

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. The sky is blue with some clouds.

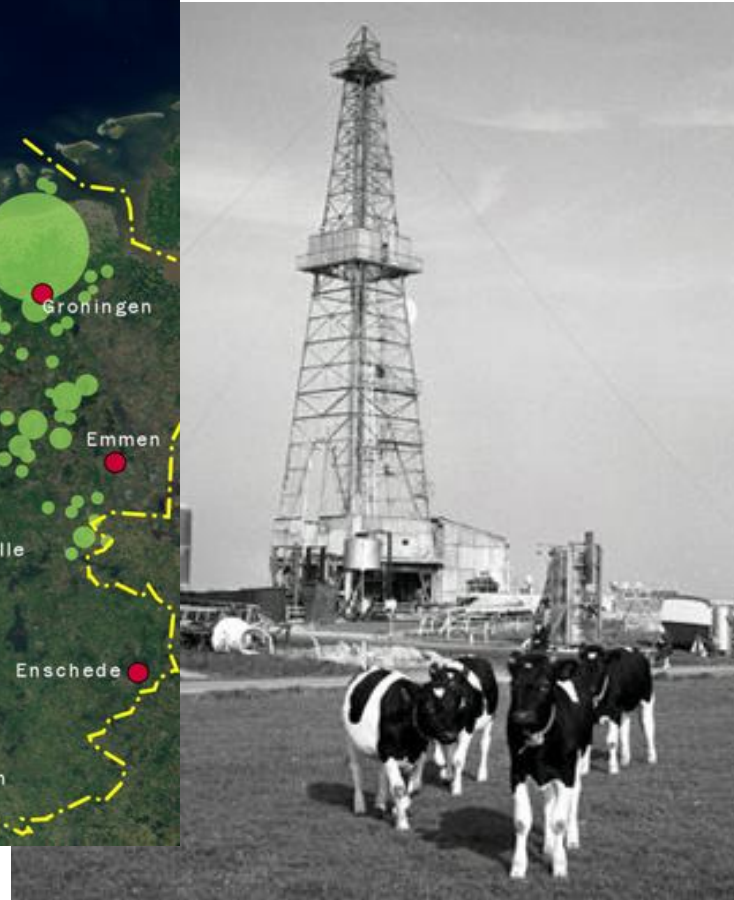
**OVER  
MORGEN**

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

Gerwin Hop



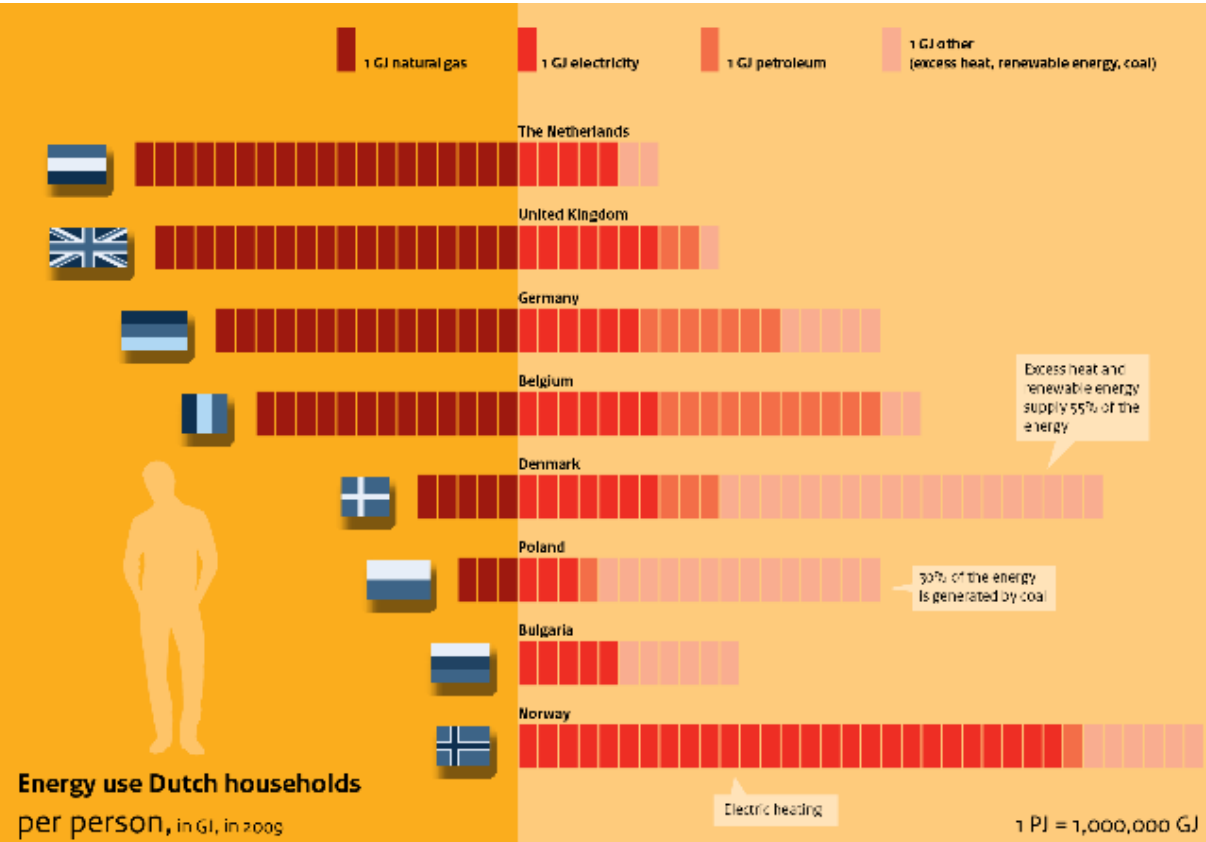
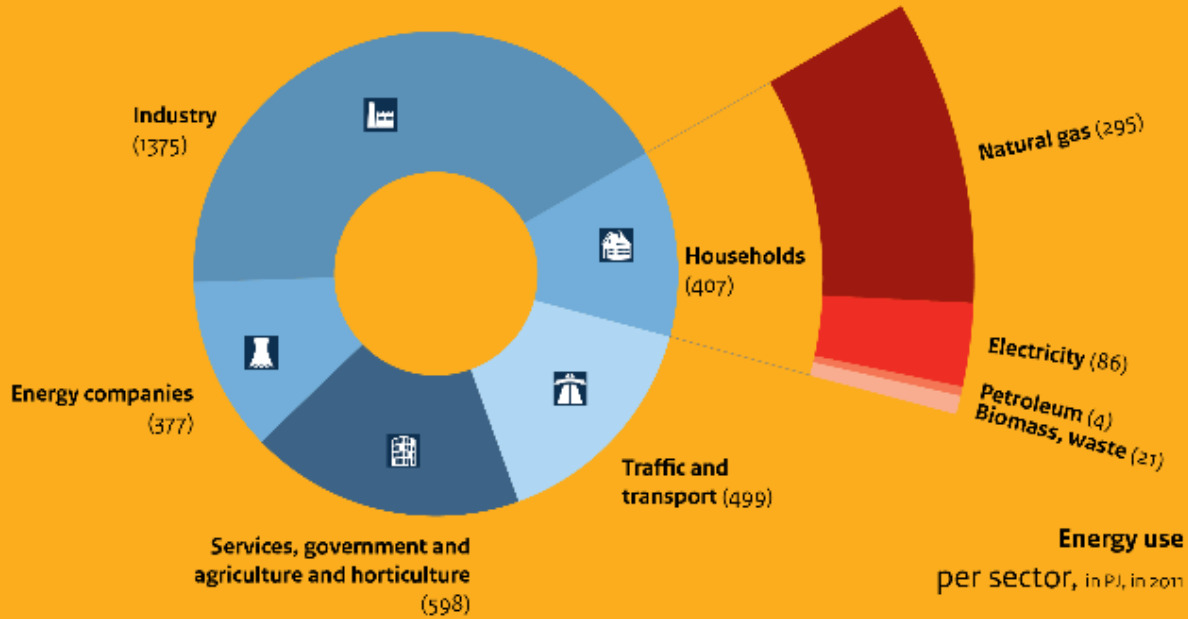
# The Netherlands = natural gas



1960

## Dutch homes consume a great deal of natural gas

The structure of the Dutch economy is energy-intensive. To ensure energy security for the future and mitigate climate change, the Dutch need to become more efficient energy consumers and find other, renewable energy sources.





