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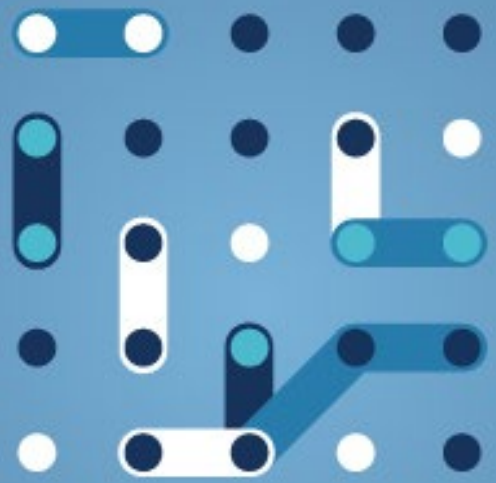

ENLIT - Session 7

10:00 – 12:00

2nd December 2021

Moderator: Patrick Clerens – EASE Secretary General

How to promote energy storage

www.h2020-bridge.eu

Agenda

Time	Topic	Speaker
10.00 - 10.05	Introduction – scope of the session	Patrick Clerens– Moderator
10.05 – 10.20	Opening Speech by the EC	George Paunescu – Policy Officer at DG ENER
12.45 – 12.55	Panel Topic 1	All Panelists
12.55 – 13.00	Panel Topic 2	All Panelists
13.00 – 13.10	Panel Topic 3	All Panelists
13.10 – 13.15	Panels Wrap up	Olivier Genest – Moderator
13.15 – 13.30	Closing Words	Mark Van Stiphout (European Commission DG ENERGY)

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• SCOPE of the Session

HOW TO PROMOTE ENERGY STORAGE

Technology: Electricity storage -To what extent do BRIDGE projects embrace sustainable or longer duration electricity storage technologies [preferably developed in EU], which provide sufficiently high round-trip efficiency or demonstrate solid progress in the increase of round-trip efficiency? Which are these technologies? When Li-ion technology is used in BRIDGE projects, do they approach producers belonging to the European Battery Alliance? (especially recent projects)

Heat storage: to which extent do BRIDGE projects use novel heat storage technologies? What are the main challenges for these projects/technologies?

Location: How much does the location of storage facilities affect the energy efficiency of the electricity system?

Regulation: Is there any storage technology whose potential for the energy system is underestimated and requires further policy support? Due to the complexity and many different storage technologies, to what extent could regulatory sandboxes help to their development? What are the main regulatory barriers for the demonstration of such projects?

Economics: How can we ensure that storage investments are cost-efficient? What are the useful experiences of the BRIDGE projects [or concrete BRIDGE project]?

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Opening Speech by the EC (Video message TBC)

EU strategic and regulatory support to storage

George Paunescu –
Policy Officer at DG ENER

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Project Presented and Speakers

