Data-driven planning of geothermal district heating
The case of the Hague
What’s going on in The Netherlands?
Netherlands to halt gas production at Groningen by 2030

Netherlands proposes 95% emissions cut by 2050 in draft climate law

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Under proposals backed by seven political parties across the spectrum, the Netherlands could set one of the most ambitious carbon targets in the world
What does this mean for cities and utilities?

> **Heating Transition Plan** by 2021 for every municipality*. The Plan contains:

> A decision on new **heating infrastructure** for every neighbourhood based on **lowest costs for society**

> A **planning** of when to start in which neighbourhood

> In **close collaboration** with utilities, social housing corporations and private home owners

* 380 municipalities, on average pop. 45000
Our approach for the Heating Transition Plan

1. Gather the stakeholders
2. Make a smart planning
3. Choose from alternatives
   - All electric
   - District heating
   - Renewable gas
4. Agree on who does what
Heating Transition Plan for The Hague South West

• 50 thousand homes
• Built in the ’50s and ’60s
• 56% social housing
• Favourable geology for geothermal energy
• Industrial waste heat potential in vicinity
1. Gather the stakeholders
2. Choose from alternatives
3. Make a smart planning
4. Agree on who does what
How we used data

> Which buildings are suitable for geothermal heating? (70°C supply temperature)
  > Input:
  >   > Very detailed open building data (square meters, building age, gas usage, building year, etc.)

> What is a logical design for the district heating network?
  > Input:
  >   > Existing and new geothermal plants
  >   > Existing district heating network
  >   > Stakeholder planning data (sewerage, housing renovations, etc.)
What’s next

> First geothermal well operational in 2019

> First 2000 houses will be disconnected from the gas grid in 2019

> Incorporation in city-wide Heating Transition Plan
Take-aways

> Data enables people to make informed decisions

> Data emancipates stakeholders: everyone has the same information and attains the same knowledge level

> Data speeds up processes and reduces need for costly research

> Highly detailed open data about buildings and energy usage and infrastructure is essential
thank you for your attention.