



Netherlands Enterprise Agency

Risks of Natural Gas exploration as one of the drivers for the energy transition in the Netherlands

EGRD 13-14 May
Vienna

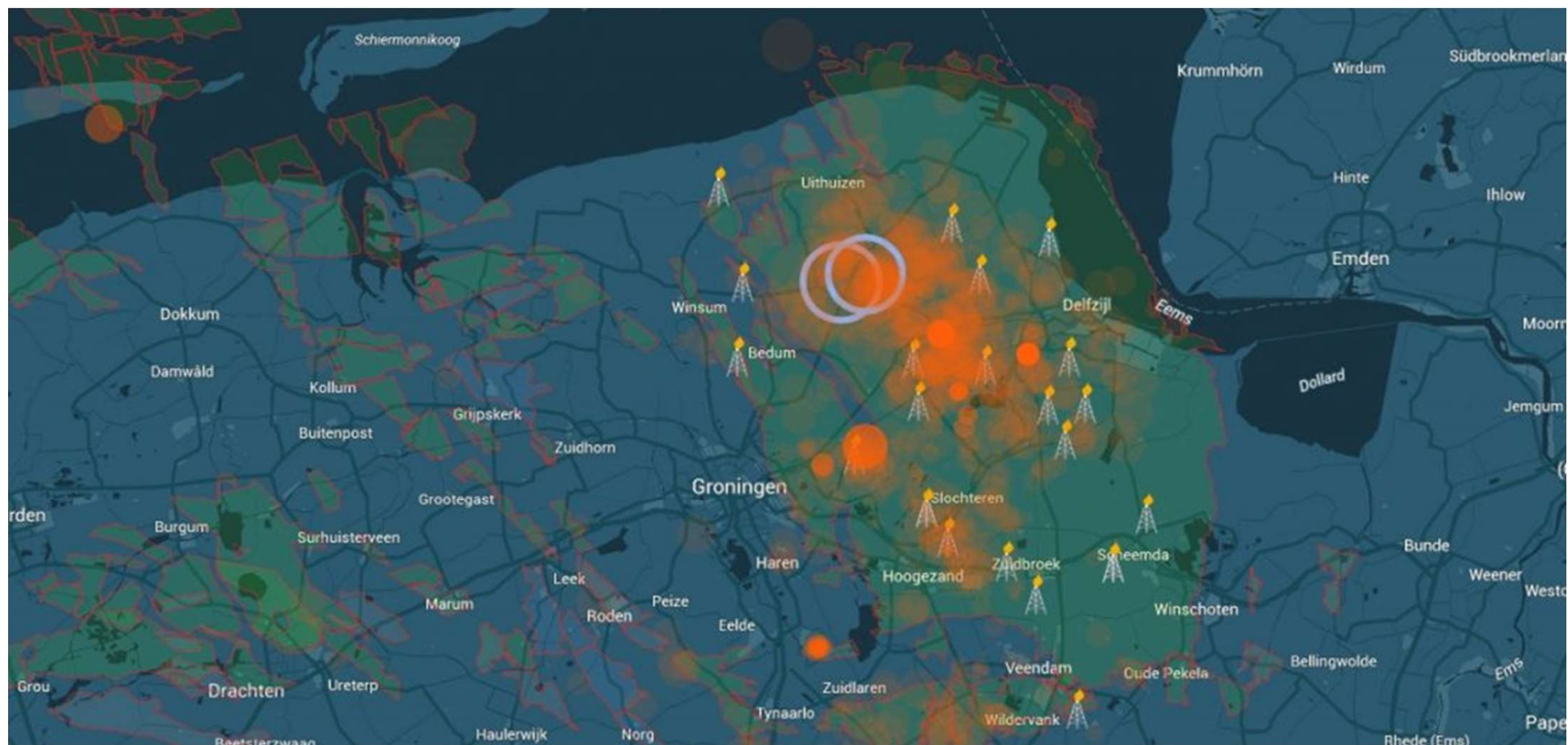
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Agency (RVO.nl)*



History of natural gas in NL

- Groningen/Slochteren field discovery 1959
- Exploration by NAM (50/50 Shell/Exxon)
- 2900 bcm, in 2017 2000 bcm produced
- Government income cumulative 300 billion euro



