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The role of gas in making the energy system sustainable

Wout de Groot, manager Gasunie New Energy

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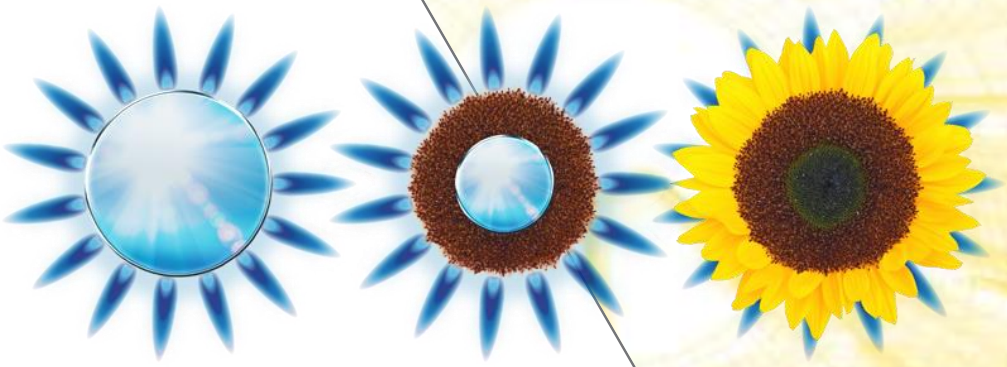
- In cooperation with partners we develop business opportunities in sustainable energy



Gasunie New Energy is part of the Gasunie company. Gasunie is an independent gas infrastructure company seated in The Netherlands

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The role of gas in a sustainable energy system:

1. Reducing emissions via smart use of gas

2. Increasing the share of green gas in the energy mix

3. System integration

Main focus of Gasunie New Energy

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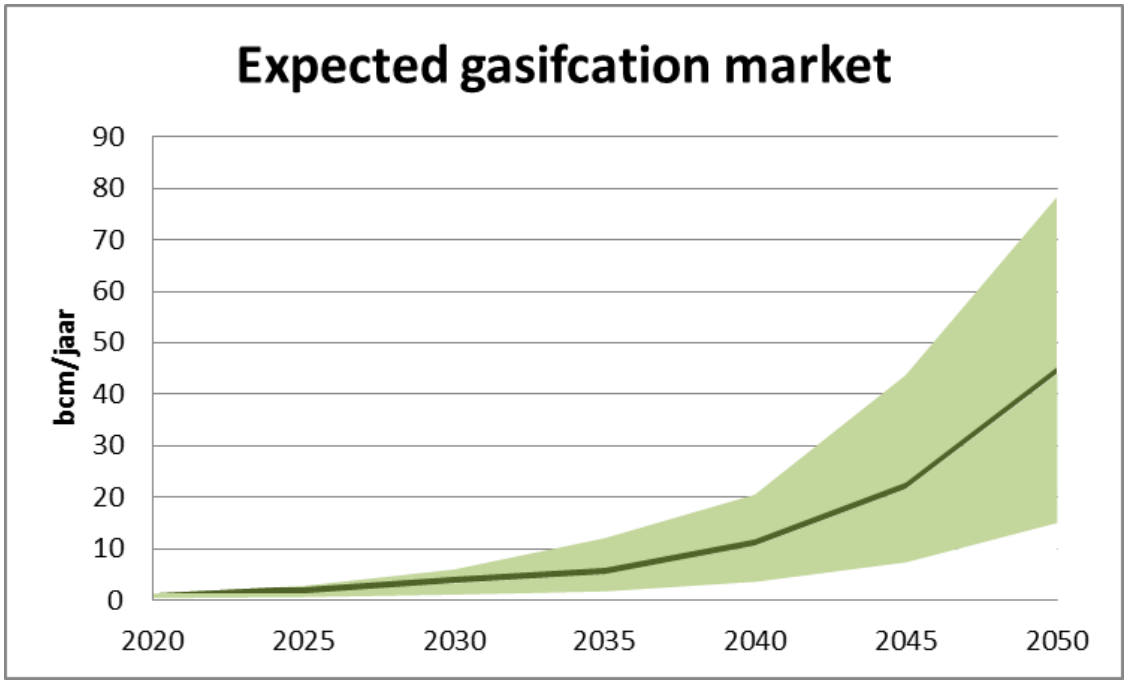
Gasification as potential large scale source of sustainable energy: >15% of EU gas demand 2050



