

brownfieldbriefing

**Examining the UK regulatory framework for the
development and exploitation of unconventional gas
sources**

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Gas Distribution: Connections from unconventional sources and reliance on gas

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Who we are & what we do?

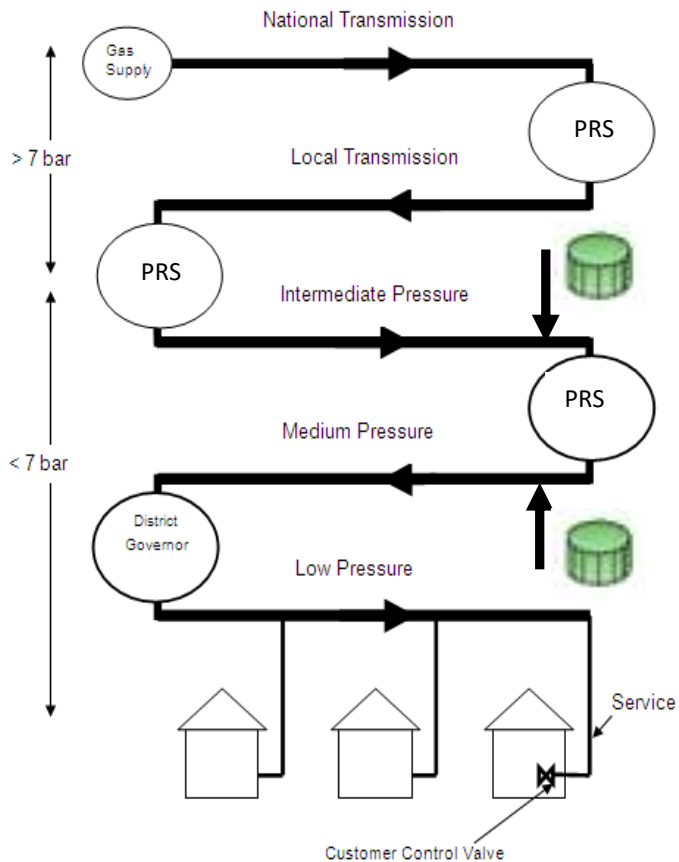
- We provide a safe and reliable gas supply to 2.5m homes and businesses
- Serve a population of 7.5m people throughout Wales & South West England
- Employ 1,950 skilled and experienced colleagues (including Alliance partnership)
- Provide a 24/7 emergency service
- Manage and maintain a network of 35,000km of pipes
- Invest £2m every week
- Connect 15,000 new customers every year



UK Gas Regulation

- Ofgem
 - Allowed revenues over a regulatory period
 - RIIO: Revenue = Incentives + Innovation + Outputs
 - £ for *Outputs* delivery
 - £ for performance against *Incentives*
 - £ for delivering *Innovation* via NIA and NIC
- Gas Distribution Networks
 - Facilitating connections, not producers/operators
- Totex sharing – savings benefit GDN & Consumer

