

# Pilot project Panorama district - Vlissingen

We talked about the Panorama district pilot project with Evert Vrins (Evert Vrins Energieadvies) and Maarten de Bruijn (policy officer Environment and Sustainability Vlissingen municipality). Evert Vrins advises, and he conducts research in the field of energy and climate policy. He has been doing this for about 37 years.

## Vlissingen context

Initially, this project assumed that the existing housing would remain. It is now expected that through "precision interventions" (whereby tenants can return to their living environment) some housing blocks may be demolished and make way for new construction. Existing homes that will not be demolished will be post-insulated.

## Questionnaire

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

There are 3 supermarkets that produce heat with their refrigeration. That waste heat could potentially be utilised by the project. For newly built houses, housing corporation l'Escaut Woonservice is still exploring whether they need cooling, or whether the cooling demand will be limited through architectural measures such as shading.

### 2. Will many heat pumps be used? If so, will some form of peak shaving be used to reduce the load on the power grid?

Yes, collective and possibly individual heat pumps will be used. The heat pumps will probably be smartly controlled. This is being studied by [Netverder](#) (part of Stedin Group in Dutch) and heat supplier [Zeeuwind](#) (in Dutch) together with Stedin/Enduris. The decision is ultimately up to Zeeuwind, who will have to coordinate this with NetVerder. A stress test has been conducted to see if the electricity grid can handle the extra load. This seems to be the case, unless heat pumps are used on a large scale.

### 3. Are local energy sources being used. If yes, can this be quantified? If no, what energy sources are used/where does the energy come from? 'Local' we understand here as: an energy source in the same municipality.

We are looking at thermal energy from surface water, thermal energy from wastewater and thermal energy from drinking water pipes. These are all heat sources that are increased in temperature using heat pumps. Residual heat from supermarkets is also being looked at. Two of the three supermarkets have responded positively in other, previous projects. Thermal energy from surface water is potentially interesting because in the district the entire sewer system is being renewed. This is a 'coupling opportunity' that makes thermal energy from wastewater somewhat cheaper: the heat pipes can then go into the ground early, together with the new sewer (Thermal energy from wastewater is generally more expensive than thermal energy from surface water). Thermal energy from surface water is not very efficient in winter because of the low temperature of surface water. At times when sources of ambient heat are not providing energy, the idea is to extract heat from the ground through ground heat exchangers (an ATES with open wells would not be possible here, given the soil conditions).

### 4. Are low-grade energy sources used with low-grade demand?

For the most part yes, see above: thermal energy from surface water, wastewater and drinking water pipes and residual heat from supermarket cooling. Furthermore, electricity from renewable wind energy is used for temperature raising, always to the lowest possible distribution temperature. In new buildings, this would be done via a source network with individual heat pumps per dwelling, or a

collective system with the lowest possible distribution temperature (35°C release temperature is achievable in the new buildings).

**5. Is the system demand-driven?**

Yes. There is a lot of focus on optimal utilisation of available resources and the smallest possible use of storage. This requires optimal control.

**6. To what extent is fossil energy still needed? If fossil energy is still temporarily needed, during what period?**

No fossil energy is needed anymore. It will be an all-electric solution (heat pumps). The heat pumps will be powered by renewable electricity. A wind turbine will be installed that is directly connected to the heat grid, and owned by the same, intended (partial) owner of the heat system. Zeeuwind and NetVerder are intended operators. A Letter of Intent has been signed. A project 2rganization is now being set up.

**7. To what extent will homes be made suitable for LT? (Insulation + ventilation and/or modification of delivery system)**

The district consists largely of houses from the '48-'53s. In addition, there is also some recent new construction. Contrary to what was previously foreseen, some blocks of houses will be demolished via 'precision interventions' (small numbers at once, to ensure that residents can continue to live in the district). New construction could work with 35-40°C supply temperature. The remaining existing homes would be renovated to at least energy label B (private homes) and A (corporation-owned) and could then be connected to 70°C.