SFERA III
Walter Gaggioli

MERLON
Esteban Pastor

GIFT
Steiner Igor

European Commission

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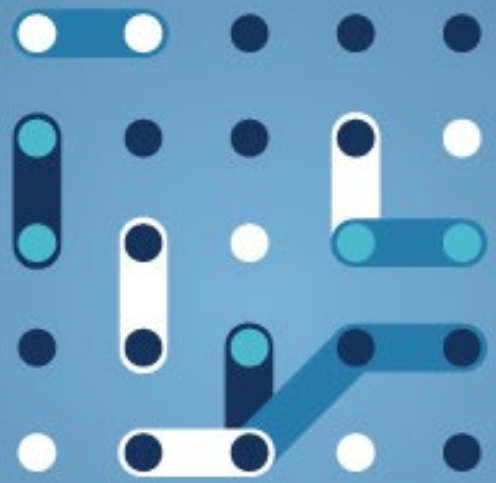
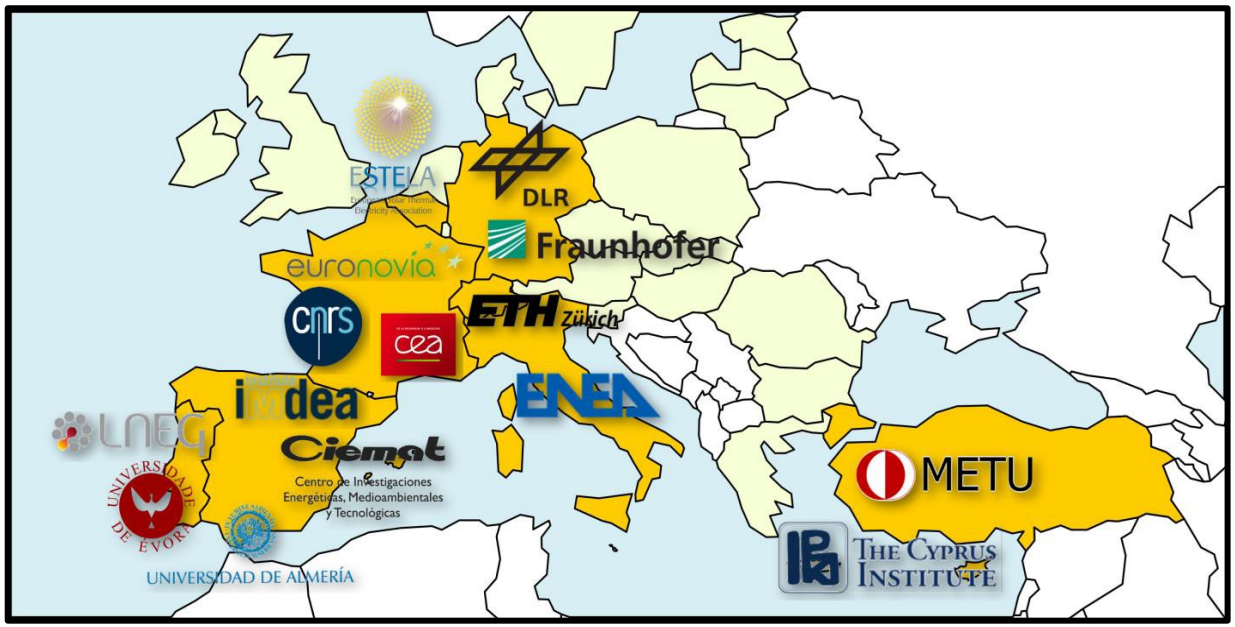
SFERA III

Walter Gaggioli



Introduction

Call: H2020-INFRAIA-2018-2020
Topic: Integrating Activities for Advanced Communities



Project Information

SFERA-III
Grant agreement ID: 823802

Start date
1 January 2019

End date
31 December 2022

Funded under
H2020-EU.1.4.1.2.

Overall budget
€ 9 102 630,66

EU contribution
€ 9 102 630,66

Coordinated by
CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT
Spain

This project is unique in Europe and will bring significant innovation not only arising from the development of novel concepts and from the improvement of the existing services through the joint research activities, but also from a much stronger and more consistent integration of these services through the networking activities while reducing fragmentation of the CST research

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What we are committed to:

Developing a coherent **landscape of leading-edge RI in Europe**

Promoting the **opening of key RIs in solar concentrating systems** for both academia and industries

Providing **training for a new generation of researchers and engineers**

Ensuring the **EU's scientific leadership** and **industrial competitiveness**

What we are implementing:

Networking Activities:

- **Outreach and educational activities (Annual Winter/Summer Schools; on-site training for industries)**
- **Transfer of knowledge between the participants;**
- **Coordination of a more effective use of different funding sources at national and European level**

Transnational Access Activity:

- **4 access campaigns to our RIs**

Joint Research Activities:

- **Improvement of the services offered by the RIs;**
- **Design of an e-Infrastructure for data, computing and networking;**
- **Support of the definition of common standards and protocols;**

