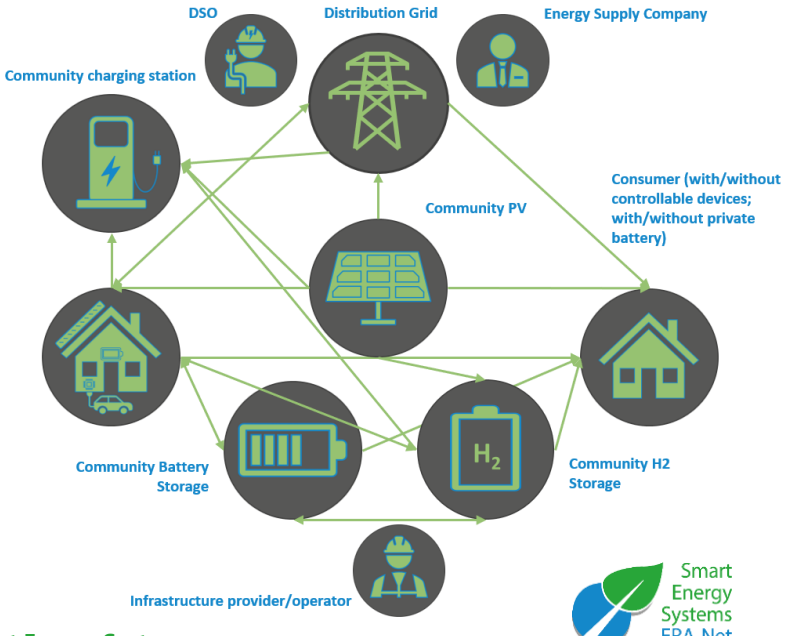
CLUE

Concepts, Planning, Demonstration and Replication of Local User-friendly Energy Communities

> *With strong pan-European cooperation among major players in energy ecosystem, CLUE will usher new solutions in Planning and Operation of Local Energy Communities.*

CLUE will acquire knowledge on optimized design, planning and operation of Local Energy Communities (LECs) and will develop a tool kit for planning and operation as key elements for successful replication and upscaling of LECs. Research and development will be executed on technologies with the focus on flexibilities and sector coupling for LEC energy systems, on services by developing business models and recommendations on improved regulatory framework and on stakeholder involvement by partnering with developers and service providers and integrating consumer, prosumer, and organizer of LECs in a living-lab concept. CLUE is executed by leading European research institutes, industry, and local partners, working together in five demo sites in four countries. By implementing and testing different technological and market solutions and executing a cross-country analysis, CLUE is able to develop optimized LEC solutions in dependency on country and site-specific framework conditions.



ERA-Net Smart Energy Systems

This project has received funding in the framework of the joint programming initiative ERA-Net Smart Energy Systems. The initiative has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements no. 646039 and no. 755970.

Project Duration
01.10.2019 - 30.09.2022

Project Budget
Total Budget: € 7,061,301.-
Funding: € 4,680,977.-

Project Coordinator
AIT Austrian Institute of Technology GmbH (AT)

Project Partners

- Energienetze Steiermark GmbH (AT)
- Siemens Aktiengesellschaft Österreich (AT)
- Naturpark Almenland (AT)
- Technische Universität Wien (AT)
- Fachhochschule Technikum Wien (AT)
- lab10 collective eG (AT)
- Energie Steiermark Kunden GmbH (AT)
- Fraunhofer- ISE (DE)
- E.ON Energy Solutions GmbH (DE)
- Fakt AG (DE)
- Malmö stad (SE)
- E.ON Energidistribution Aktiebolag (SE)
- E.ON Energilösningar Aktiebolag (SE)
- RISE Research Institutes of Sweden AB (SE)
- Lunds universitet (SE)
- Malmö kommuns parkeringsbolag (SE)
- Vasakronan AB (SE)
- Serneke Group AB (SE)
- ORE Catapult Development Services Limited. (UK)
- University of Strathclyde (UK)
- Smarter Grid Solutions Limited. (UK)

Project Website
www.project-clue.eu

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ERA-Net Smart Energy Systems Joint Call 2018

This project has been awarded funding within the ERA-Net SES Joint Call 2018 for transnational research, development and demonstration projects. EUR 33.4 Mio of funding have been granted to 23 projects from 16 regions and countries.

Main Objectives

CLUE aims to learn from the range of different challenges, prerequisites, and approaches of examined LECs. It targets determining the potential and impacts of different flexibilities in five demo sites and delivering meaningful proofs-of-concept through the integrated application of advanced tools, their integration into ICT architecture, and the interaction with surrounding electricity systems.

CLUE aims to develop and validate tools supporting the creation and operation of sustainable local energy systems and close the gap of missing tools, considering sector coupling, flexibilities, regional and coordinating cloud functionalities supporting the web-of-cell approach intuitive operation and information services.

Expected Main Results

CLUE aims to derive tailor-made transition paths for selected groups of LECs. CLUE targets intense stakeholder interaction in co-creation workshops to identify relevant drivers, success factors, and barriers. Further goals are developing transition paths and creating results on replicability, scalability, and the potential of new business models.

- The Austrian demonstration aims to integrate and verify flexibility potential from e-mobility combined with contact-less automatic charging, supported by the blockchain technology for clearing and implementing a central battery and hydrogen storage for short and long term storage, intelligent energy management systems, and flexible community tariffs.
- In Sweden, the demo aims to verify the flexibility potential from power-to-heat, batteries, and e-mobility obtained in a large-scale LEC consisting of multi-family houses and other building types enable to cope with a capacity limitation on the transmission side.
- In Germany, the demo aims to implement and test (in a mixed new-built retrofit district) a LowEx district heating and cooling system with a strong coupling of the electricity and heating system run by a smart energy management system. The design bears a significant flexibility potential via CHP, power-to-heat, a multi-faceted thermal storage concept, and e-mobility integration.
- In Scotland, the aim is to develop a Vector Integration Platform by integrating energy vectors from the Levenmouth offshore wind turbine and e-vehicles connected via vehicle-2-grid points to a local hydrogen microgrid. The demo seeks to address communication and resilience challenges within local energy systems at a local level, and then develop the identified solution to ensure its scalability and replicability at a national and regional level.

Joint Programming for Flourishing Innovation from Local and Regional Trials towards a Transnational Knowledge Community

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