

1. Dispower – Am Steinweg (Germany)

2. What is integrated with DSM

DG

Energy storage

Smart grid technologies

3. What is the level of commercialization

Research project

Demonstration

Field test

Existing practice

4. Where to find more information?

IREC, <http://www.ired-cluster.org/>

5. Objectives of the case

To test a virtual power plant with a maximum time of zero energy flow to the grid.

6. Business rationale/model

7. Technologies used

Integrated management system (PoMS) controlled via Internet

Co-generation plant (28kW) with heat storage

Several photovoltaic systems (total of 35kWp)

Battery system (880Ah) with a bidirectional inverter

Email and phone to contact households

8. Short description of the case

9. Achieved/expected results (operational savings, CO<sub>2</sub>, efficiency enhancement)

DISPOWER results in this pilot installation have shown that, with intelligent management, distributed generation can be integrated into the grid successfully and can improve power quality as well as economic operation of the settlement's energy supply. The settlement is well prepared for further experiments for the high penetration of renewable energies and distributed generation – both from the socio-economic and technical aspects. The next challenge will be to reduce the cost of the ICT and energy management system in order to make it available for large-scale use.

10. Lessons learnt

22 families participating in the experiment “washing with the sun” were received a message via mobile phone or e-mail that they should use their washing machine within a specified period of time – when the team expected high energy yield from the Photovoltaic (PV) systems. They were also receiving a financial incentive for doing so. As a result, the families reacted very well. In a next step, this reaction will be supported by intelligent control devices.