Sander Markus; Biomass and gasification study Gasunie April 2015

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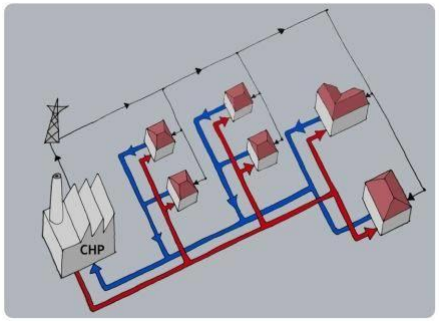
Heat plays a substantial role in reducing CO2 emissions

More efficient use of waste heat (In NL 15% conversion loss)



Potential of geothermal energy

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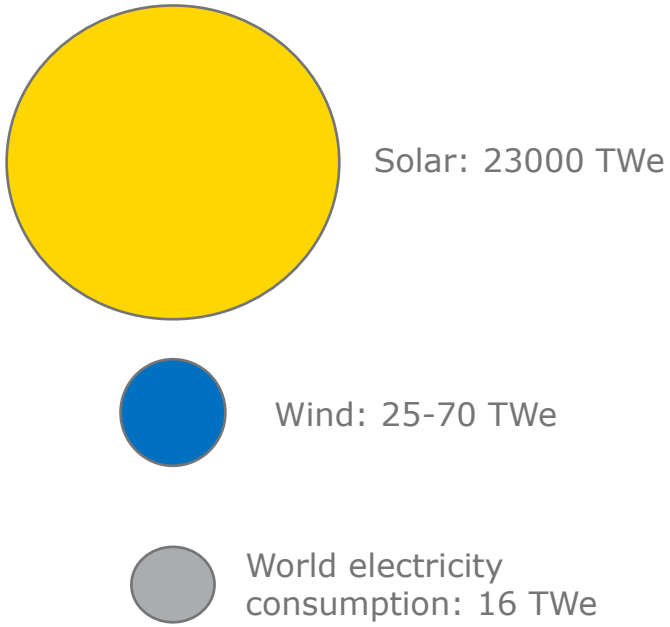
The power of renewable electricity to provide base load energy supply

Solar and wind are abundantly available



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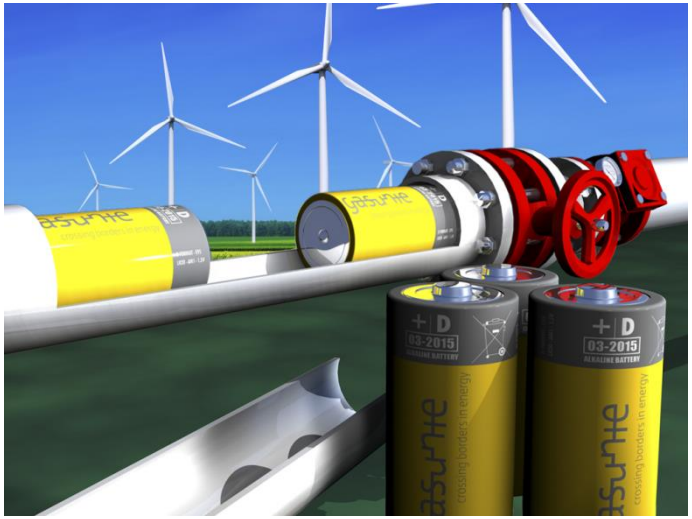
The power of gas infrastructure to provide seasonal storage and peak delivery

Large scale transport- and storage capacities



As an example:

~100 TWh gas storage in the NL is already available

NL

150 TWh of electricity used annually in the NL

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Main challenges for developing integrated sustainable energy solutions

1 Predictability

- Sustainability of old business models
- New business models require different perspectives
- How to value beliefs

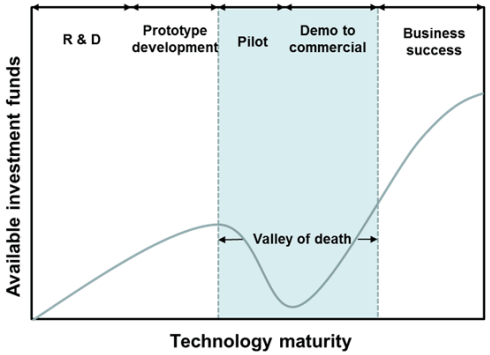
1+1=2

2 Value-chains

Energy → Non energy

3 Roles and responsibilities

Upscaling of innovations to sustainable business models may require (temporally) different roles and responsibilities to bridge the ´valley of death´



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Main conclusions

1. Green gas and existing gas infrastructure can optimize the use and development of solar, wind and heat

2. New energy solutions require non-traditional value-chains and new business approaches

3. Development and upscaling of new concepts and technologies may require to (temporarily) allow for different roles and responsibilities