Netherlands Enterprise Agency

Electric transport and decentralised electricity generation

Smart Grid Pilot Projects – *Results as of September 2015*

Innovation programme commissioned by the ministry of Economic Affairs

- Local electricity grid on DC voltage
- **Electric transport and decentralised electricity generation**
- Energy-neutral Heijplaat
- Modular smart grid for business parks
- Smart grid and energy transition in Zeewolde
- ProSECco examines four user groups
- Smart grid in sustainable Lochem
- Smart heat grid on TU Delft campus
- Your Energy Moment
- Couperus Smart Grid
- Cloud Power Texel
- PowerMatching City II

Goal
- Develop a smart grid whereby locally generated renewable energy can be used directly by electric vehicles or stored in batteries.

Issues
- Will enabling businesses to actively participate in energy generation stimulate the market to embrace electric vehicles and renewable energy?
- How can we encourage businesses and consumers to change their energy behaviour?
- Can we create a new trading network for locally generated energy that complies with the legal framework and the requirements with regard to security of supply?
- What commercial opportunities will this create for the project partners?

Duration
- January 2012 through January 2014.

Project partners
- ProxEnergy, Stedin, ABB Epyon, GreenFlux, TU Delft, Erasmus University Rotterdam, VITO, Greenchoice, ADEM, Mitsubishi Motor Sales Nederland.

The project partners in Electric Vehicles and Distributed Energy Resources (EVANDER) wanted to add a new dimension to energy consumption and mobility. They established a pilot project in Eindhoven to encourage the use of locally generated solar energy in electric vehicles using a smart electricity grid. They found solutions for local energy storage and attempted to establish a cooperative in order to encourage businesses and consumers to actively manage their energy supply and demand.

Results

At Strijp-S, a former Phillips complex near the PSV football stadium in Eindhoven, EVANDER initiated a project to implement a smart grid and establish an energy cooperative in a business park. Strijp-S was considered a suitable location for a pilot project because it actively participates in sustainable development projects and is already home to a number of innovative SMEs. However, the plans were not fulfilled during the pilot phase because the project group could not reach agreement with the Municipality of Eindhoven. Moreover, the likelihood of the project succeeding had already been reduced by earlier setbacks and they did not think they could achieve the desired results in the time remaining. Consequently, the project was terminated prematurely. Nevertheless, alongside producing academic publications, the project succeeded in designing a smart energy management system that does not only align supply and demand, but also includes a module for financial settlement between the partners in an energy cooperative.

Lessons

EVANDER was confronted with the first bottleneck early on in the project. The original plan was to deploy the electric vehicles as taxis, but this proved to be commercially unfeasible. The cars are viable for small commercial use, but not as taxis, because in cold weather they have to be recharged twice per shift and there is not enough time for that during the day. Moreover, investing in solar power to reduce energy costs is mainly interesting for consumers, and not businesses. Electric transport is an interesting proposition for commercial parties because they can apply for tax relief schemes such as the EIA (Energy Investment Allowance). A new business case was developed whereby private parties could invest in solar panels installed on commercial properties and the energy generated was distributed in the form of a battery charging service. However, this plan came into difficulties as well; business owners were reluctant to invest in renewable energy because of the economic crisis.

Plans for the future

There is no technical barrier to generating energy at location A and consuming it at location B, and it is administratively feasible too. However, the law sees this process as the commercial supply of energy, which means that the Regulatory Energy Tax and VAT have to be charged over the energy provided. This law currently hinders many renewable energy projects. The Regulatory Energy Tax and VAT are only exempt for major customers who purchase energy for several users under a single invoice. Despite the setbacks, the concept of making energy available in the form of a battery charging service still has a future. This concept could be implemented throughout the Netherlands and is a new dimension in mobility. The biggest challenge is to change user behaviour: how can you stimulate people to take a different approach to mobility?

More information

If you would like to find out more about the EVANDER method you can contact ProxEnergy at *info@proxenergy.com*.

Smart Grid Pilot Projects: energy innovations
The goal of the Smart Grid Innovation Programme (Innovatieprogramma Intelligente Netten – IPIN) is to accelerate the introduction of smart grids in the Netherlands. The Netherlands Enterprise Agency (RVO.nl) carried out the project for the ministry of Economic Affairs. Over the past years, twelve different pilot projects have gained learning experiences with new technologies, partnerships and methods. The pilot phase has now been completed, but most of the projects will be continued. Via RVO.nl they share their experiences, particularly concerning the five key themes involved in smart grids: legislation and regulations, user research and user participation, vision, standardisation and new products and services. The goal is to achieve widespread roll-out via the path of experimentation.
More information: *www.rvo.nl/intelligentenetten*

This is a publication of:
Netherlands Enterprise Agency
Croeselaan 15 | 3521 BJ Utrecht
PO Box 8242 | 3503 RE Utrecht
T +31 (0) 88 042 42 42
F +31 (0) 88 602 90 23
E ipin@rvo.nl

www.rvo.nl/intelligentenetten

This publication was commissioned by the ministry of Economic Affairs.

Publication number: RVO-095-1501/FS-DUZA

NL Enterprise Agency is a department of the Dutch ministry of Economic Affairs that implements government policy for agricultural, sustainability, innovation, and international business and cooperation. NL Enterprise Agency is the contact point for businesses, educational institutions and government bodies for information and advice, financing, networking and regulatory matters.

Netherlands Enterprise Agency is part of the ministry of Economic Affairs.