

A man with a backpack is riding a bicycle on a cobblestone street. In the background, there is a row of brick houses. The central house is red brick and has solar panels on its roof. To the right, there is a tree and a bicycle parked near a house with a red door. The sky is blue with some clouds.

**OVER
MORGEN**

**Using big data to plan
green energy districts**

Gerwin Hop



Renewable heating alternatives

Collective, high temperature

Residual heat (HT), biomass, deep geothermal



All Electric

Individual heat pumps (air-water, water-water), “Net zero”



Collective, low temperature

Residual heat (LT), ATES, BTES



Renewable gas

Biogas, power-to-gas (hydrogen)



Data tooling for heating and cooling transition

- Interactive, online tools
- Provides facts and insights
- Visually appealing, inspires and motivates stakeholders
- Multiple scales and use purposed (from public informing to strategic planning)



Demonstration

- > <https://maps.overmorgen.nl/webappbuilder/apps/40/>

Results

- City decided positive on long term framework
- Budget for City involvement (proces and investments)
- Social Housing corporations are involved
- First projects derived from atlas are in preparation
 - > Deep geothermal
 - > Combined ATES/ Waste Water project (public participation)
 - > Power to heat conversion
- City is going to publish data online
- Heat and cold atlas is being further developed to decision making tool (costs, external effects etc.)
- G2G co-operaton

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