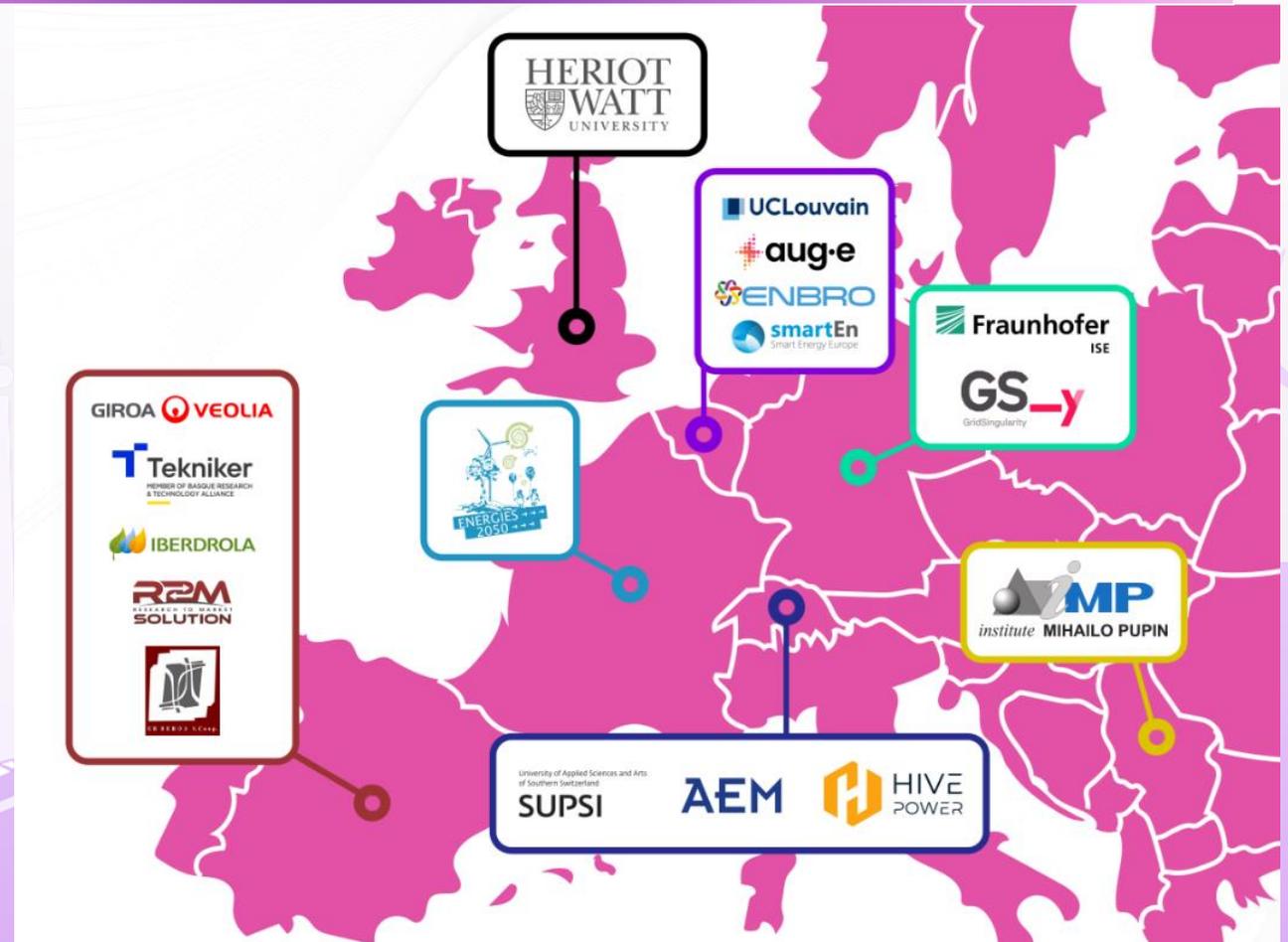


# FEDERated “system of systems” approach for flexible and interoperable energy COMMunities

4-year Horizon Europe Project (2022-2026)