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Groningen gas field, impact

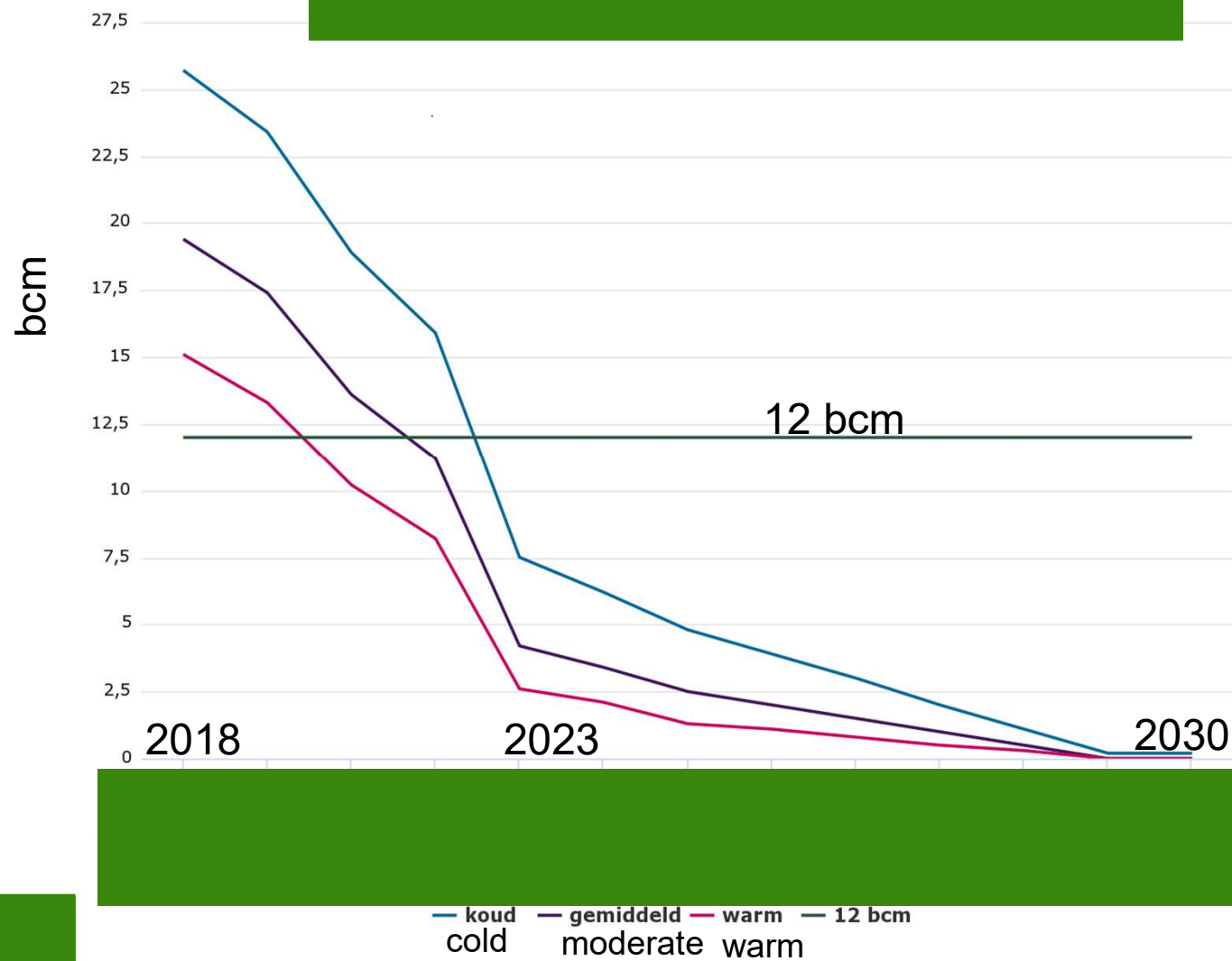
The bulk of the Groningen gas field reserves will become stranded. As a result 500 bcm of technically easy producable gas will remain in the ground. Earthquakes induced by gas production have played a key-role in the decision making proces. In combination with the Climate Agreement proces this will lead to a very rapid energy transition in the build environment.

In March 2018 the Dutch government decided to phase out production from the Groningen natural gas field by 2030. This in order to reduce the safety risks caused by earthquakes induced by gas production. This watershed decision marks the end of over 50 years of Groningen natural gas production and prompts the need for answers to questions of increasing gas imports from other sources and the related environmental price.

