



m2M-GRID

From micro to Mega-GRID: Interactions of micro-grids in active distribution networks

” *m2M-GRID enhances electric power system operation by bringing micro-grid technologies together and providing tools for interaction and exchange of electricity.*

Magnus Brolin (RISE), Coordinator of the m2M-GRID project

Micro-grids have the potential to accelerate European smart grid adoption processes by providing a strong link between power technology research and energy market development.

However, a widespread adoption of micro-grids in the distribution level of the power system is facing challenges by current structures. One of the main issues is that the bottom-up technologies in micro-grids need to coexist with top-down grid control systems and market models.

The project “From micro to Mega-GRID” (m2M-GRID) will develop solutions to overcome these challenges within the following themes:

- Enhancement of the distribution grid planning process;
- Development of control functions for effective coordination with distribution grids;
- Development of a tool-box to exploit the potential flexibility of micro-grids.

The results will be validated in a range of test environments. Three dedicated demonstration sites – one in France and two in Sweden - will facilitate validation and replicability analyses based on real conditions.

Project Duration

01.02.2017 - 31.03.2020

Project Budget

Total Budget: € 2,957,057.-

Funding: € 2,016,282.-

Project Coordinator

RISE Research Institute of Sweden (SE)

Project Partners

- Technische Universiteit Eindhoven, TU/e (NL)
- Commissariat à l’Energie Atomique et aux Energies Alternatives (CEA) (FR)
- Grenoble INP G2Elab (FR)
- SOREA ZAC du Pré de Pâques (FR)
- Chalmers Tekniska Högskola (SE)
- Göteborg Energi (SE)

Project Website

www.m2m-grid.eu

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Main Objectives

The overall goal of the m2M-GRID project is to enable the coordinated operation of micro-grids and distribution systems, thereby increasing overall system efficiency. The following main objectives have been defined to achieve the overall goal:

- Development of a new physical test site and specification of functional requirements for micro-grid interoperability;
- Development of interfaces to ensure interoperability and to enable bottom-up control of physical micro-grids;
- Development of interfaces to enable management of commercial micro-grids, aligned with existing and future market models to maximise system benefit;
- Enhancement of the network planning process to also consider multiple micro-grids, decentralised control as well as their potential flexibility.

Main Results

The main results of the m2M-GRID consists of:

- Interfaces to integrate micro-grids in grid operations and procure grid support services;
- Business cases for micro-grid operators and aggregators as well as for end-users providing flexibility;
- Innovative solutions and control algorithms for the seamless coordination of micro-grids.

From Local Trials towards a
European Knowledge Community

<http://www.eranet-smartgridsplus.eu>

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This project is part of the 2nd Joint Call for transnational RDD projects of the ERA-Net Smart Grids Plus initiative. EUR 13 million of funding have been made available to 9 projects from 8 regions/countries.

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