17 European Partners

7 Countries (Spain, Germany, Switzerland, United Kingdom, Serbia, Belgium, France)



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## FEDECOM project – High level description

1. Develop and deploy a cloud-based platform for sector coupling, distributed generation and storage, high demand flexibility services and improvement of RES hosting.
2. Validate the solution in 3 large-scale pilots across Europe in different technical, market and climate contexts
3. Develop viable plans for large-scale replication of “follower” communities



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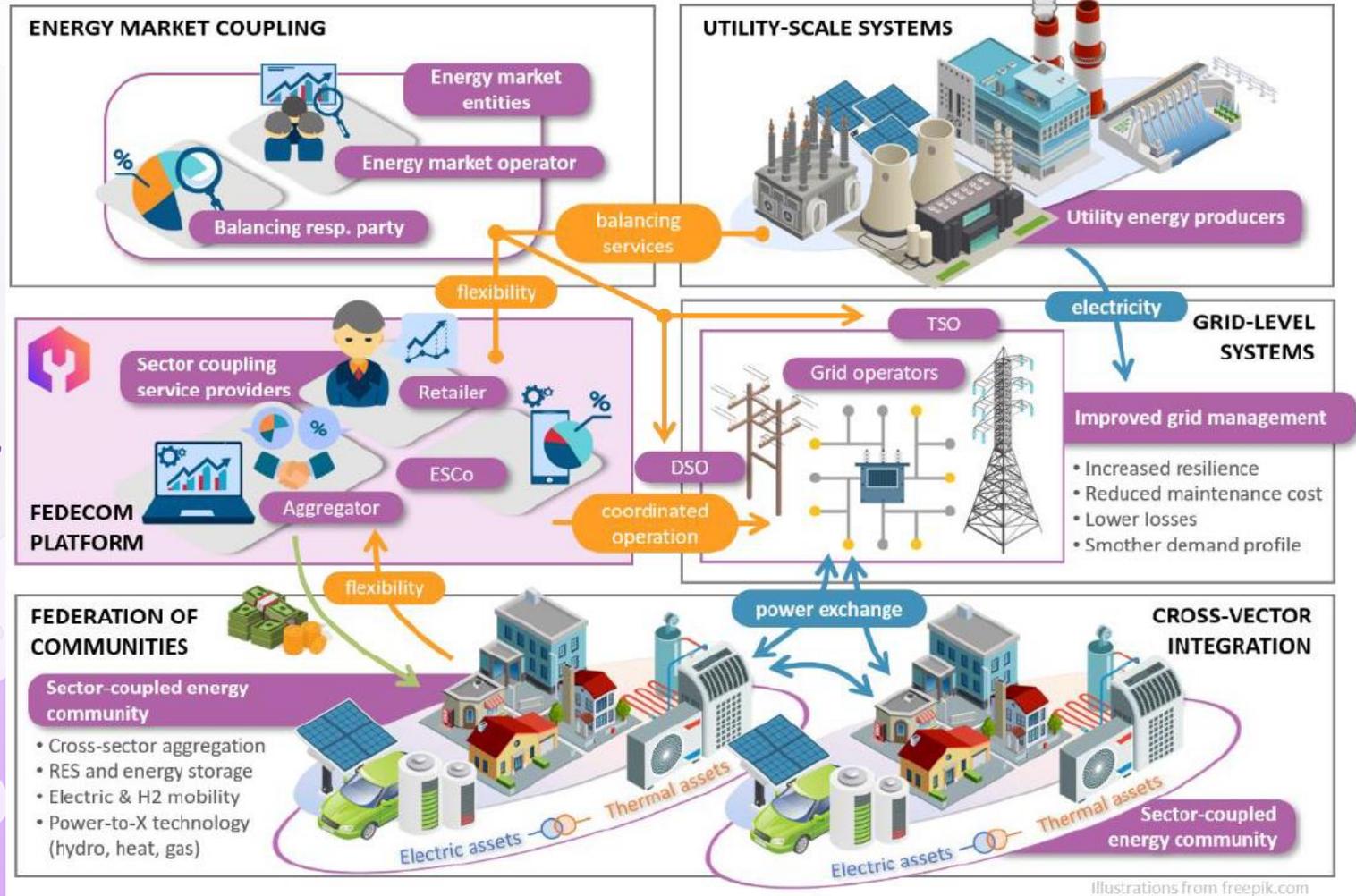
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# FEDECOM platform

