



Renewable Gases – From general perspectives to real projects

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CEER Future Role of Gas Report

- Gas DSOs welcome engagement of the regulators around the Future Role of Gas
- Visions for energy need to take into account the 'whole system' and impacts changes in one area (e.g. increasing penetration of intermittent renewables on the electricity grid) have on others (e.g. demand for fast responding gas generation)
- Decarbonised gas can and should play a big role in the future of European energy – regulators need to be ready
- The future is now: impacts are already being felt



- There are a number of sources of green gas, such as biomethane and hydrogen, which can be used in our networks to provide heat and fuel for transport, and offer a range of benefits alongside their contribution to reduced carbon emissions.
- Gas networks are leading innovation projects which are providing technical understanding of green gas injection into the grid, as well as demonstrating commercial potential and highlighting necessary regulatory changes to encourage growth in the sector.

Sustainability



BIOMETHANE

Around 500 sites inject biomethane into Europe's grid, decarbonising gas users without any change to their equipment or behaviour.



BIO-SNG

Gasification of waste and other biomass could significantly expand the potential for green methane – alongside the exciting potential for power to gas from excess renewable electricity.



HYDROGEN

Gas networks are working on collaborative innovation projects around Hydrogen. In the UK these are building on Northern Gas Networks' H21 Leeds Citygate, which investigated converting the existing gas network in Leeds to a hydrogen network.



GAS IN VEHICLES

Green gas can make a significant contribution to decarbonising the transport sector, particularly HGVs, building on Europe's natural gas refuelling network, and exploiting the potential of hydrogen.

Projects: Biomethane in France

- National objective for renewable gas to account for 10% of gas consumption by 2030
- 215GWh injected from 26 biogas sites in 2016 compared to 82GWh (17 sites) in 2015; still growing
- Gaya Project (Engie and partners) evaluating and demonstrating gasification technology for methane production



RENEWABLE GAS FRENCH PANORAMA 2016





Projects: Energiepark Mainz, WindGas Hamburg & WindGas Falkenhagen (+ Methanation)

- Hydrogen produced by electrolysis, partly from local wind farms
- Hydrogen injected into local and TSO grids used directly in transport but also heating and wholesale
- Three of 31 current power-to-gas projects in Germany



Project: Rheinland Refinery Complex

- Shell and ITM power installing large scale electrolyser to produce Hydrogen
- 10MW electrolyser would be the largest in Germany
- Refinery uses 180,000t of Hydrogen per year





Projects: Hydrogen Grid Feasibility

- NGN/WWU Leeds H21 project well known – all UK gas distribution networks now collaborating on next steps
- Cadent feasibility project for Liverpool – Manchester Hydrogen grid published
- SGN exploring potential for 100% H2 grid

Leeds
City
Gate



Cadent
Your Gas Network



**The Liverpool-Manchester
Hydrogen Cluster:
A Low Cost,
Deliverable Project**





Conclusions

- Development of renewable gas across Europe is well underway
- Gas and gas networks has a vital role to play across the energy system: supporting the development of renewable electricity; ensuring secure, reliable supply; and decarbonising heat, transport and industry
- Regulators and policy makers need to be clear about the role that gas can play in the future, and support the innovative activity that will deliver it



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