Source: *The Hague* Centre for Strategic Studies



Reduction of gas production in Groningen





March 2018, letter to the parlement

- Import with nitrogen 'dilution'
- Transform industry towards high-caloric gas
- Decrease export (Be, Ge, Fr)
- Transition in built environment from 95% dependency on natural gas towards zero in 2050



Gas demand site

Newly built houses: forbidden to install natural gas heating systems

Existing houses: use of natural gas for heating is to be phased out gradually



Climate Agreement: scaling up and innovation

EUR 300 mln yearly extra for pilots and demonstration

4 ministries

Synergy in instruments

Industry

Electricity production

Built environment

Agricultural

Mobility



Climate agreement on built environment

Mission

2050: CO2 free built environment in 2050

2030: 200.000 houses each year cut off natural gas;
1,5 mln houses and 15% offices free from natural gas
>20% of energy use is generated in built environment

Longterm Mission directed Innovation Programs:

speeding up energy renovations

renewable heating and cooling in buildings

Flexible and reliable energy systems in built areas



Climate agreement on built environment

Mix of instruments:

Law for newly built houses no gas

Standardized approach

Financing

Subsidies

Area approach

Scaling up and innovation



Built Environment Ministry of the Interior and Kingdom Relations together with Ministry of Economical Affairs

Subsidy scheme for municipalities for Natural Gas free experiment, ao.renovation towards natural gas free residential areas, houses and buildings.
2018: 80 mln EURO

Subsidy scheme for Innovations for Natural Gas Free buildings. 2018: 13 mln EURO



Natural Gas free experiments in municipalities

27 Residential areas
selected



2018 and 2019: 125 mln EURO

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Innovations for Natural Gas free buildings

Innovation subsidy scheme:

Products and services for Natural Gas free houses, buildings and areas

Costs decrease and Quality increase with much attention for social impacts

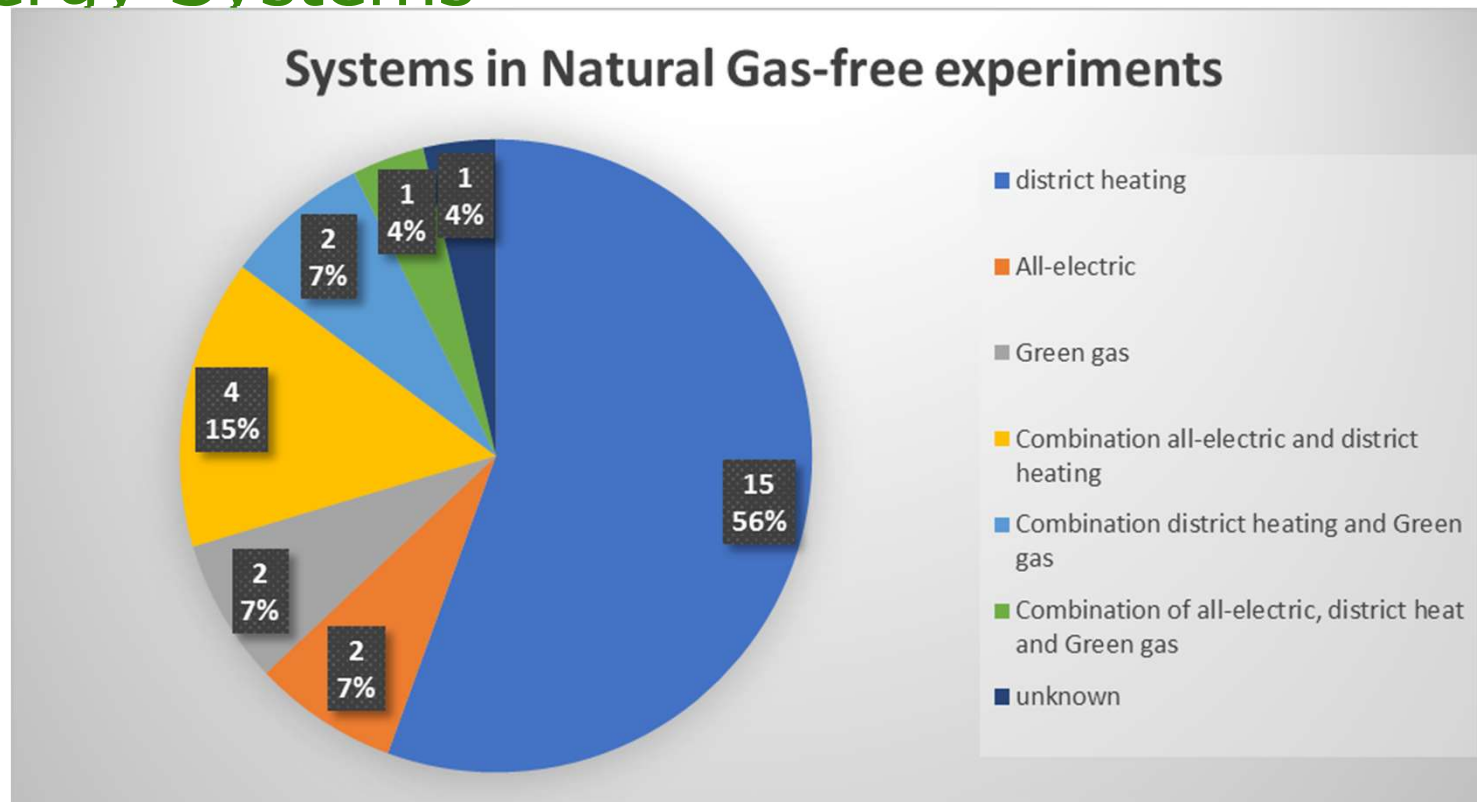
Short term: prototype testing must be part of the project