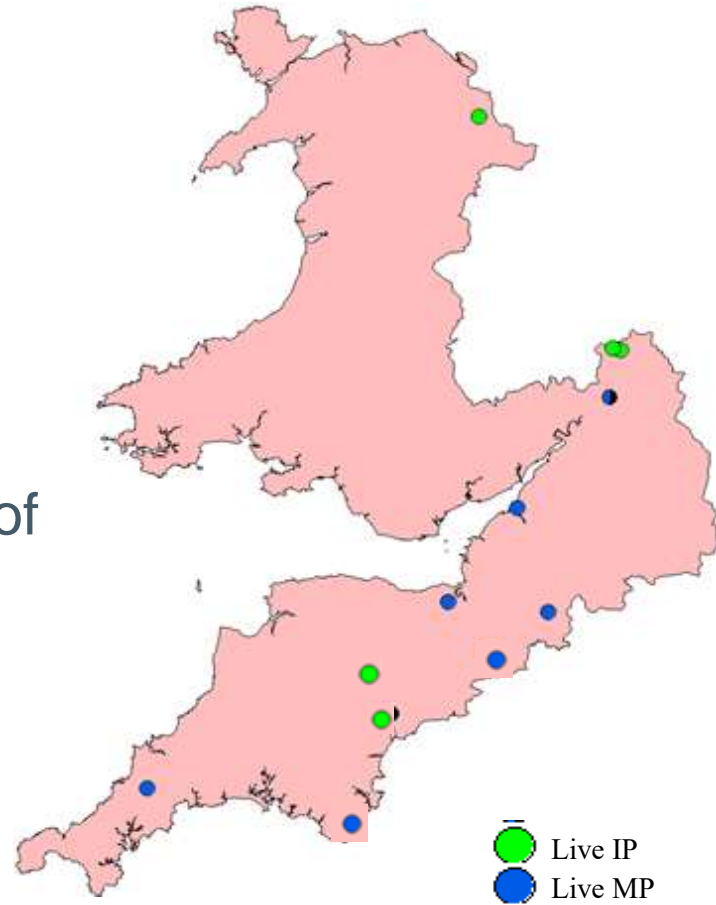
WWU Network Summary



- 17 Off-takes - the physical interface between the National Transmission System and WWU
- 3 above ground HP storage sites - with a total of 15 vessels to enable the network to supply the within day variation in demand
- 2400km of welded steel pipelines operating at 7 to 70 bar, transporting gas from the Off-takes into Pressure reduction stations. Pipelines also provide storage to ensure a largely flat profile of gas is taken from the NTS throughout the day and supply large loads such as power stations
- 331 LTS Pressure Reduction Stations (PRSs) which reduce gas from transmission pressures to distribution pressures and supply the distribution systems
- 2864 District Governors which ensure minimum pressures are maintained throughout the below 7bar distribution system
- 35,000kms of Distribution Mains operating at pressures between 21mbar and 7bar (19000km Polyethylene, 9000km Iron, 4,000km steel)
- 2.5 million supply points with service pipes that we own and operate up to the emergency control valve upstream of the meter

Biomethane Connections (WWU)

- 12 connected projects to date
- Total capacity of:
 - 10,550 standard cubic meters / hour
 - 996 GWh a year
 - Double the predicted annual energy of Swansea Tidal Lagoon
- Major opportunity in ‘greening gas’
- Comparatively low cost solutions



Key Work Areas (UK wide)

Gas Quality

- NGD: Bio SNG Demonstration Plan
- NGN: Leeds City Gate
- SGN: Oban Project

CV for Charging

- ENA Consultation
- Reducing Costs and Removing Barriers for Low-flow Gas Entry Sites: Transforming the Calorific Value (CV) Regime for Small Sites

Capacity

- WWU: Bridgend Future Modelling
- WWU: Cornwall Energy Island

General

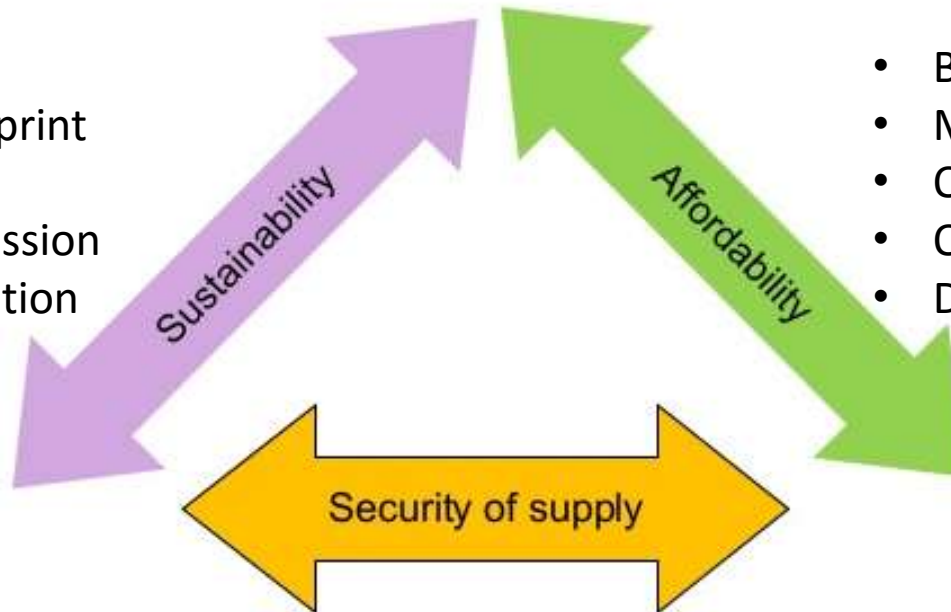
- NGD, SGN, WWU: Impact of Distributed Gas Sources on the GB Gas Network