# 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)





# OVER MORGEN Warmte Transitie Atlas Rotterdam

Adres zoeken

+ - andere kaart

**kaarten**



**Panden en energieverbruik**  
by overmorgen\_beheerder  
16-1-2017 10:37:23



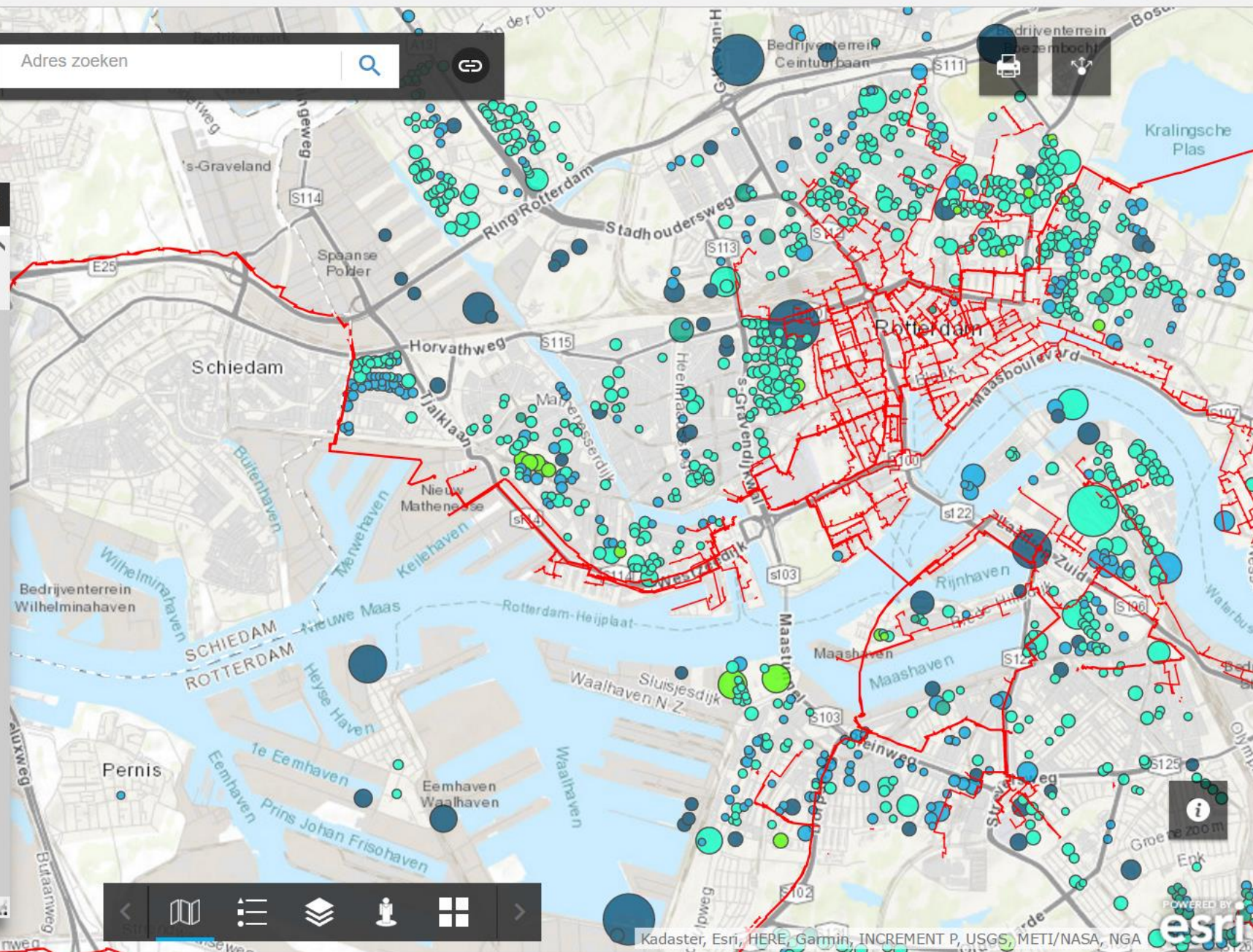
**Potentiële en gerealiseerde war...**  
by overmorgen\_beheerder  
24-11-2016 09:28:04