Industrial research and experiments

Projects max 1 year



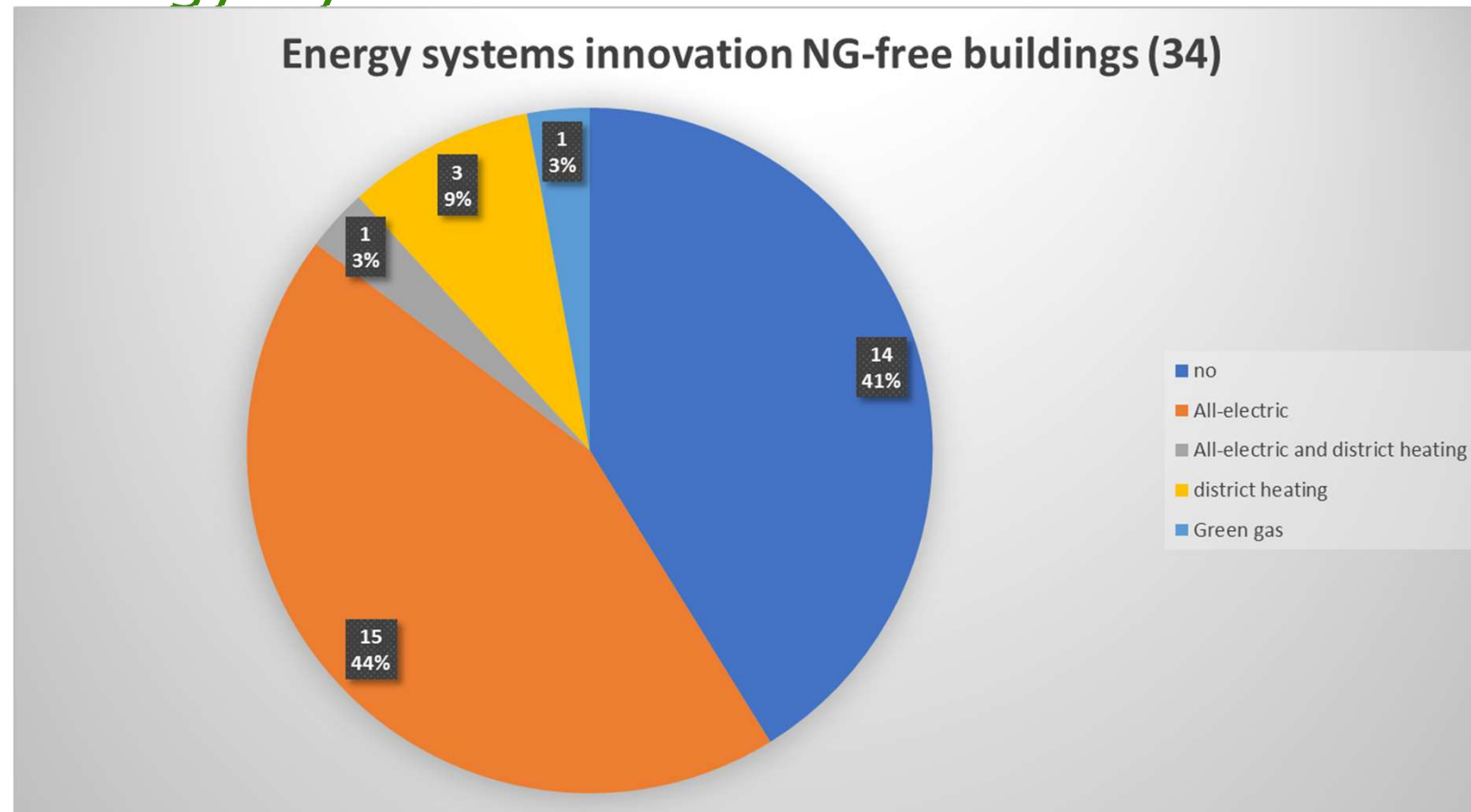
Natural Gas free experiments in municipalities: Energy Systems



