

Pilot project Panningen center - Peel and Maas

We talked about the Panningen Centrum pilot project with Ruud van den Bosch. He has been working at heat project developer [GroeneWarmte](#) (formerly Ecovat) for seven years.

Context Peel and Maas

Ruud van den Bosch says of the Panningen context: "This pilot project was initially a residents' initiative from the local energy cooperative Peel Energie, which (partially) operates wind farm Egchelse heide. At the end of 2018, this energy cooperative asked GroeneWarmte to conduct a feasibility study for a collective system. That study was co-financed by the municipality of Peel and Maas and the province of Limburg. Subsequently, a PAW application was submitted in 2021 and obtained in March 2022. Most of the PAW subsidy money is dedicated for home improvement. That is, insulation, gap sealing and modification of the heat emitting system, such as modifying existing radiators. Each home is scanned to determine what is needed to make it 'connection-ready'. The energy cooperative has trained 15 energy coaches who go into the neighbourhood to provide residents with general information, and to do the home scans. Based on the scan, residents are presented with several options to choose from, including budgeting and associated financing options."

The project consists of a system for supplying heat and cold, phasing out local natural gas consumption as quickly as possible, minimizing the need for power from the grid, and all at the lowest possible cost, among other things through tight planning.

"The municipality of Peel and Maas is not a client in this project but agrees to the plans provided there is sufficient support among the population. The support is there. This is evident, among other things, from the results of a survey of 3,500 residents, and from positive reactions during information evenings. The first challenge is to achieve 70% participation among the residents of the pilot project. After that, permits, design and contracts must be prepared. The realisation of the district heating and cooling system must be secured, and a letter of intent was recently signed with public grid operator Enpuls. In addition, we need to find a long-term operator. For this, GroeneWarmte has set up a process and a project plan in progress, aimed at the lowest cost for the project and for the customers."

Questionnaire

1. Is there a cooling demand? If so, is it linked to heat demand?

Yes, in the pilot project, in principle, each customer is also offered cooling. The resulting heat is used sustainably for the heat supply.

2. Will heat pumps be used? If so, will some form of peak shaving be used to limit the load on the electricity grid?

Yes, in phase 1 temporarily using outside air and return heat from cold supply as heat sources. In phases 2 and 3, heat pumps will be used to raise the temperature only if the seasonal buffer cannot provide enough heat.

The homes will be equipped with a storage tank for domestic hot water. The gas boilers for peak supply (temporarily, as long as there is no seasonal buffer in the system) also provide attenuation of the peaks. Furthermore, the possibility of matching local generation (the energy cooperative's wind farm) with local demand is being investigated. The large-scale buffer to realise the damping of peaks, an [Ecovat](#) will only come in phase 2, after which this component will be '5GDHC-ready'.

3. Will local energy sources be used?

Yes, outside air, waste heat, solar thermal and the return heat from the cold supply. The waste heat may come from the local brick factory and cold stores. There is also a biomass plant from a nearby horticulturist that could be used (temporarily). Electricity may come from the wind farm.

4. Will low-grade energy sources be used for low-grade demand?

Yes, outside air and LT waste heat. Further closure of heat and cold cycles via cold supply.

5. Is the system demand-driven?

Yes

6. To what extent is fossil energy still needed?

Temporary gas boilers are provided for the peaks in the clusters. This concerns 20% of the annual demand. In addition, the heat pumps run on 'the average green/fossil power mix of the grid'. In phase 2, heat storage significantly reduces the fossil share as the power mix becomes more sustainable.

7. To what extent will homes be made suitable for LT?

The water from the grid will enter the homes with a maximum of 55°C. Houses will be made suitable by means of insulation, airtightness, possibly modification of the heat emitting system and a system for cooling. Possibly the current radiators are already suitable, otherwise one can switch to LT radiators or retrofit existing radiators. Each homeowner receives advice regarding 'connection-ready' including cooling and including budgeting and financing.