

A photograph of two men in an industrial setting, likely a power plant or refinery. Both men are wearing high-visibility yellow safety vests over business attire. The man on the left is wearing an orange hard hat, and the man on the right is wearing a white hard hat. They are both smiling and hugging each other. In the background, there are large industrial pipes and machinery.

WIEfm expert meeting

13 november 2017

John met de warmte van Evert

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2. Heat Grids Enschede
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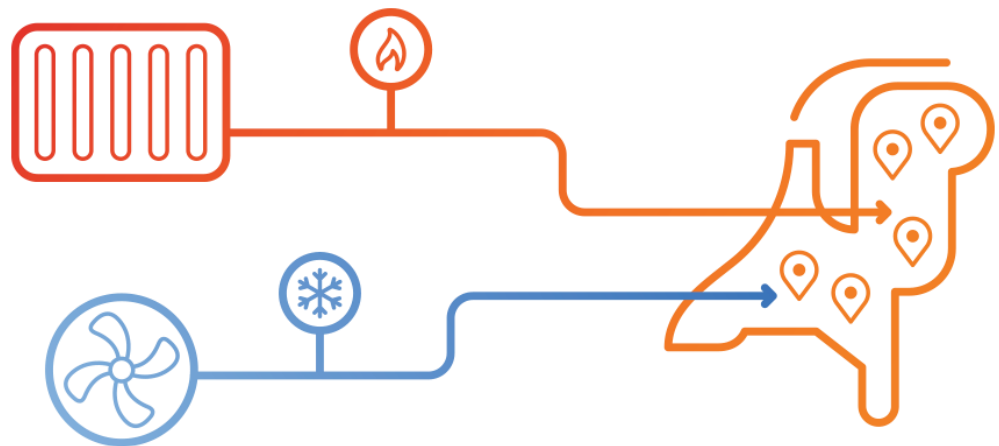
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What we do

Ennatuurlijk delivers heating and cooling services to approximately 70,000 commercial and residential customers across the Netherlands. We do this locally using innovative solutions, as sustainably as possible.

Our solutions are comfortable, affordable and simple.



Ennatuurlijk facts and figures



**130 highly
experienced and
knowledgeable
employees**



**Offices in Best and
Steenwijk**



National coverage



**Shareholders
PGGM (80%) and
Veolia (20%)**



**Our ambition:
A sustainable
environment**



**Core values:
Open, Together,
Entrepreneurial,
Sustainability**



Ennatuurlijk makes energy local



Supplier:

- Farmers
- Industry
- Waste incinerator
- Regional water authorities
- Other dedicated sustainable sources

