

# NEXT STEPS FOR THE GAS GRID

## NEXT STEPS

### Focus on future-proof policy

The best use of the gas grid in the future is still uncertain: scenarios range from the widespread repurposing of the existing gas grid to run on 100% hydrogen to the full-scale decommissioning of the grid.

In general, policy decisions made in the short term should reflect this uncertainty about the long-term plan and as far as is practical and proportionate not shut off potential options prematurely.

### Enhance efficiency gains

Increasing the efficiency of energy use is a priority which can bring immediate and long-term benefits in terms of decarbonisation, energy security and affordability.

### Deploy biomethane

Injection of biomethane to the gas grid can provide immediate reductions in the emissions associated with heating. Government should continue to support this by ensuring regulatory barriers to deploying biomethane are as low as possible, while maintaining the safety of the gas system.

Additionally, Government should work with industry to ensure they are supporting biomethane injection into the gas grid to become commercially viable without subsidy beyond the lifetime of the RHI which closes in 2021. Widening the gas quality regulations could support the deployment of biomethane and other forms of low carbon gas.

There are, however, potential associated trade-offs; for example, lower gas quality standards reduce the efficiency and lifetime of appliances.

### Explore bioSNG

BioSNG is a technology with significant potential to support decarbonisation. Government should explore ways in which support for bioSNG could be provided. This is particularly challenging because of its immaturity relative to other low carbon heat technologies.

### Support hydrogen blending

If injecting hydrogen/natural gas blends (ranging from 3-20% hydrogen by volume, equivalent to 1-6% by energy content) into the gas grid can be shown to be safe, relevant exemptions from GS(M)R should be issued by HSE and/or GS(M)R should be modified to allow more than 0.1% hydrogen by volume to be transported in the gas grid.

### Develop a flexible gas grid

There is significant discussion in the power sector about the development of a more 'flexible' system. To a certain extent, this could be replicated in the gas grid whereby a system utilising almost exclusively natural gas could move to a more flexible system incorporating a number of different gases.

### Improve billing

Steps should be taken to improve billing methodologies in order to address issues arising from the use of low carbon gas. This offers benefits to natural gas customers by accurately billing for the energy they use, but it also removes barriers to the deployment of biogases and hydrogen blending by reducing the costs imposed due to propanation.

### Demonstrate 100% hydrogen

Repurposing parts of the existing gas grid to transport 100% hydrogen could be an effective way to reduce emissions associated with heat.

The costs, implications and desirability of such an option remain hugely uncertain, however, so policy in this area should focus on evidence gathering and keeping options open.

This requires action in the short term in the area of safety testing and demonstrations as these would be essential prerequisites to any potential widespread conversion of the gas grid to 100% hydrogen. There is significant scope to improve the coordination of work in this area.

#### **Long term options on the gas grid**

If a decision were taken during the next round of price control negotiations to decommission the gas grid, this would commit the UK to pursuing decarbonisation of heat without the full range of options available.

Ofgem should, within its next round of price controls, reflect the uncertainty around the future of the gas grid and allow for different potential options to be pursued in the future.

#### **Continue the Iron Mains Replacement Programme (IMRP)**

The Iron Mains Replacement Programme (also known as the Iron Mains Risk Reduction Programme) should continue in order to ensure the ongoing safety of the gas grid.

## **MEDIUM TO LONG-TERM CONSIDERATIONS**

#### **Paying for a conversion to 100% hydrogen**

If there were a conversion to 100% hydrogen, then major political decisions would have to be taken on whether the costs of converting to 100% hydrogen should be paid for by general taxation or through levies on energy bills or a combination of both.

#### **Regulation of 100% hydrogen**

If there were a conversion to 100% hydrogen, it may be possible to regulate 100% hydrogen with existing HSE regulations. However, if it were to become apparent that there is a need to create new regulations for 100% hydrogen, this is likely to take 5 to 10 years to complete.

#### **Governance of low carbon gas**

A potential transition to 100% hydrogen poses challenges for the governance of the gas grid. Today, there is no certainty as to the future ownership and operation of a hydrogen transmission network, hydrogen production sites and hydrogen storage. These roles do not need immediate clarity and may never need it, but consideration must be given to them in the event of a transition to 100% hydrogen.

#### **The future role of biogases**

In the long term, bioenergy is thought to be able to play useful roles in decarbonising sectors such as transport and aviation alongside playing a role in heat. There will need to be a long-term plan for the best uses or re-applications of these resources.

#### **Whole system interactions with power and transport**

Linkages and interactions between power, transport, heat and other energy sectors must be considered if decarbonisation across the economy is to be cost-effective and timely.

#### **Production and consumer-end questions**

Arguably the biggest uncertainties around the increased use of low carbon gas relate to the production of it (including carbon capture and storage) and the implications of low carbon gas for consumers, rather than the networks. These issues will be considered in detail in Parts 2 and 3 of the Future Gas Series.