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Innovations for Natural Gas free buildings: Energy Systems



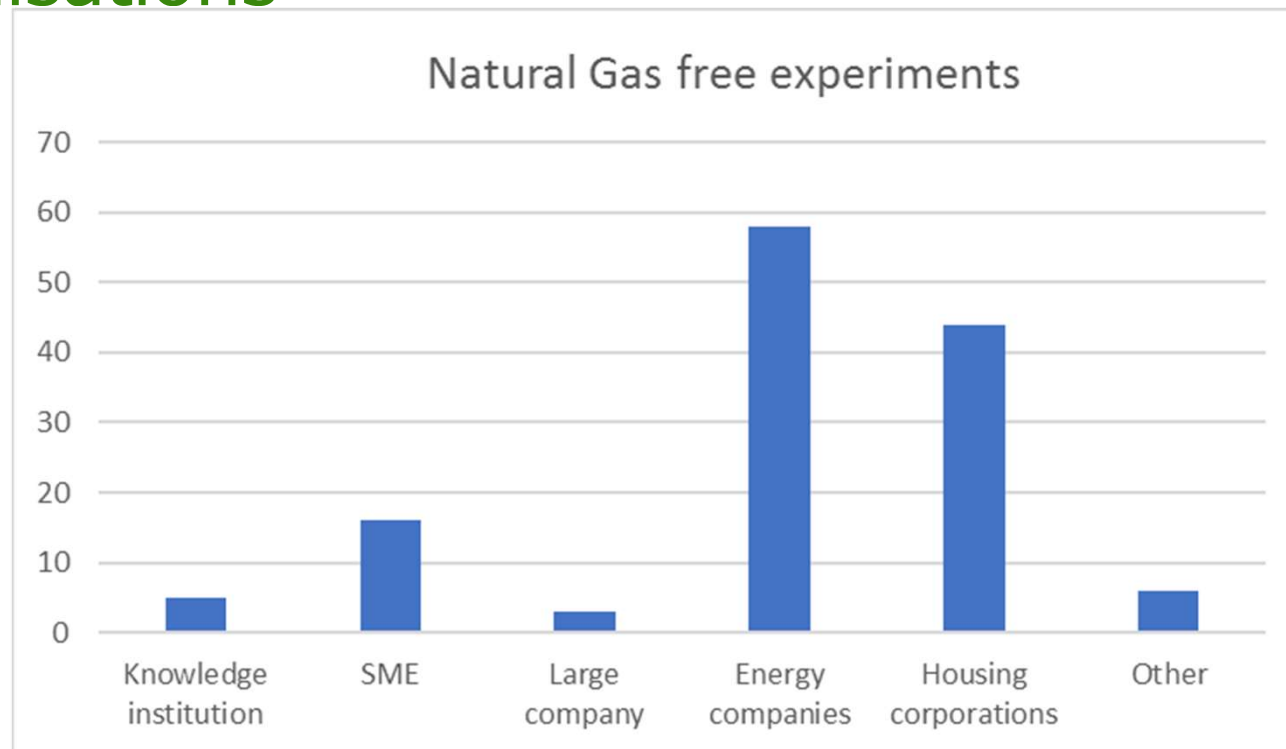
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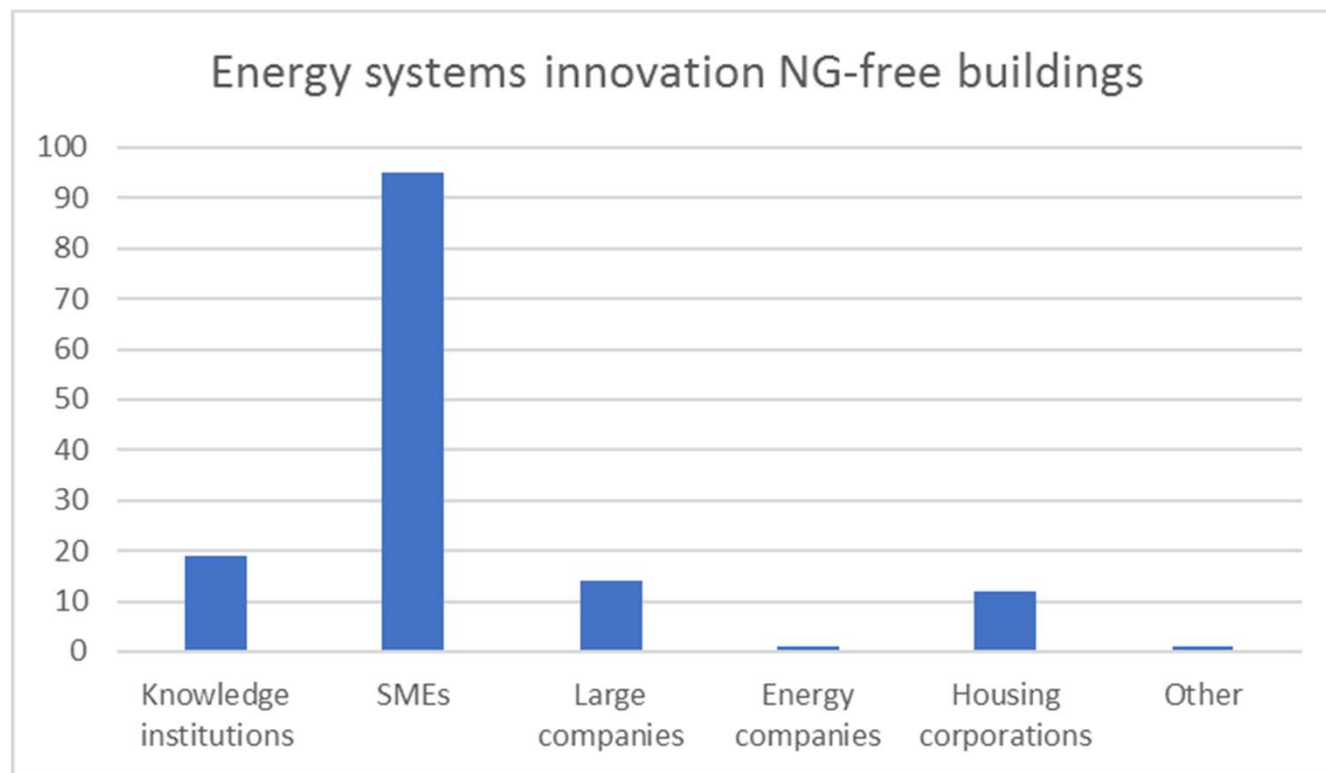
Natural Gas free experiments in municipalities: Organisations