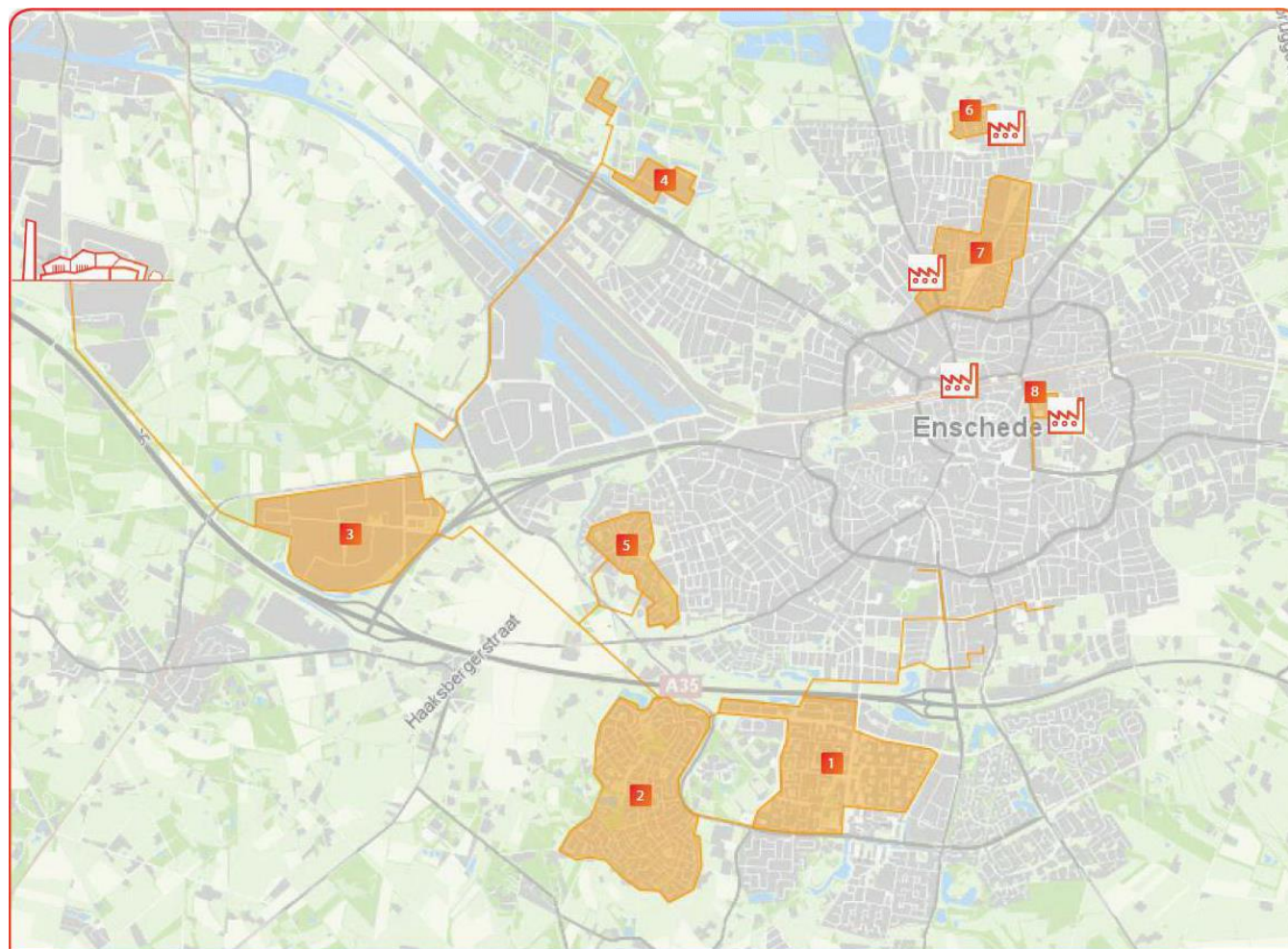
Customer:

- Consumers
- Businesses

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Current Heat Grid Enschede



- 1 Wesselebrink
- 2 Helmerhoek
- 3 Marssteden
- 4 UT-campus
- 5 't Zwering
- 6 Deppenbroek
- 7 Roombeek
- 8 Tattersal

Main heat grid Enschede

- Residual heat of Twence (waste incineration and from 2018 biomass as primary source)
- Heat sales: 275.000 B2B and 215.000 B2C = 490.000 GJ
- Residential customers: 6.000
- Business customers: 160
- Peak load (average winter): 72 MW_{th}
- Base load: 12,5 MW_{th}
- Temperature: Winter 110 °C, Summer 95°C
- Sustainability score (EOR): 400% (primary grid)

Smaller heat grids Enschede

Roombeek (CHP and gas boilers)

1.400 B2C, 15 B2B, 58.000 GJ/yr, 8 MW peak

Tattersall (CHP and gas boilers)

