

How successful are the business cases of Dutch solar energy communities? EU Heroes projects share their experiences

In various places in the Netherlands, citizens are joining forces to form energy communities. Sometimes as pioneers inspired by fiery idealism. Sometimes by seeking guidance and support from professionals to prepare for the energy transition. On Thursday 11th June 2020, three projects shared their experiences during an online seminar organised by EU Heroes. The European project has developed a tool to assess the value of their business cases. What did we learn? That energy storage, demand-side management and heat networks can offer added opportunities.

Under the EU Heroes project a number of energy communities are being analysed. How do they present themselves in terms of energy and economics? Which business model would be most suitable? The Netherlands is participating in the project with no less than three projects, made possible due to the Dutch regulatory sandbox (*“Experimentenregeling”*), which allows owners’ associations and cooperatives to deviate from the Electricity Act for a pilot. Now that the EU Heroes project has finished compiling the study results, the projects can share their experiences.

Idealists in Olst

One of the projects is the so-called 24 ‘Earth Houses’ (*Aardehuizen*) in Olst. “We built this ecological neighbourhood with our own hands”, says resident and Head of Technology Ferdi Hummelink. “Since 2013, we have been generating 80,000 kWh per year via individual PV systems, amounting to 80% of our electricity demand.” The ‘earth housers’ plan to build solar panels on a currently not-yet-built carport, to help increase the generation capacity, and they will store this energy in an experimental sea salt battery. “With a smart grid, we want to gain experience with peak reduction and demand-side management.”

Professional support in Veghel

The decentralised generation on the former campus of Zwijsen College in Veghel is a very different type of project. Here, it is not the residents but project developer Gerald Kirsten who has taken the lead. A collective PV system of 200 kWp supplies power to each household via an energy management system. “The PV system meets 30 to 40% of the electricity demand. We also have heat pumps, which offer the added advantage that you can use the heat to influence the electricity peak load very efficiently.”

Trendsetters in the Hague neighbourhood

Willie Berentsen is a resident of the ecological neighbourhood of Groene Mient in the Hague and a board member of the energy cooperative Sterk op Stroom. With 400 panels of more than 100 kWp in total, in addition to solar thermal systems and heat pumps, the 33 homes are zero-energy homes. “But we also want to get the rest of our post-war neighbourhood on board. The goal is to supply solar energy to 3,000 homes in the Vruchtenbuurt neighbourhood by 2030.”

Improved business case with storage and demand-side management

The three projects have been closely studied under the EU Heroes project. It appeared that there were some differences in pay-back periods, based on the current netting rules: ranging from seven years for the Groene Mient to four years for the Earth Houses. “This

is because we assembled the installation ourselves”, says Hummelink. The study showed that energy storage and demand-side management led to improved business cases. “The conclusion is that you do not necessarily need to have a large battery”, says Wido van Heemstra, adviser at RVO. “Storage of about 30% of your daily energy consumption is ideal. This means you can make use of twice as much generated energy than would have been possible without storage. This percentage also applies to demand-side management, with the difference that you don’t need to invest in a relatively expensive battery.”

Upscaling bottlenecks

With or without storage or demand-side management, the three projects are successful in terms of both energy generation and financing. But Kirsten emphasises that upscaling at the local, regional and national levels is very different. “Then we run into the limitations of existing buildings, metering costs and laws and regulations. Moreover, the energy transition is primarily a heat transition. Heat networks will help us reduce our dependence on natural gas, using low temperatures to limit heat loss. Moreover, these networks also help balance the demand for electricity.”

Pilot projects as inspiring examples

Berentsen would also like to gain experience with a local heat network in the Hague. “For us, the question is how we can persuade the many small neighbouring owners’ associations to join.” Hummelink sees above all the ‘earth housers’ in the role of energy supplier. “We would like to investigate, for example, how we can deliver surpluses to a nearby neighbourhood and set a price for this via blockchain.” According to Van Heemstra, that is the strength of the three pilot projects. “They primarily show what you can do by yourself. As an enthusiastic citizen, such as the Earth Housers. As a trendsetter in the city of the Hague, such as the Groene Mient neighbourhood. Or with full professional support, such as at Collegepark Zwijsen. All these projects are inspiring.”

More information

[EU Heroes](#)

[Electricity Act Experiments sample projects](#)