

DEMO 6 – Germany

Grid stabilisation through batteries and bidirectional electric vehicle charging



DEMO LEADER:
KARLSRUHE INSTITUTE
OF TECHNOLOGY (KIT)



Karlsruhe
Germany



Domain

Electricity, Heat,
Mobility



Partners Involved

Karlsruhe Institute of Technology, FZI Research Center for Information Technology, Stadtwerke Karlsruhe GmbH, BES – Badische Energie-Servicegesellschaft mbH

“The Karlsruhe demo tests how smart energy districts can actively support the grid by combining local energy use, dynamic price response, and grid stabilisation through batteries and bidirectional electric vehicle charging”



[weforming.eu
/demo-6-germany](https://weforming.eu/demo-6-germany)



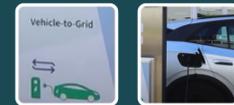
KEY TECHNOLOGIES

Solar energy is produced collectively, shared fairly among users, stored when surplus, and managed digitally for maximum community benefit.

Local Grid Measurements



Bidirectional



PV Generation & Tenant Load Measurements

Metadata

WeForming
THROUGH THE
MIDDLEWARE

Electricity Prices

Metadata

Metadata

Machine Learning Forecast & Optimisation

Stationary Batteries



TECHNICAL CHARACTERISTICS



District Size

- 124,200 m²



Local Generation

- 233 kWp photovoltaic capacity



Battery Storage

- 180 kWh, 90 kW outdoor battery storage system



Buildings

- 9 buildings
- Offices, mixed-use & residential
- 200+ individual tenants



Mobility

- 26 optimised EV charging points
- Including 4x 22 kW bidirectional charging stations

WeForming

IMPACT

- Active grid stabilisation from buildings
- Smarter use of renewable energy
- Lower energy costs through optimised charging
- Scalable model for future smart districts
- Buildings become active contributors, not passive consumers