550 B2C, 15.500 GJ/yr, 3 MW peak

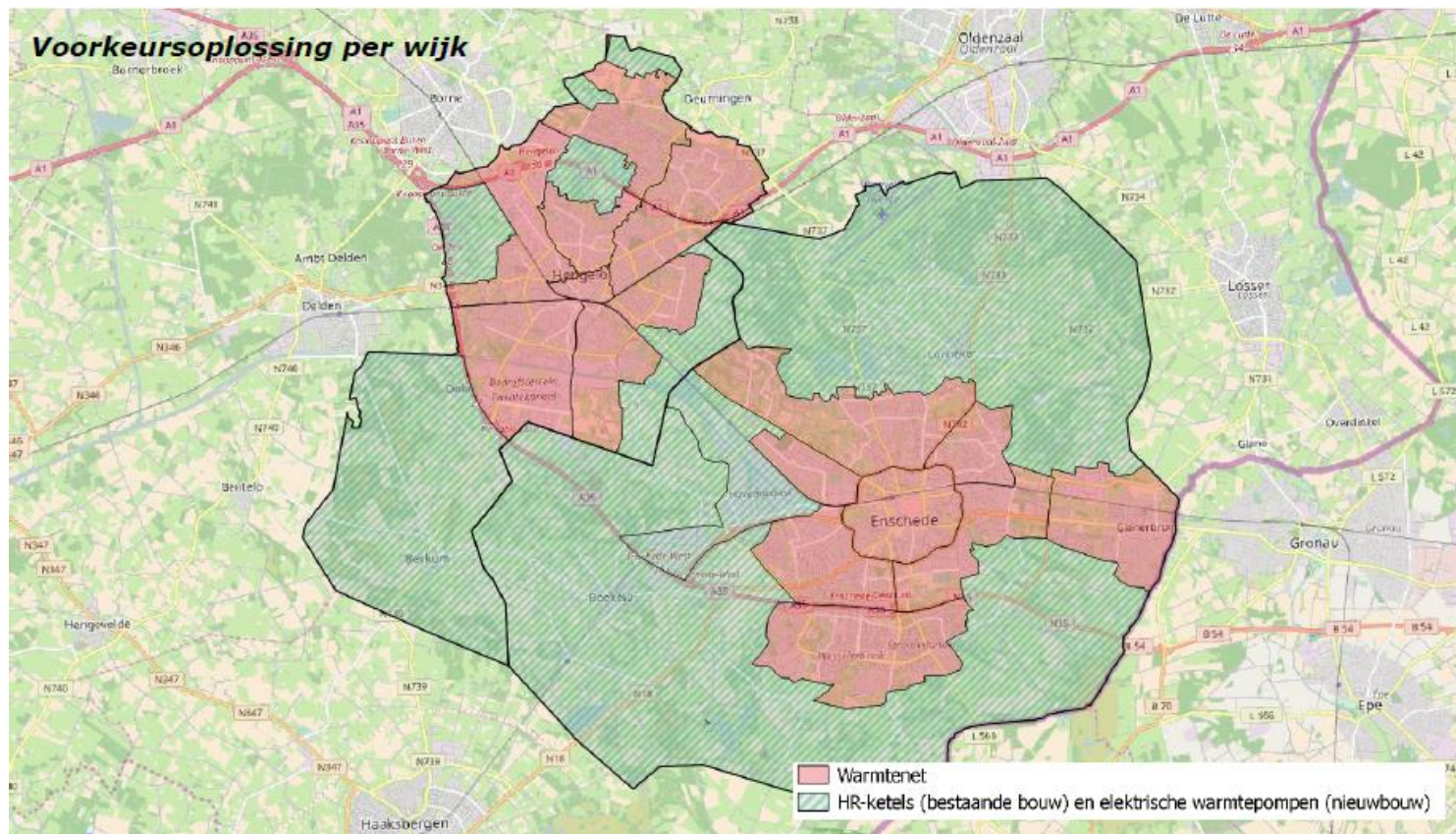
Deppenbroek (CHP and gas boilers)