- Communities produce and consume energy and exchange surplus
- Increase range by Intra- and Inter-Community exchange
- Aggregate data to anticipate production / consumption
- Cloud based platform with predictive, modelling and optimisation capabilities
- Cost-optimisation and flexible energy systems
- Measure – Forecast – Optimise - Control - Trade





## FEDECOM contribution

### Community – RES exchange and flexibility management

- Various communities are exchanging energy
- Push towards added renewable production and consumption
  - More renewable production (solar, hydro, wind, ...)
  - Locally consumed by using inertial consumption (heat pumps, e-mobility, batteries, ...)
  - Power to X opportunities (P2Gas, P2Heat, P2Hydro)
  - Locally exchanged by sharing in a local community
  - Exchange inter-communities on a national level but also on a cross-border level
- Transaction and payment validated and secured via blockchain
  - ✓ Increase RES production in energy mix
  - ✓ Energy savings
  - ✓ reduce GHG emissions and grid congestion
  - ✓ € reduction to consumers, more revenue for prosumers



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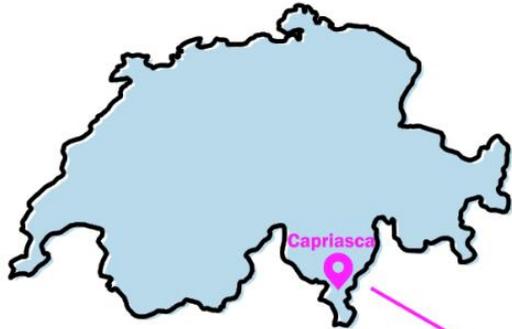


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# FEDECOM 3 large-scale pilots

**Spain**  
Virtual Green Hydrogen  
Federation of communities



**Swiss**  
Residential Hydropower Federation



**Benelux – Netherlands - Cross-country E-Mobility Federation**



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## Today's webinar agenda

We'll share our findings, but we also want to hear from you!

- **Topic 1: Energy Community Challenges**
- **Topic 2: Technical Solutions**
- **Topic 3: Policy Solutions**
- **Topic 4: FEDECOM added Value**
- **Wrap up**



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# Our today Webinar

## European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



### ➤ Topic 1: Energy Community Challenges

1. How can European energy communities effectively overcome the **challenges** associated with the integration of renewable energy, considering issues of intermittency, infrastructure limitations, and the need to balance supply and demand fluctuations?
2. What **strategies** can be implemented to encourage user-centric solutions for enhancing energy efficiency, addressing issues such as resistance to behavioral change, technology adoption, and measuring the impact of user behavior on energy efficiency?



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## Our today Webinar

# European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



### ➤ Topic 2: Technical Solutions

How can European energy communities best navigate **technical challenges** in grid integration, including the compatibility of diverse technologies and the integration of decentralized sources, while simultaneously **engaging and empowering consumers/prosumers** in adopting energy-flexible behaviors and trading locally?



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## Our today Webinar

# European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



### ➤ Topic 3: Policy Solutions

What **key steps and policies** are needed to navigate and address the complex regulatory, administrative, and financial challenges hindering the progress of European energy communities, including regulatory frameworks, administrative burdens, and limited financial incentives?



