



my**Power**Grid

## DISTRIBUTED ENERGY STORAGE

Wachstum durch Innovation – EFRE



Das Forschungsprojekt „myPowerGrid“ wurde von der Europäischen Union aus dem Europäischen Fonds für regionale Entwicklung und vom Land Rheinland-Pfalz kofinanziert.

### Aggregates distributed energy storages

- Provides operating reserves
- Provides active power factor correction
- Participates in energy stock exchange

### Maximizes PV on-site consumption

- Saves excess energy to be retrieved again later
- Increases revenue based on local renewable energy acts

### Promotes the expansion of renewable energies

- Saves energy where it is generated
- Peak-shaving of PV feed-in
- Grid relief increases power supply reliability

### Local energy management system – Global ICT platform

- Drives battery based on power forecasts
- Optimizes battery usage based on economically and ecologically sensible strategies
- Provides electric utilities, transmission system operators and virtual power plants with access to the distributed energy storage

### Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM

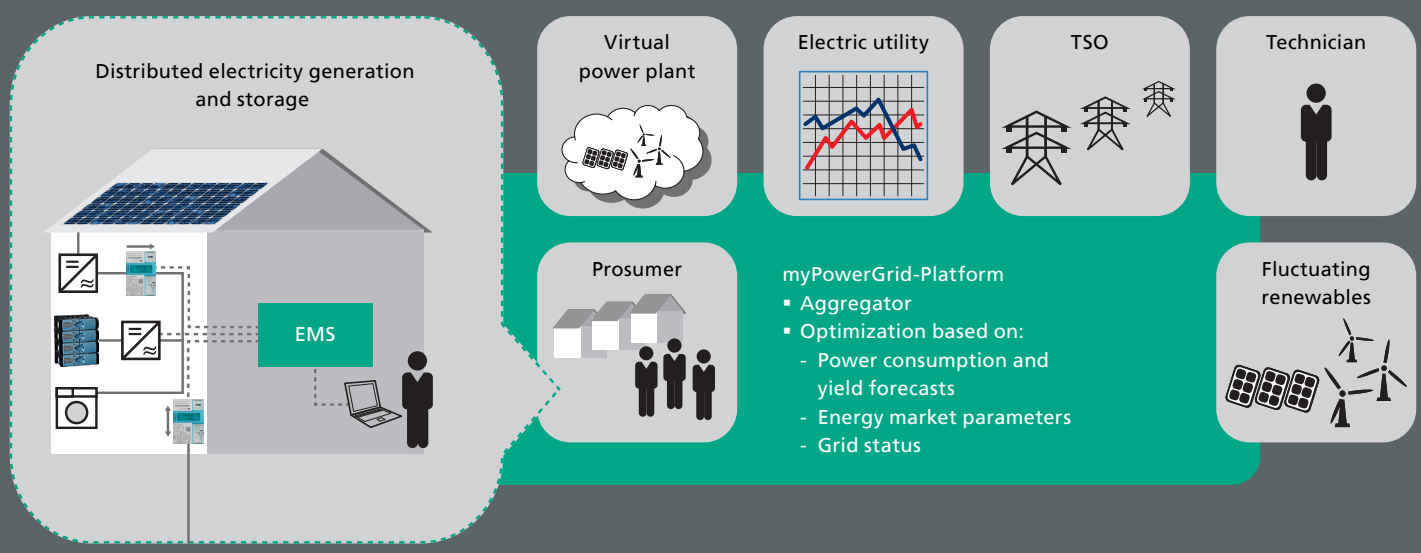
Fraunhofer-Platz 1  
67663 Kaiserslautern  
Germany

#### Contact

Matthias Klein  
Phone +49 631 31600-44 75  
matthias.klein@itwm.fraunhofer.de

[www.itwm.fraunhofer.de](http://www.itwm.fraunhofer.de)

[www.myPowerGrid.de](http://www.myPowerGrid.de)



The myPowerGrid project focuses on developing required technologies as well as business models for a distributed, battery-based energy storage and its integration into a virtual power plant.

In the near future, private households or SMEs will save their excess self-generated energy in local battery-based energy storages to be retrieved again at a time of the owner's own choosing.

Within the myPowerGrid project, we are developing an infrastructure and business models to make the best of this newly gained flexibility. An Energy Management System (EMS) installed on-site will keep track of various device parameters and oversee the charging and discharging of the storage according to a user-selected schedule. Such a schedule may be optimized for maximized on-site consumption (e. g. in accordance with local Renewable Energy Acts such as the German EEG and the Eigenverbrauchsregelung), minimized peak load, active power correction or other economically and ecologically sensible strategies.

These schedules may be obtained by the EMS from the global myPowerGrid platform. The platform optimizes the various schedules through advanced forecast methods based on environmental, grid status, and market parameters.

In the other direction, the myPowerGrid platform has the ability to consolidate any number of local storages to a single large virtual battery. In the setup of a cooperatively-held energy storage, this virtual resource may, through the platform, enter in larger-scale corporate relationships with transmission system operators and electric utilities and virtual power plants. The storage consolidation also helps technicians to diagnose and, in some cases, fix problems with the local constituents remotely.

Overall, myPowerGrid delivers a centralized, easy-to-use management infrastructure for an aggregated distributed energy storage transparently serving the interests of both corporate and private stakeholders.