270 B2C, 6.000 GJ/yr, 1,5 MW peak

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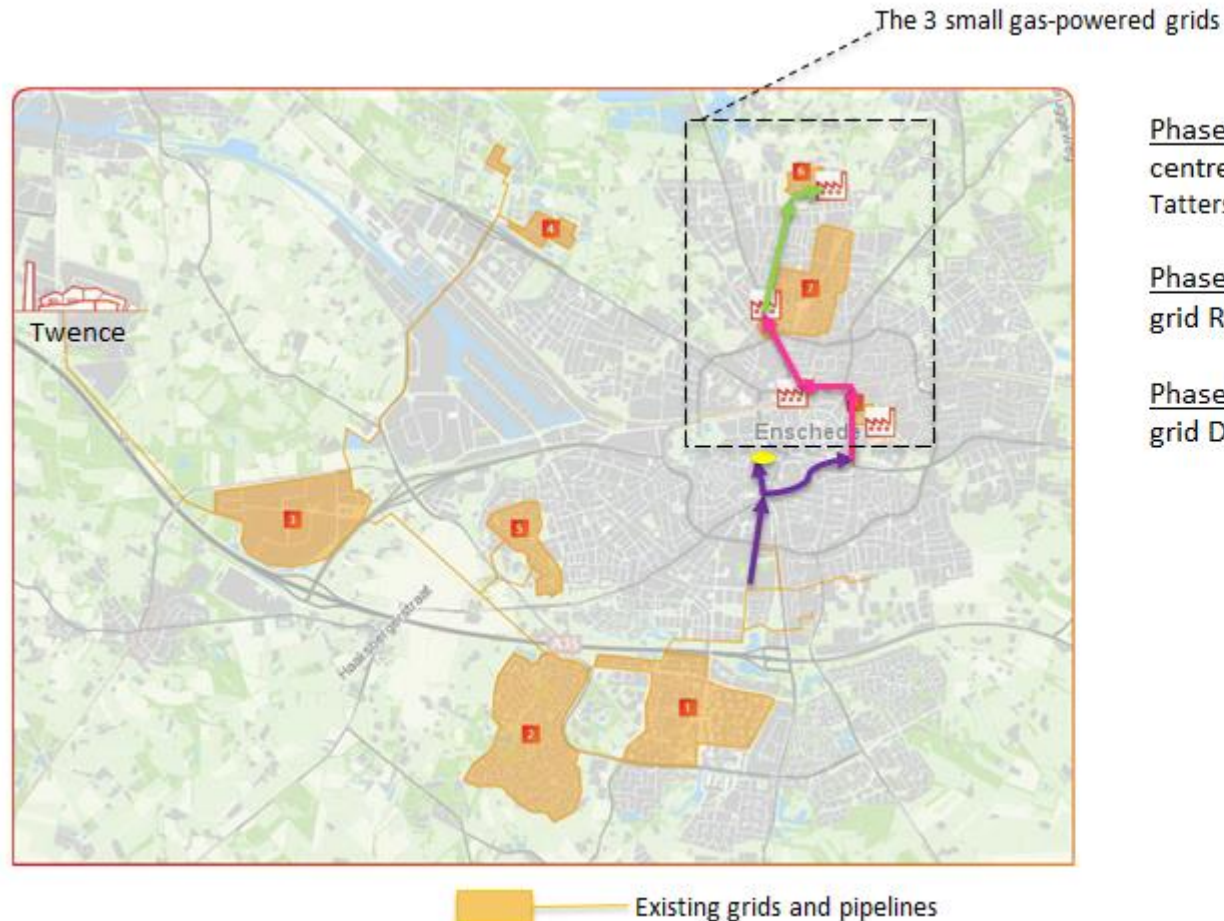
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Potential residual heat usage Twente



Potential for heat grids in case of maximum usage known residual heat in Twente – Ecofys (2017)

Ambition Heat Grid Enschede



Phase 1 (purple): invest in pipeline to city centre and connect first smaller grid Tattersall