https://sfera3.sollab.eu/access/

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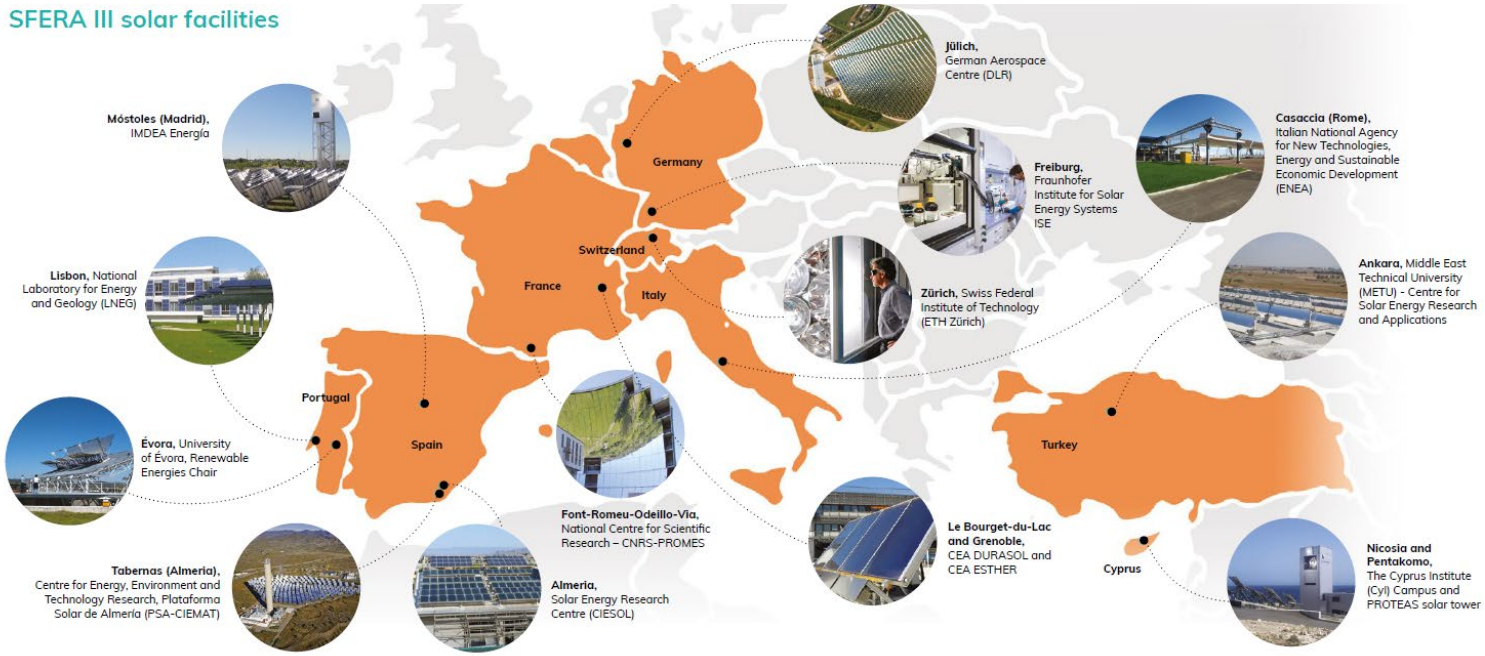
Joint Research Activities

Six research areas & activities are proposed and led by the R&D centers of the consortium:

- Solar desalination and water treatment facilities
- Systems for the production of solar fuels
- e-Infrastructure on CST technologies
- **Development of test procedures for materials and components of thermal storage systems**
- Properties of receiver materials at focal point of concentrated solar
- Sensor calibrations and techniques for accurate determination of performance parameters of prototypes installed in RIs