**Warmte uit bodem en water**  
by overmorgen\_beheerder  
28-4-2017 12:15:33



**Kansen voor de warmtetransitie**  
by overmorgen\_beheerder  
5-5-2017 16:39:52

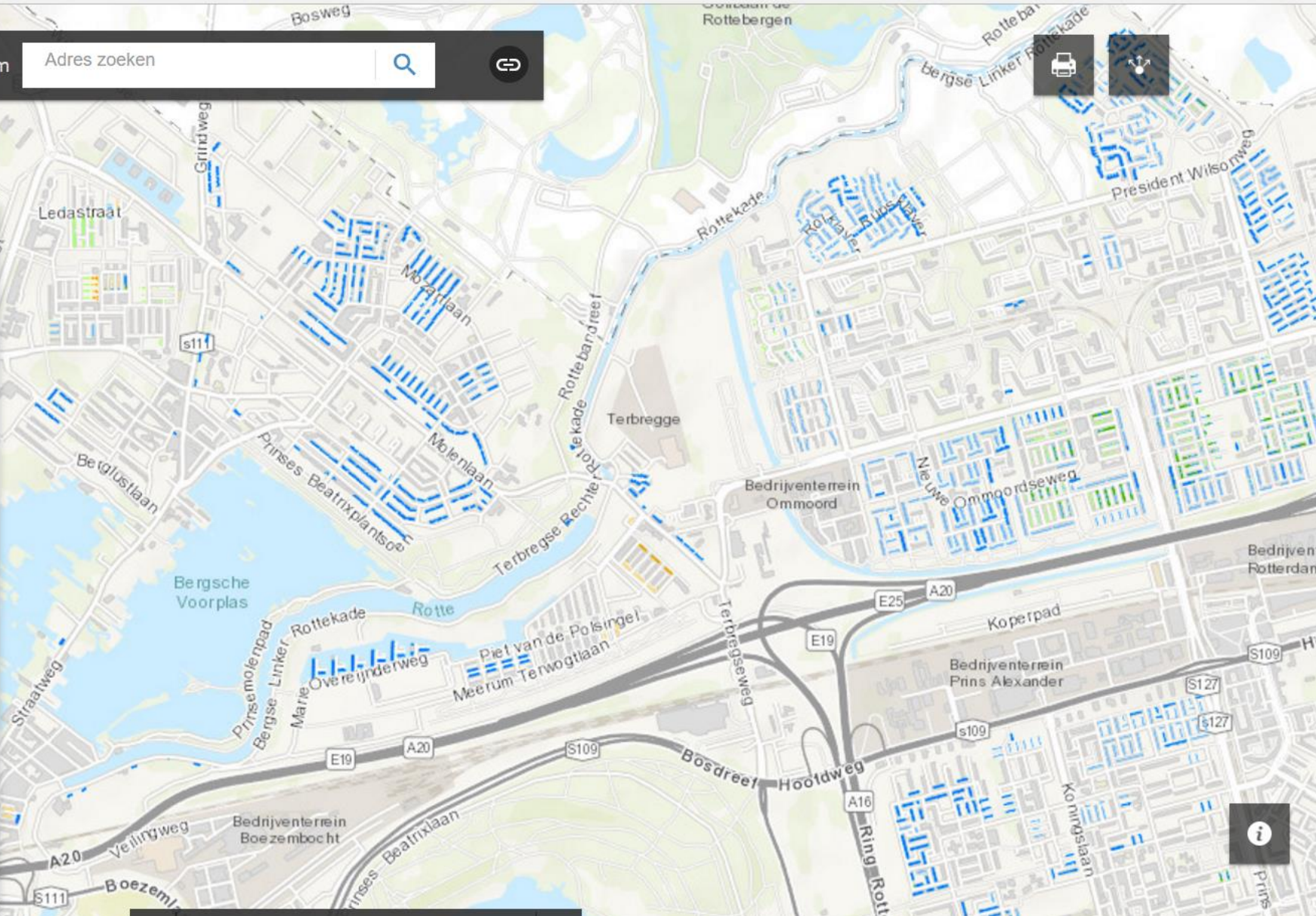


Navigation icons: back, map, layers, 3D, location, home, forward.



**Lijst met lagen**

- Kanskaart Eneco (v2)
- Kanscategorïeën All Electric/Nul-op-de-meter
  - Kanscategorïeën All Electric/Nul-op-de-meter
    - Corporatiebezit, rijwoning, > 1950, > 1400 m3 gasverbruik, ≥ 8 potentiële PV-panelen
    - Corporatiebezit, rijwoning, > 1950, > 1100-1400 m3 gasverbruik, ≥ 8 potentiële PV-panelen
    - Particulier, rijwoning, > 1950, > 1600 m3 gasverbruik, ≥ 10 potentiële PV-panelen
    - Particulier, rijwoning, > 1950, > 1300-1600 m3 gasverbruik, ≥ 10 potentiële PV-panelen
    - Corporatiebezit, > 1990, rijwoning, maximaal < 800 m3 gasverbruik, ≥ 8 potentiële PV-panelen
    - Particulier, > 1990, rijwoning, maximaal < 950 m3 gasverbruik, ≥ 10 potentiële PV-panelen
  - Pand - Eigendom woningcorporaties
  - Pand - Eigendomsverhoudingen binnen panden