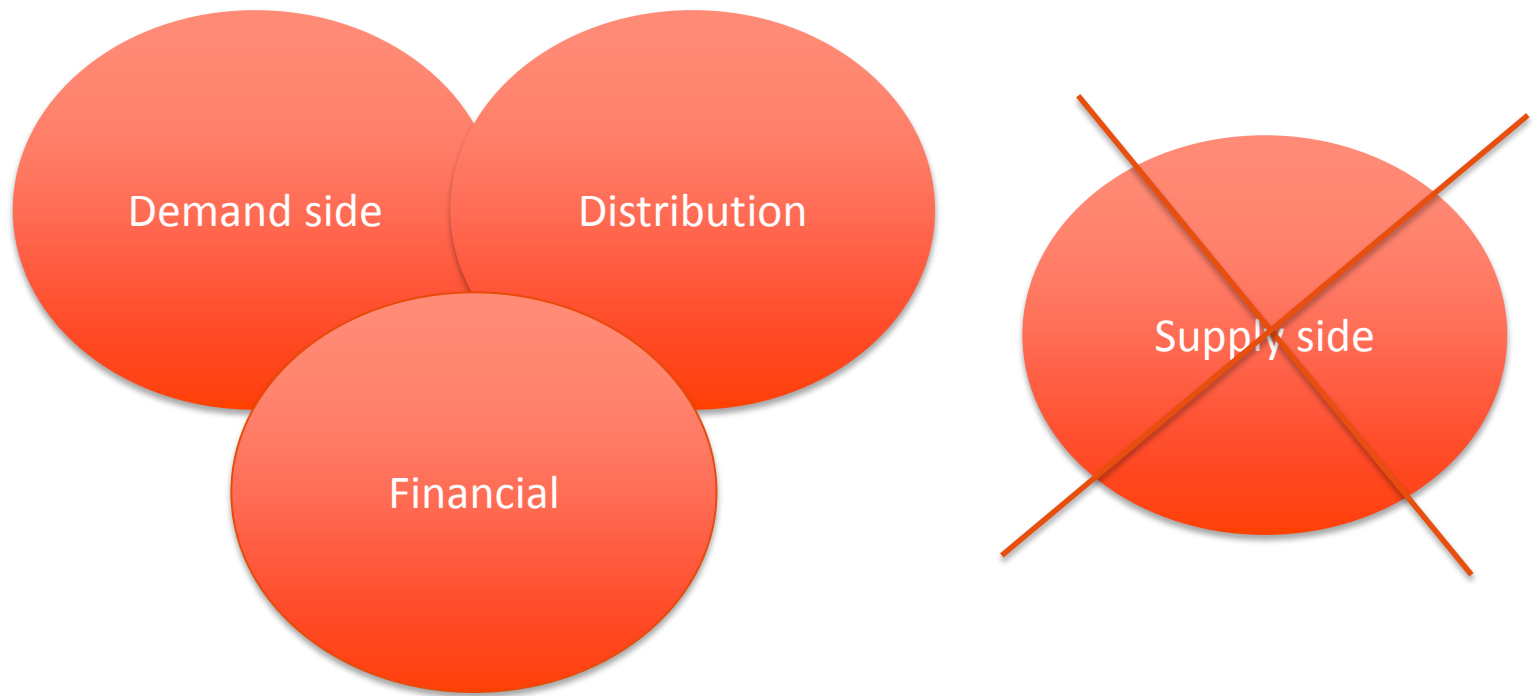
Phase 2 (pink): connect second smaller grid Roombeek

Phase 3 (green): connect third smaller grid Deppenbroek

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Three development pillars



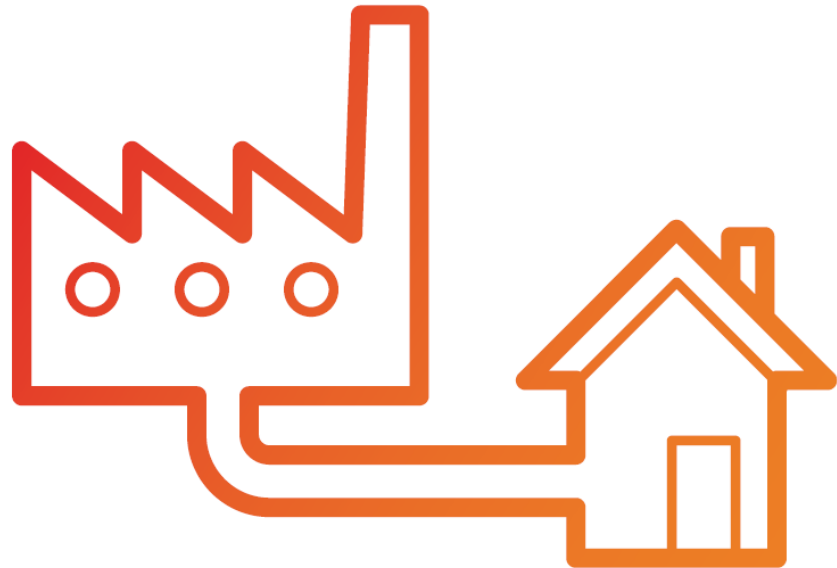
Demand side (customers)

1. Financial attractiveness of heat proposal
2. Match in planning
3. Guarantees on sustainability
4. Guarantees on commitment to connect



Distribution

1. Dimensioning diameters
2. Pipeline routing
3. Planning



Financial (business case)

1. Certainty of investment
2. Certainty of customer demand
3. Risk appetite of investors



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maakt
energie
lokaal