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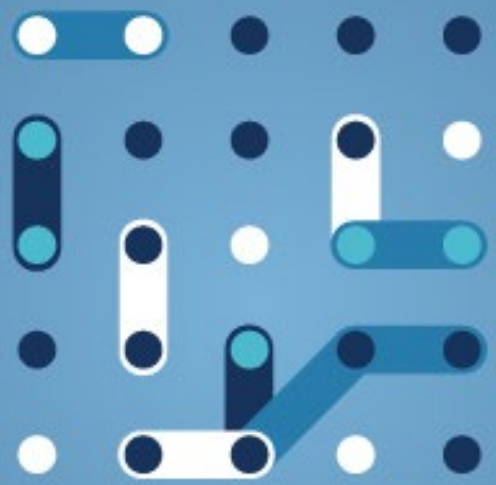
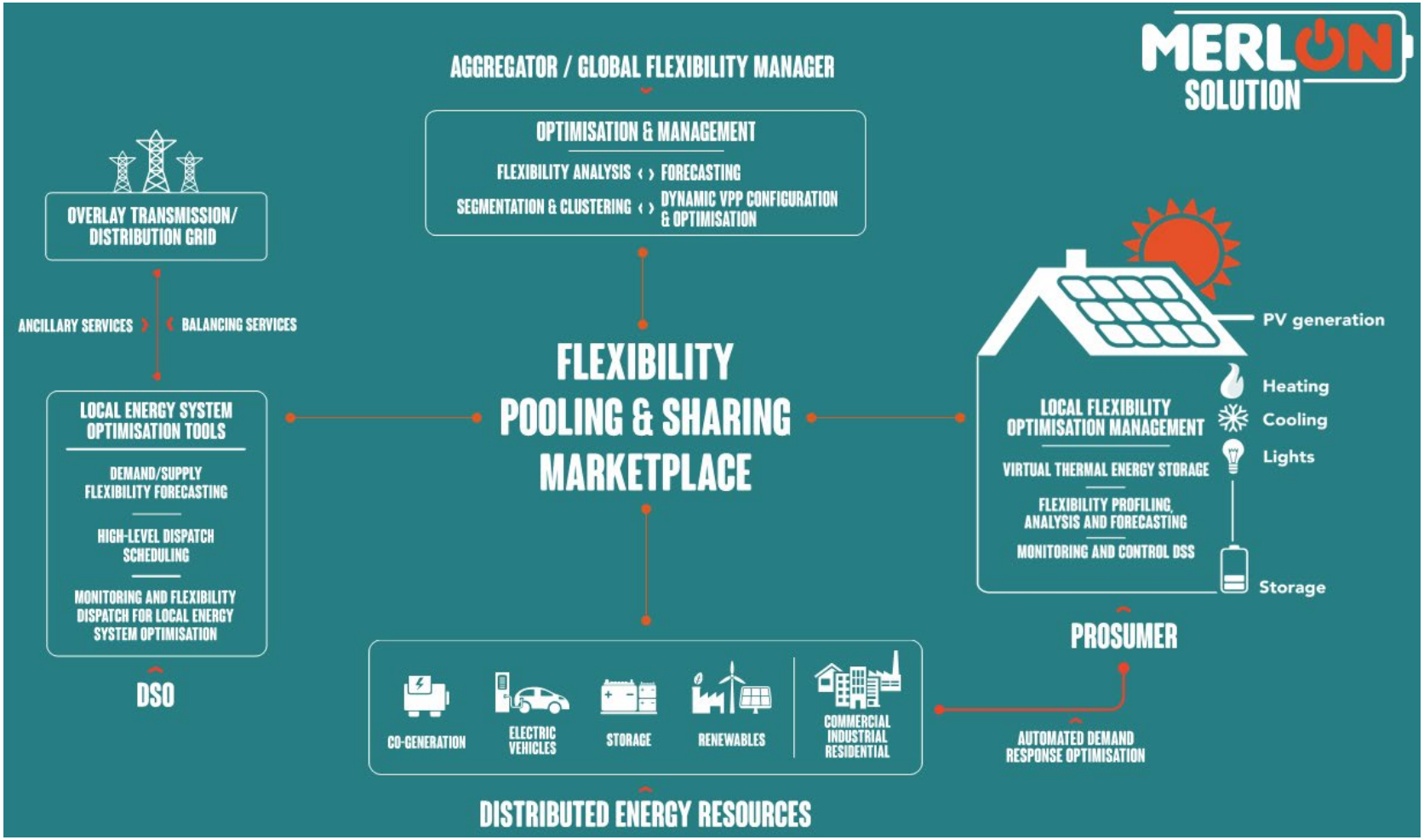
MERLON

Esteban Pastor



MERLON solution overview



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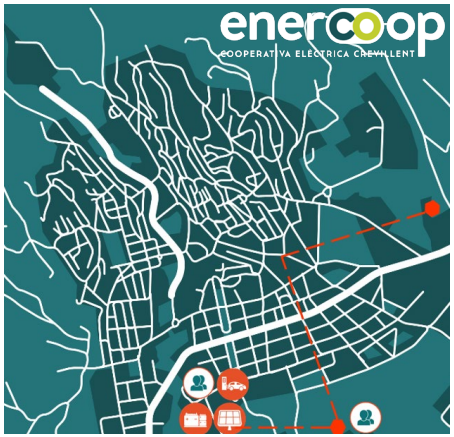
Community-owned storage in Crevillent

Cellular model of Crevillent's Local Energy Community

Achieved by forming a Local Energy Community replicating a Cellular Mobile Model with collective self-consumption installations that distribute energy to the Community in a collective way, similar to cells performance.