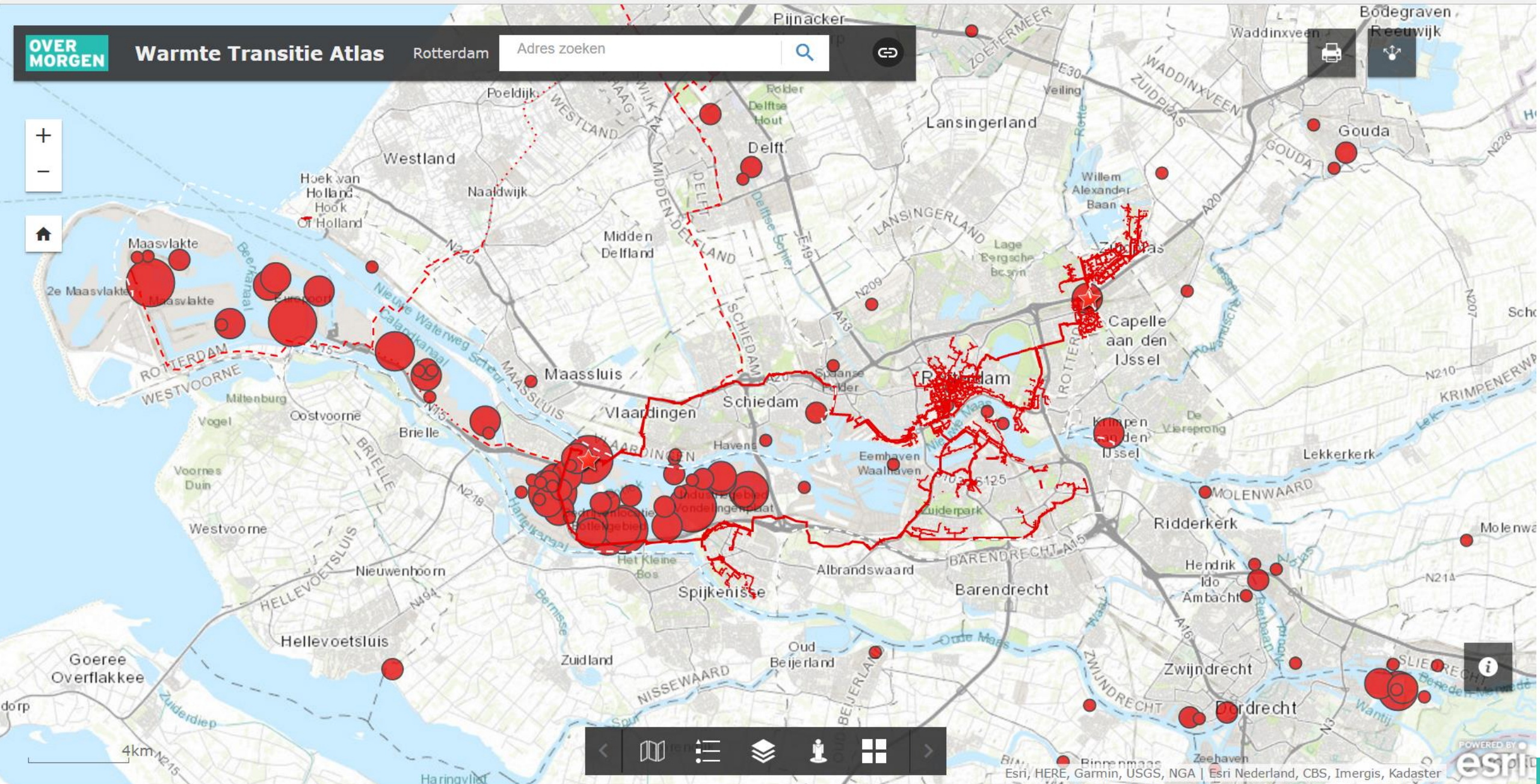
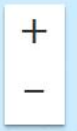


OVERMORGEN

# Warmte Transitie Atlas

Rotterdam

Adres zoeken



4km





# Results







Questions?

[gerwin.hop@overmorgen.nl](mailto:gerwin.hop@overmorgen.nl)





over  
morgen  
begint  
nu.

**OVER  
MORGEN**