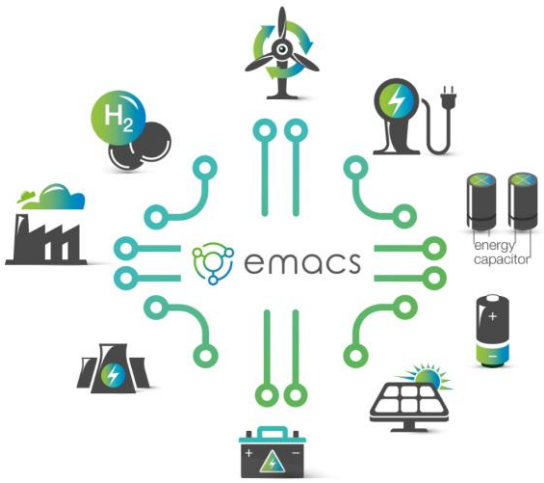
MESH4U

Multi Energy Storage Hub For reliable and commercial systems Utilization

> *Develop and test multi energy storage hub solutions for flexibility operation from end cutomers in the local grids*

The MESH4U aims at developing and testing multi-energy storage hub solutions for the operation of flexibility from end customers in the local grids, via SMEs/Industry up to the Energy/Distribution System Operator. The objective is to enhance the reliability and profitability of energy supply while offering more flexibility and cost efficiency to the modern distribution power grids.

The MESH4U solutions will be implemented in 4 demonstra-tors in different countries to test use cases and applications of multi-energy storage hubs within different infrastructures, systems' size, and regulatory and market conditions. With these new concepts the added value for each region can be calculated and be practically validated, taking into account the techno-economic and social aspects and other frame-work conditions.



Project Duration

01.02.2021 - 31.07.2023

Project Budget

Total Budget: € 3 563 275
Funding: € 1 872 260

Project Coordinator

Electrum sp. z o.o. (Poland)

Project Partners

- Wroclaw University of Science and Technology (Poland)
- Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.(Germany)
- Upside Consulting GmbH (Germany)
- Arte Möbel GmbH (Germany)
- University of Rome Tor Vergata (Italy)
- École Polytechnique Fédérale de Lausanne (Switzerland)
- GridSteer, c/o Fondation EPFL Innovation Park (Switzerland)
- Romande Energie SA (Switzerland)
- GOtthard FASTcharge Ltd (Switzerland)

Project Website

https://mesh4u.energy

Contact

Karol Lapinski
klapinski@electrum.pl
mob.: +48 503-196-032

ERA-Net Smart Energy Systems Joint Call 2019 (MICall19)

This project has been awarded funding within the ERA-Net SES Joint Call 2019 for transnational research, development and demonstration projects. EUR 16.5 Mio of funding have been granted to 14 projects active in 15 regions and countries.

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.

Main Objectives

Control and operation solutions: new optimal algorithms for planning and operations of the multi-energy storage hub, operation strategies, algorithms with multi-aim functions, forecast, paths of energy conversion, and storage

Technology solutions (hardware and software):tool for designing flexible and scalable architectures of the energy hub using various energy storage technologies.

Market realization solutions: country-oriented business models, including cost efficiency, identified market barriers and gaps as well as open paths for economic operation of the Mesh4U solutions

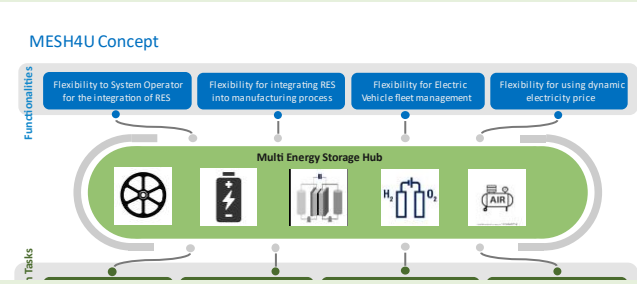
Demonstrations of MESH4U functionalities:

•Poland Demonstrator: to support and maximize effects resulting from renewables in industry, the public and the power grids.

•German Demonstrator: to support industrial production processes of SMEs, as well as offering additional services to DSO.

•Italian Demonstrator: Lab validated optimal strategies for e-vehicle fleets to scale-up German Demonstrator results, optimizing e-vehicle use and renewable integration.

•Switzerland Demonstrator: to control and coordinate of renewables-fed medium-voltage grids including battery storage system and EV fast-charging stations connected to a 20kV grid ho sting a multi-MW PV and small hydropower plants.



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

www.eranet-smartenergysystems.eu

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Wrocław University of Science and Technology

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