Each cell plays the role of "umbrella" and produces energy for the other electric consumers, which are in its field of action.



- The Pilot is located in El Realengo district.
- This district belowns to Crevillent town and it is located 2km from the downtown, east direction.
- El Realengo is a district with 321 residents.
- In 1950, 150 houses were built, organized around several public buildings.
- In 2007, San Francisco de Asís Electric Cooperative, built one of the biggest photovoltaic fields in Spain, with a total power of 13,5 MW.

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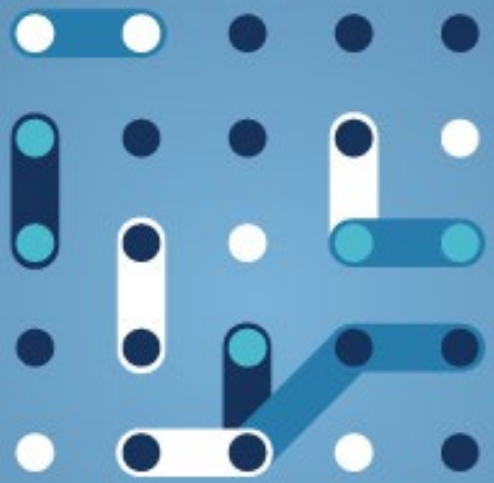
GIFT

Steiner Igor



GIFT project description

The GIFT project GA 824410 (Jan 2019 – June 2023) aims to decarbonise the energy mix of European islands through the development of innovative solutions.

RES penetration ***Visibility*** ***Synergies*** ***Hydrocarbon*** ***Replicability***

It will implement these solutions on two demonstration sites: Procida island (IT) and Hinnøya island cluster (NO).

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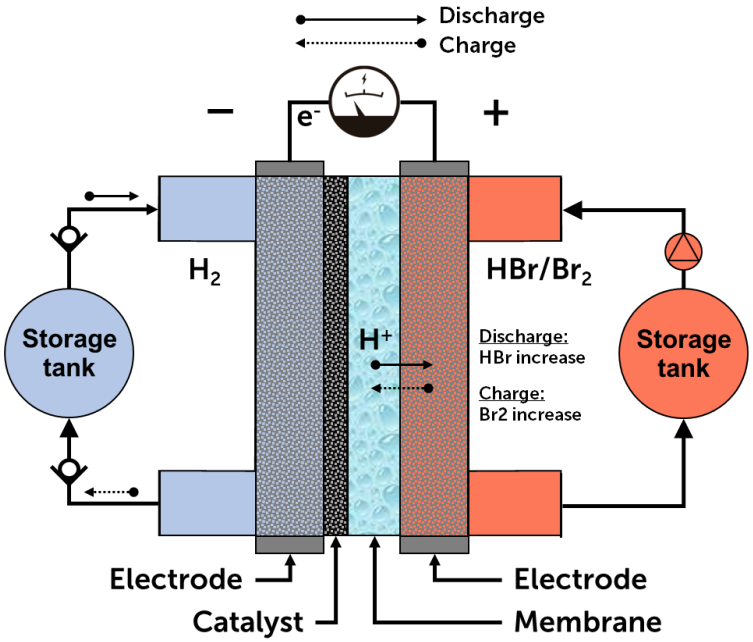
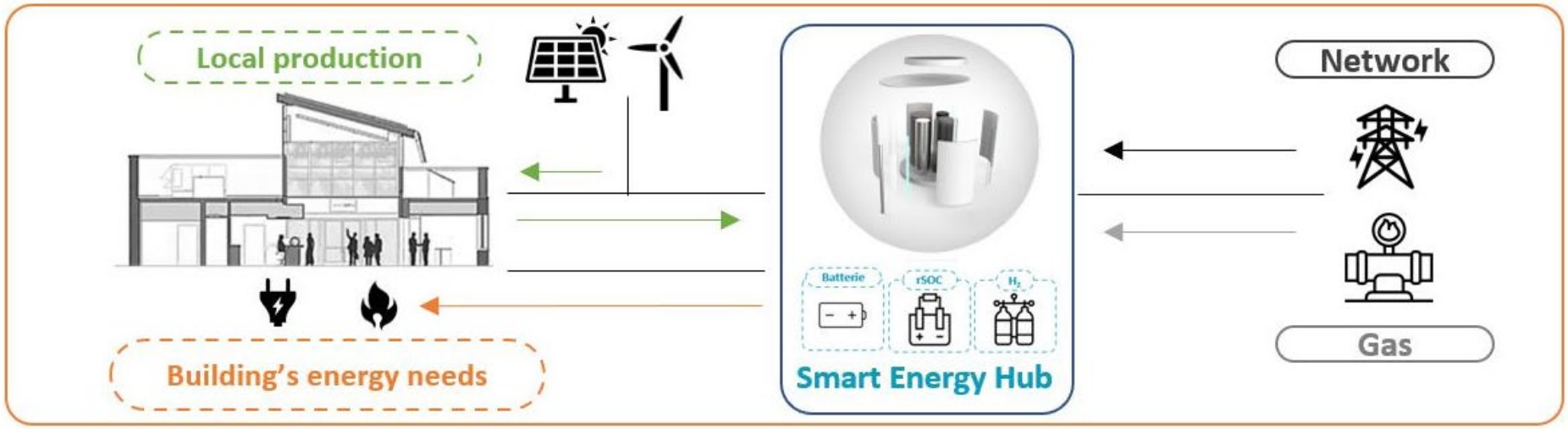
Elestor HBr flow battery storage system



