EMBS

Energy Management Building Set

A new European market will be established to support local regulations and market environments ... use of standard protocols guaranties the functionality and technical interoperability

The EMBS project develops an innovative, integrated control and planning system for operators to support demand-response operations and optimization for multi-utility and multi-energy devices and installations. Based on the EMBS architecture users and operators of such systems (energy suppliers, aggregators, energy service providers, ...) will be able to scale and map as well as operationally manage and control their installations and devices in an optimized way.

The main goals of the project are:

- Prototyping and validation of functional business models based on data from user consumption.

- The optimal sizing and combination of multi-utility systems for new business cases (planning module).

- Developing a TRL 5-7 ICT architecture for the real-time control and optimization of CHPs, batteries and heat buffers.

- Designing the control and communication architecture in a highly modular and interoperable way.

- Validation of the outcome in a German demonstrator in compliance with the respective national regulations and markets.

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Project Duration

01.08.2017 - 31.03.2020

Project Budget

Total Budget: € 1,367,492.-
Funding: € 791,582.-

Project Coordinator

Salzburg Research
Forschungsgesellschaft (AT)

Project Partners

- S&T (AT)
- Fraunhofer Institute for Wind Energy and Energy System Technology (DE)
- OVE Objekt-Versorgung mit rationellem Energieeinsatz GmbH & Co. KG (DE)

Project Website

srfg.at/embs

Contact

Thomas Pfeiffenberger
thomas.pfeiffenberger
@salzburgresearch.at

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Main Objectives

Intelligent usage and management enables the exploitation of combined heat and power (CHP) for offering system relevant services, e.g. for balancing of fluctuating power generation and consumption.

In general today's systems are not designed for this purpose. They are heat generation driven with the objective to run permanently. Based on the fluctuating power demand in the grid an intelligent operation mode for CHP is needed, which jointly optimizes power and heat generation. This is necessary for harvesting the potential of CHPs.

This will also allow expanding current possible business models if different price structures and new decentral technologies are integrated into the existing installations.

Potential new systems are for example latent heat storage systems or battery systems which would allow a further de-coupling of heat and power demand from the local generation.

Main Results

The project aims at providing the necessary technology as well as evaluating how this new technology can increase the value of decentral power and heat generation under different use cases.

Thus, the development of the EMBS has the main objective to offer smart grid stakeholders such a comprehensive future-oriented demand-response solution. This new solutions are validated in a real user installation with CHPs, batteries and heat buffers.

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http://www.eranet-smartgridsplus.eu

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