



NL Agency
Ministry of Economic Affairs, Agriculture and
Innovation

PowerMatching City II

Experimenting with Intelligent Networks

Aim

The follow-up to Power Matching I is aimed at the application on a larger scale of smart energy services at total concept level.

Vraagstukken

- How can we incorporate intelligent networks into the energy company's processes?
- How do we match energy services to the users' wishes and needs?
- How do we achieve optimum capacity management with an intelligent network?
- How do we validate business cases which were made feasible in the Power Matching I project? Companies can test new products in a test centre.

Running time

3 years from September 2011

Project partners

- DNV KEMA - This energy knowledge company is providing the project leadership, the management and the expansion of the trial.
- HUMIQ Advanced Software - This software company is responsible for the design, execution, management and maintenance of the ICT and database.
- TNO - This research institute is providing the PowerMatcher agents (software).
- Essent - This energy supplier is focusing on the processes relating to economic traffic, the smart charging of the electric vehicles and the energy services to end-users.
- Enexis - The network operator (formerly Essent Netwerken) will deal with capacity management in the distribution network.
- Gasunie - This gas infrastructure company is making a financial contribution.
- TU/e (Electrical faculty) - The faculty is providing the models for capacity management and the integrity of the electricity supply.
- TU Delft (Industrial design faculty) - This faculty is arranging the end-user research.
- Hanzehogeschool - is contributing to the end-user research.

The world's first trial with a smart energy network was launched in the village of Hoogkerk in Groningen in 2009: PowerMatching City I, with 22 households, HRe boilers, hybrid water pumps, solar PV systems, 'smart' devices and 2 electric vehicles (EVs). This project was completed successfully and is now getting a follow-up: PowerMatching City II, with an additional 20 to 50 households, some 20 electric vehicles (EVs) and 2 smart distribution transformers. Hoogkerk is thereby gaining practical experience with new tariff structures and the feeding in of renewable energy into the network, amongst other things.

Smart energy network created

"What should the energy system of the future look like? That is the question that we are trying to answer with the PowerMatching City trial," explains Albert van den Noort, specialist in smart grids and project leader at DNV KEMA. The first trial with 25 homes showed that it is possible to create a smart grid or energy network with the associated market model using existing technologies. The system enables consumers to exchange electricity freely and the level of comfort is maintained.

New energy services

“With PowerMatching City II we are looking at how intelligent networks can be incorporated into the energy company’s processes, from reading the meter through to billing,” says Van den Noort.

“For example, there are tariffs which can change every 5 minutes instead of a fixed tariff. That requires new sorts of bills. We are thereby devoting considerable attention to the end-user’s requirements and wishes with regard to such services and systems. We want to gain an insight into those.”

Capacity management

“PowerMatching City II is also addressing the problem of capacity management: how can you ‘feed in’ large quantities of renewable energy into the network?” explains Van den Noort. The project is also playing a ‘springboard role’: companies get the opportunity to test their products and services. Hence NXP will be building computer chips into electric scooters in order to be able to charge them smartly. iNRG will be experimenting with the communications between HRe boiler and water heater tank, which makes it possible to break the link between the demand for heat and electricity

production. “We have already made great progress,” claims Van Noort. “We already have a working smart grid and an infrastructure. That is why we are now able to take the next step.”

More information

If you would like to know more about the approach to PowerMatching City II or the latest developments on the project, please contact Albert van den Noort, project leader for PowerMatching City at DNV KEMA, via albert.vandennoot@kema.com or call +31 (0)50 700 97 84.

Intelligent Network Trials

Innovating with energy

The aim of the Intelligent Networks innovation programme (IPIN) is to accelerate the introduction of intelligent networks in the Netherlands. In twelve trials we are gaining experience with new technologies, partnerships and forms of collaboration. The results of the trials are helping to resolve important issues relating to intelligent networks, such as the needs of consumers, new business cases and new laws and regulations. We are thus working cost-efficiently towards the large scale application of these networks.

For more information see:
www.agentschapnl.nl/intelligentenetten

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