

Energy transition Zuid-Holland

Renewable energies in district heating: moving away from a gasdominated supply

10 October 2018

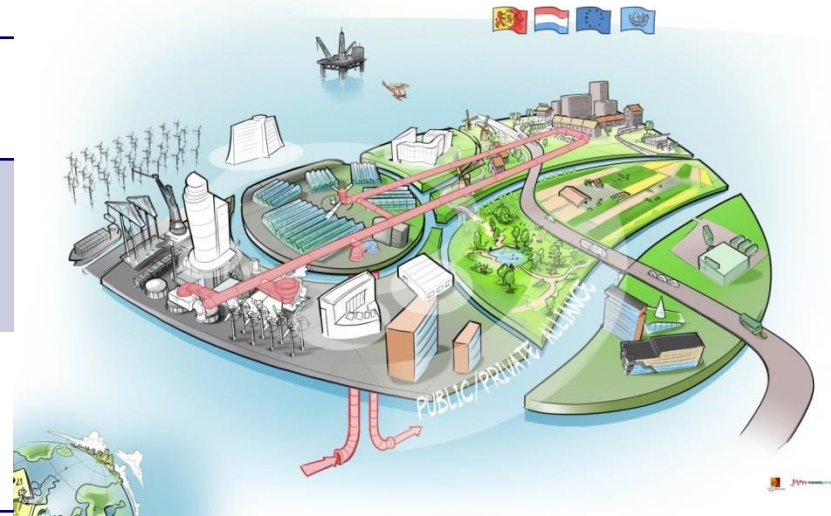
Dr. Annelies van Ewijk
Energy Transition Program Director
am.van.ewijk@pzh.nl



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Towards carbon neutral in 2050

The facts for Zuid-Holland	2020	2050
Total heat demand (households and greenhouses)	115 PJ	Reduction towards 75 PJ
of which residual and renewable (geothermal) heat	20 PJ	Towards 60 PJ



*1 PJ approx:
5 to 8 geothermal projects
30 windturbines of 3MW*

The challenges we face with renewable energy in district heating

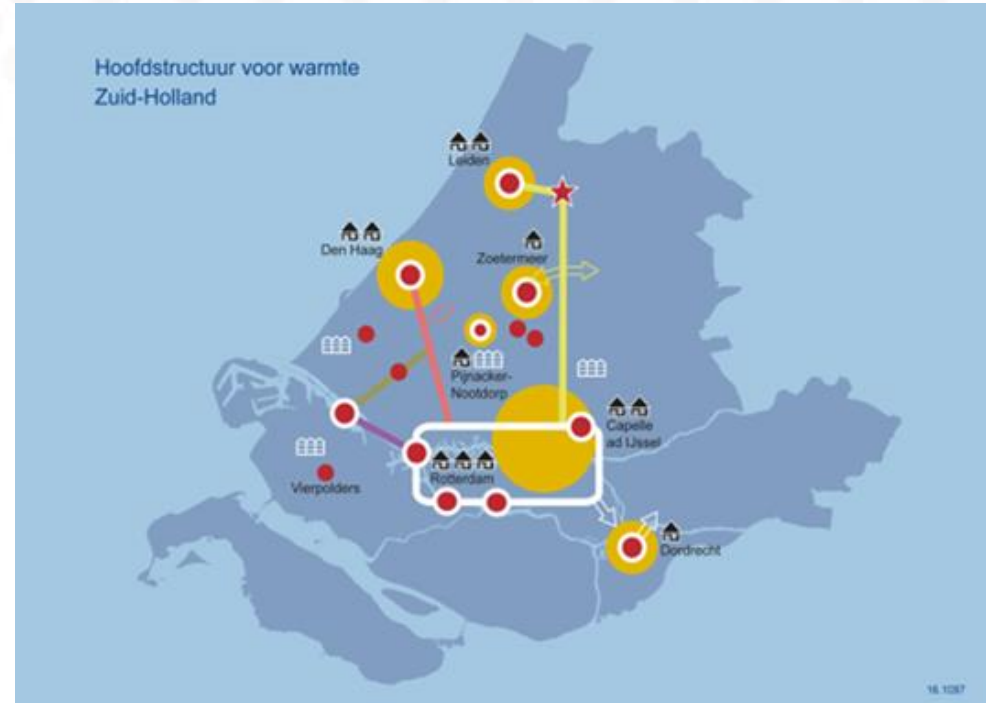
Zuid-Holland

- Densely populated, 3.6 mln people
- 1.2 mln houses, many old and poorly insulated
- Lots of power generation and (petro)chemical industry
- Many green houses
- Constrained by space for renewable power generation
- Enormous amount of residual heat available
- Great geothermal heat potential, 8 wells operational
- Natural gas is the dominant and cheap commodity to heat houses
- No financial and legal level playing field for heat compared to natural gas or even electricity
- There is hardly any heat infrastructure yet, hardly any demand for heat, and little supply of heat

Our plan “towards a regional heat system”

Development of infrastructure and commodity:

- Realisation of a regional transport and district heating infrastructure for 500.000 houses and greenhouses
- Use and reuse of residual heat (which now disappears into the air or water)
- Large scale development of geothermal heat (now 8 wells in operation)
- An independent transport operator and working towards a “heat market”
- Storage of surplus electricity in heat possible
- Working in Alliances: public private partnerships



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The challenges at each level

	Zuid-Holland	Netherlands	Europe
Innovate	<ul style="list-style-type: none"> • Heat storage • Aquathermal energy 	<ul style="list-style-type: none"> • Development of UltraDeep Geothermal energy • CCU/CCS, hydrogen • Large scale insulation 	<ul style="list-style-type: none"> • Large scale pilots smart renewable energy system: power, heat, hydrogen, CCU ..
Regulate	<ul style="list-style-type: none"> • Regulation on reuse of residual heat (investigation) • Independent system operator 	<ul style="list-style-type: none"> • Utility providers to construct, operate and maintain (local) district heating systems • EBN as co-investor for • geothermal energy projects 	<ul style="list-style-type: none"> • CO2-ETS pricing
Legislate	<ul style="list-style-type: none"> • Seasonal heat storage underground 	<ul style="list-style-type: none"> • Authority city councils to abandon natural gas • Position of residual heat in building regulations (BENG) • Allocation of CO₂ credits 	
Subsidize	<ul style="list-style-type: none"> • Revolving fund 90 million EUR 	<ul style="list-style-type: none"> • Towards a level playing field for heating infrastructure 	<ul style="list-style-type: none"> • Financing in mayor schemes e.g. geothermal projects

Thank you

- Questions or remarks?