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Innovations for Natural Gas free buildings: Organisations



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Conclusions

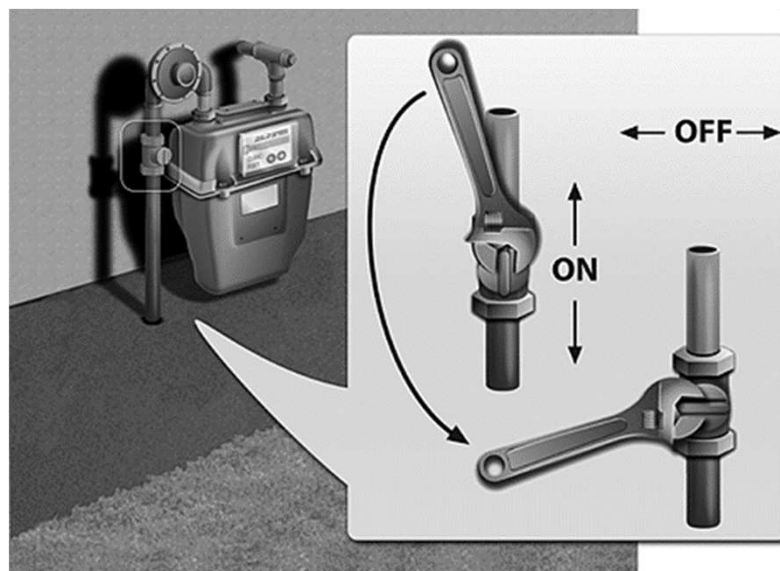
Typical Dutch 'problem'

Strong driver for energy transition

Strong legislation

Regional and local initiatives for experiments

Innovation subsidy schemes



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