# SHOWCASE

**Project name**: PEER ENERGY CLOUD: "WHEN WASHING MACHINES TALK TO POWER STATIONS"

**Description**: The Peer Energy Cloud consortium, comprised of the German Research Centre for Artificial Intelligence (DFKI), the Karlsruhe Institute of Technology (KIT), security and public safety solutions organization AGT Germany, business integration and managed file transfer solutions and cloud computing provider SEEBURGER AG, and the public utility company Saarlouis, was the first prize winner in the "Trusted Cloud" research programme sponsored by the German Federal Ministry of Economics and Technology.

The Trusted Cloud program aims to unlock the potential of cloud computing for the economy and to promote the development and testing of secure, reliable, and legally compliant cloud computing services.

Peer Energy Cloud was established in order to investigate innovative recording and forecasting procedures for device specific electricity consumption (i.e. looking at how the load profile develops with the aim of optimizing the load flow), to establish a virtual marketplace for power trading, and to develop value added services within a microgrid. In practice, this means coordinating the power consumption in private households with generation capacity in the power stations, in order to balance the demand and supply and thereby reduces stress on the grid. Private households consume around one-third of the power produced by power stations. At present, however, it is not possible for the power supplier to measure actual power requirements at a specific time for particular consumers, and standard load profiles are too imprecise.

Consequently, the load curve is hard to optimize, and the grid has to be oriented towards the possibility of maximum loads, with back-up power stations ready as needed for overloads. Within the project, SEEBURGER AG as coordinator enables a new type of marketplace for peer-to-peer power trading. This will, for example, distribute sensor and power data for reliable value-added services, enabling it to be put to use for purposes such as improving building energy efficiency monitoring. Such a bottom-up approach should help to increase the overall network stability and reduce the need for costly upgrades to the nationwide grid infrastructure. The project is based on the "B2B in the cloud" approach used in the THESEUS research program, and includes a field pilot, which Saarlouis undertakes in 500 households.

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