- ***Working with hydrogen-bromine***
  (Abundant, cheap and fully recyclable)
- ***Chemicals are used, 100% reversible, not consumed***
  (Nothing goes in or out, except electricity!)
- ***Reactants do not degrade***
  (Neither with high 'Depth of Discharge')
- ***Negligible loss of capacity during lifetime***
- ***Power and capacity independent scalable***
- ***High power potential / High energy potential***
  (Very well suitable for longer duration storage like 10 hours or more)
- ***Upgradable and serviceable system***
- ***Potential to combine power and heat***
- ***Low-cost at large systems (LCoS < € 0.05 / kWh)***

Sylfen Smart Energy Hub storage system

Locally produced renewable energy → Hydrogen ↔ Electricity and heat



An rSOC energy processor (Reversible Oxide Fuel Cell) Electrolyser and Fuel Cell

Li-ion batteries for a highly responsive energy storage

Hydrogen storage for MWh of energy

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PANEL Discussion – 1st Point

- **Technology:**

Electricity storage -To what extent do BRIDGE projects embrace sustainable or longer duration electricity storage technologies [preferably developed in EU], which provide sufficiently high round-trip efficiency or demonstrate solid progress in the increase of round-trip efficiency? Which are these technologies? When Li-ion technology is used in BRIDGE projects, do they approach producers belonging to the European Battery Alliance? (especially recent projects)

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PANEL Discussion – 1st Point- Contribution from GIFT project

- **Technology:**

- The hydrogen-bromine flow battery is in general still underestimated,
- Abundant, cheap and fully recyclable chemicals,
- Upgradable and serviceable system

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PANEL Discussion – 2nd Point

- **Heat storage: to which extent do BRIDGE projects use novel heat storage technologies? What are the main challenges for these projects/technologies?**

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PANEL Discussion – 3rd Point

- **Location: How much does the location of storage facilities affect the energy efficiency of the electricity system?**

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PANEL Discussion – 4th Point

- **Regulation: Is there any storage technology whose potential for the energy system is underestimated and requires further policy support? Due to the complexity and many different storage technologies, to what extent could regulatory sandboxes help to their development? What are the main regulatory barriers for the demonstration of such projects?**

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PANEL Discussion – 5th Question

- **Economics: How can we ensure that storage investments are cost-efficient? What are the useful experiences of the BRIDGE projects [or concrete BRIDGE project]?**

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Conclusions

Patrick Clerens – Moderator

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