



Geert Kamminga
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NEIGHBOURHOOD ENERGY APPROACH



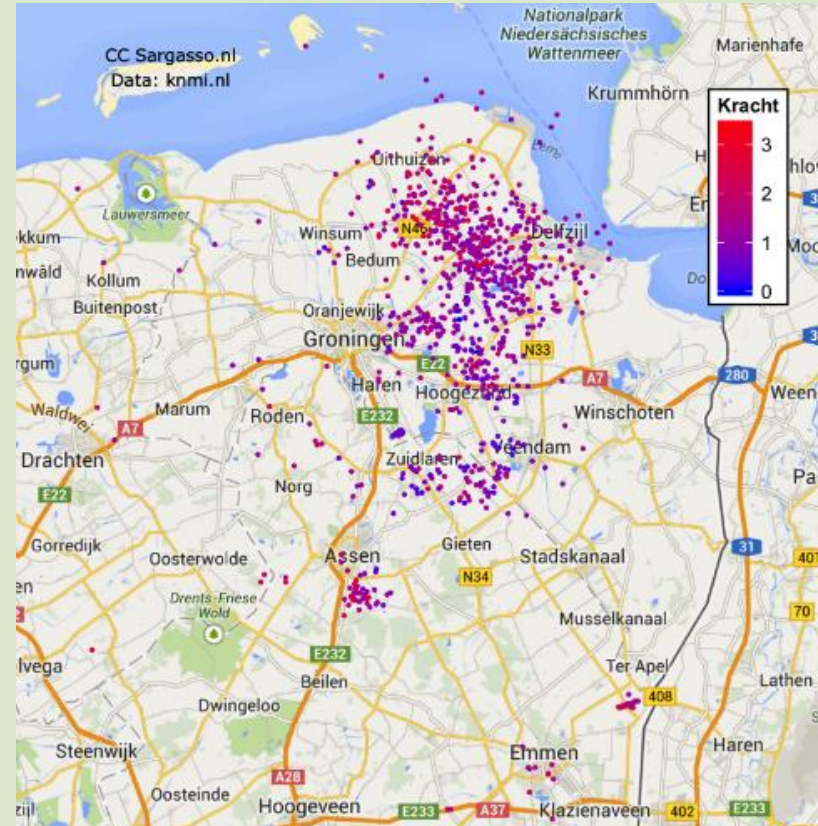
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>Welcome
to the city
of
Groningen



Geert Kamminga / Neighbourhood Energy Approach



WARMTE NETWORK

- 50 + neighbourhoods
- Society needs three kinds of energy: for **heat** (and cold), for **transport**, and **electricity** for light and power.
- In Groningen heat accounts for over 50% of the total demand.
- Transport and electricity both 25%.
- Nearly 70% of all energy is non electric.

GAS

WARMTE
OPSLAG

NIEUWE
ENERGIE

GRONINGEN AARDGASLOOS IN 2035

- 2015-2020
- 2015-2025
- 2025-2035
- 2035 or later



The Neighbourhood Energy Approach

3 steps:

- 1) Data Collection and Modelling**
- 2) Writing District Energy Plans**
- 3) Political Approval and Implementation**



Partners in the neighbourhoods

- Neighbourhood citizens are cooperating in a sustainable energy foundation
- Groningen Energy Cooperation: Grunneger Power
- Municipality of Groningen
- Networkoperators
- Social Housing Companies
- Province of Groningen
- Energy Information Desk Groningen (GWS)
- Heating Network Operator: Warmtestad

Energy Scenarios Paddepoel

Scenario 1: All Electric

- Air heat pump
- Insulation reduces 67% of the heat demand
- Apartment houses on district heating

Scenario 3: Hybrid

- Hybrid heat pumps
- Insulation reduces 50% of the heat demand
- Apartment houses on district heating

Scenario 2: district heating network (geothermal)

**Insulation reduces 50% of
the heat demand**





Paddepoel Commitment

- Political Approval and Implementation
- Small windmills
- Connection of individual houses to heating network
- Motivating more citizens to act
- Research into financing opportunities
- Roadmap towards 2035
- All parties have signed the cooperation and have committed to do their part of the job.



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THANK YOU FOR YOUR ATTENTION!