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## European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



Wrap up



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## Our today Webinar

# European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



### ➤ Topic 1: Energy Community Challenges and how to overcome them

- Lack of awareness, complex regulation (three types of energy communities): turnkey solutions are needed with low barriers; EU regulation not yet implemented in the member states
- Especially in larger apartment buildings, no community feeling, hard to agree on central solutions
- Rely on a diverse mix of RES (Hydro, PV and Wind)
- Balancing fluctuating production: energy management, but also short and long term energy storage systems (batteries, hydro power seasonal storage)
- Consideration of flexibility in consumption not only production



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## Our today Webinar

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### ➤ Topic 2: Technical Solutions

- Main challenge: interoperability between different devices; difficulties in communication
- Investment in data gathering important (smart meters, sensors); in addition data can be used to raise awareness why flexibility is important; digital solutions like Apps can be used
- Flexibility has to be incentivized; e.g by dynamic tariffs
- Scope of energy communities should be wider that they start to be prosumers; incentives can help



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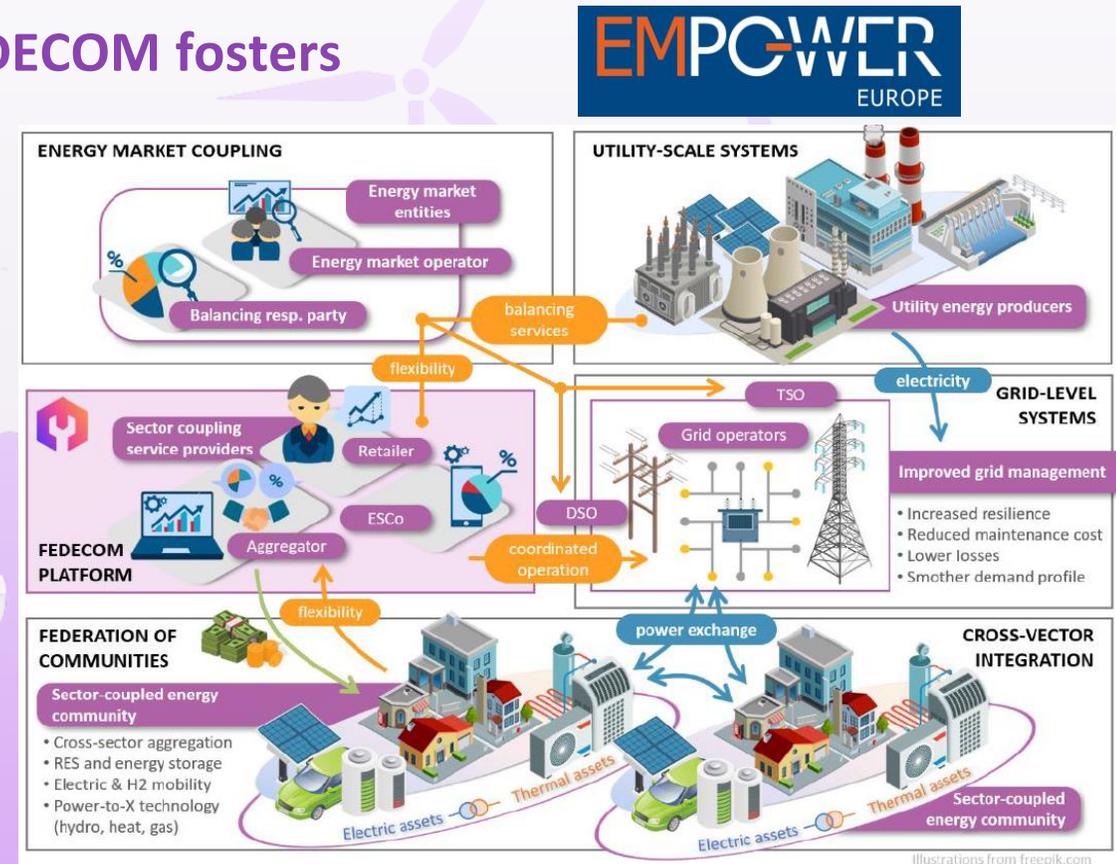


# Our today Webinar

## European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives

### ➤ Topic 3: What changes in the energy markets FEDECOM fosters

- Heart of the project is the FEDECOM platform
- The platform helps to manage flexibility, manage energy communities, allows peer to peer trading
- Sector coupling is a special challenge: how do we involve non electricity assets in the trading platform?
- Acceptance can be increased by the transparent process of building the platform
- Legislation is lagging behind



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## Our today Webinar European Energy Communities: Sector Coupling, Flexibility, and Operational Perspectives



- How to follow the Project: <https://fedecom-project.eu/>



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