Broader Context

- Renewable
- Carbon Footprint incl.
 - Transmission
 - Distribution
 - Storage

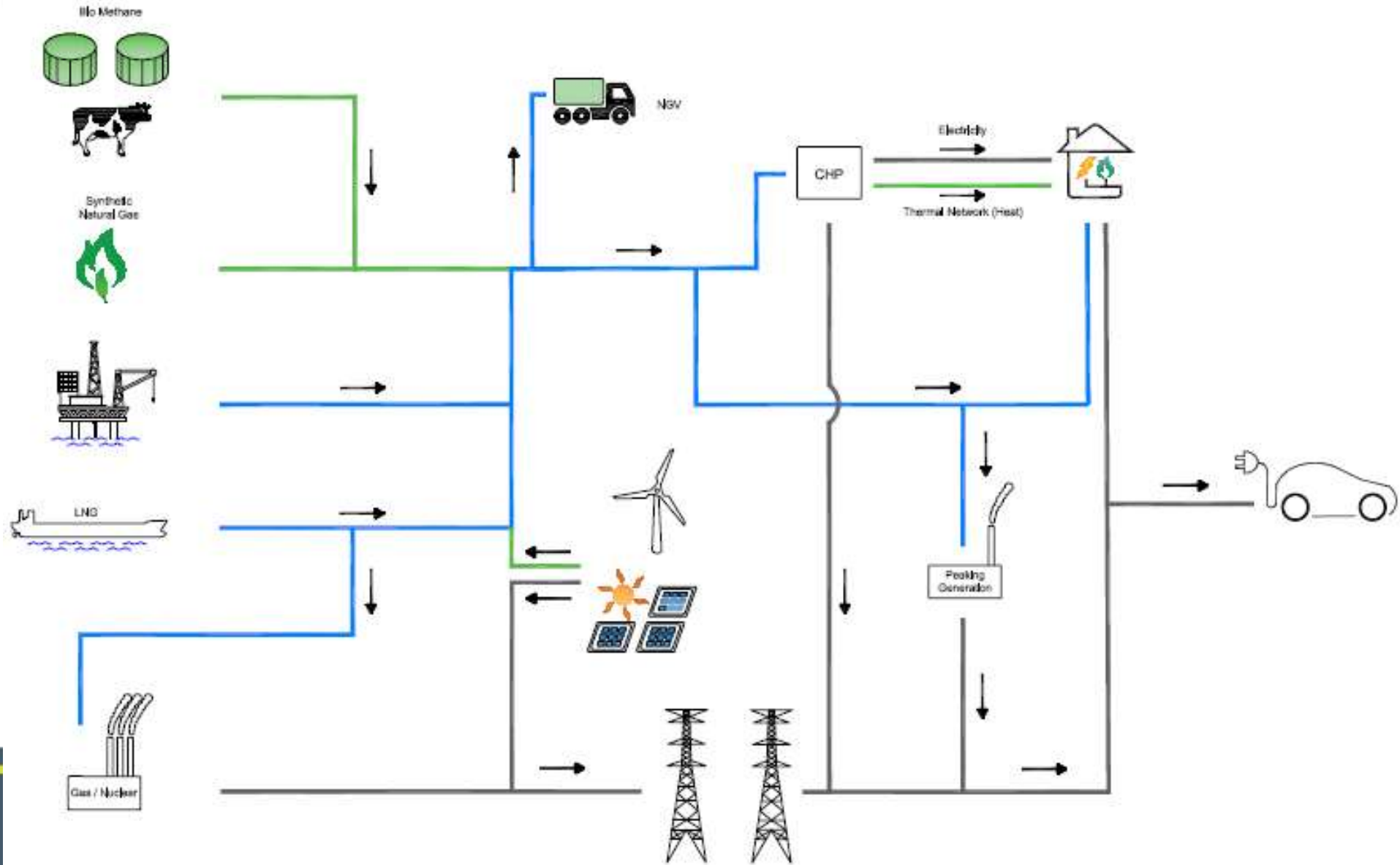
- Build
- Maintain
- Optimal Generation vs Storage
- Operate
- Dispose



- Peak Day 1:20
- Diurnal & Seasonal Demand Variation
- Fault Conditions
- Maintenance



Integration of Energy Networks



What's next:

- Further work with DECC / HSE to update GSMR
- Further work with parties that want to put gas into our network to understand any improvements we can make
- Further work with Policy Makers to make sure future energy pathways are based on robust evidence



Conclusion

- Unconventional gas entry is part of the solution to the energy trilemma
- Understanding future customer requirements is key to ensure our Networks are fit for purpose
- Innovative and integrated solutions are required to remove some existing barriers

