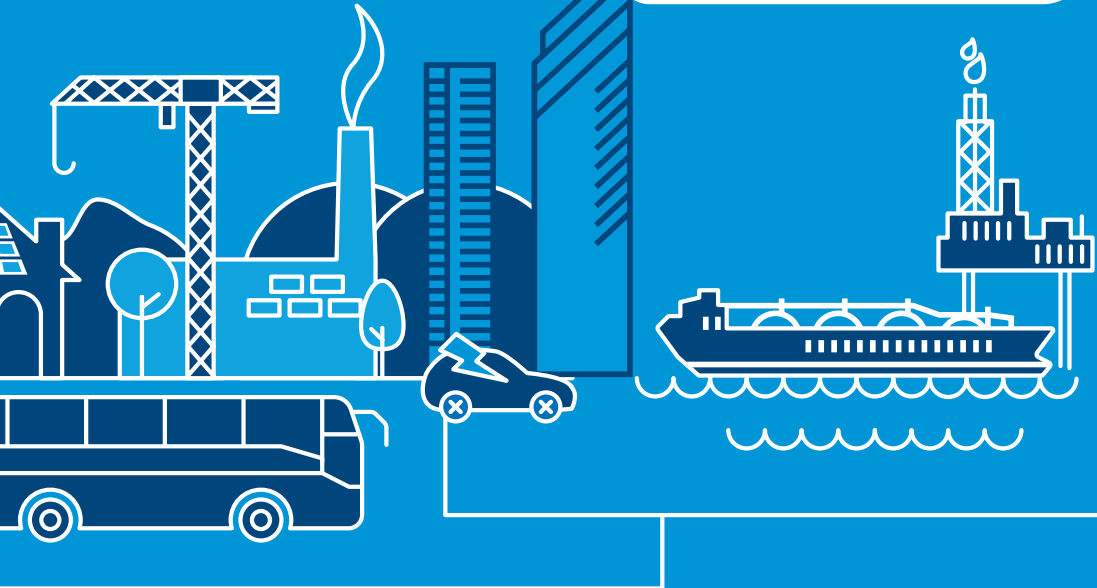


March 2018

nationalgrid

# The Future of Gas: How gas can support a low carbon future

In brief



# The role of gas today...

Today's gas market and the gas networks play an important role across the UK economy, providing the majority of energy to homes, businesses and industries.

8/10

of UK homes use gas for heat

60,000

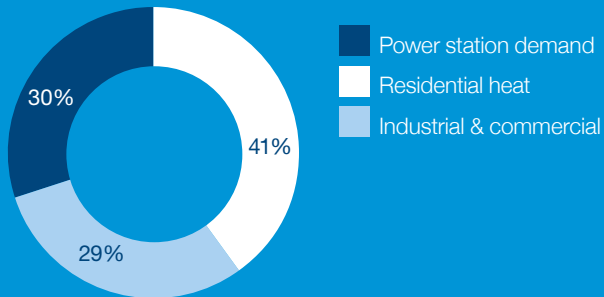
new consumers are connected to the gas network each year

96,000

gas connections have been made since 2007 to address fuel poverty

In 2016  
**42%** of electricity was generated from gas

The UK's gas needs in 2016



The gas networks deliver **three times** the energy delivered by the electricity networks.

884TWh

2016/17: Total gas demand

284TWh

2016/17: Total electricity demand

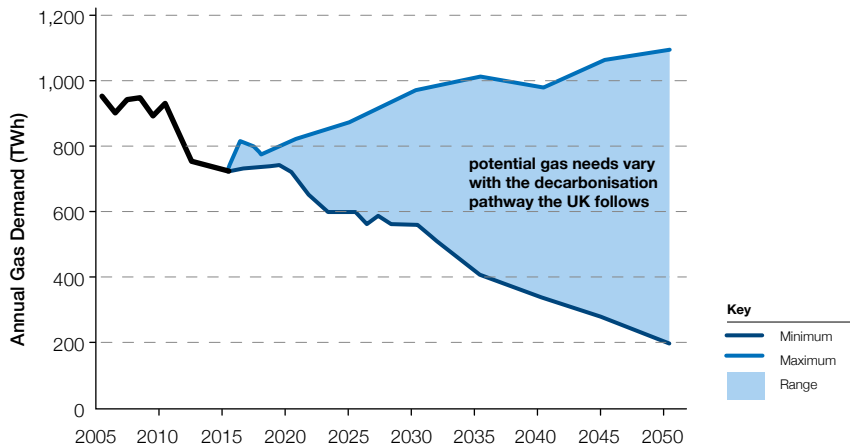
# ...and in the future

## The UK has committed to reduce carbon emissions by at least 80% by 2050 from 1990 levels.

Since November 2016, we have worked with ~150 stakeholders to draw together a comprehensive range of evidence and views, and summarise the key conclusions being made about the evolving energy system and the future of gas.

This document highlights the critical role of gas today and in the long term, the opportunities that decarbonising gas creates in the energy sector and the wider UK economy, and what is needed to unlock these opportunities. This is explored in more detail in 'Future of Gas: How gas can support a low carbon future'. We have found that:

- Gas will play a crucial role for many decades to come, supporting the UK's Clean Growth Strategy.
- Decarbonising gas can support homes, transport and industrial opportunities across the UK to lower carbon emissions by using hydrogen and biogases along with natural gas.
- In all pathways to 2050, explored through our Future Energy Scenarios, there is a clear, enduring need for gas. Gas can be used to meet the 2050 targets cost-effectively.



- A national rollout strategy for low carbon heat using only electric heat sources would mean converting 20,000 homes a week from 2025 – 2050.
- Diesel powered Heavy Goods Vehicles (HGVs) account for only 5% of vehicle miles, but 18% of road transport greenhouse gas emissions, and 16% of nitrous oxide (NOx) emissions. Gas is the only commercially viable solution available today to decarbonise these.
- Industry needs access to gas not just for heat, but also as a raw material for manufacturing processes.

## Shaping a sustainable energy future requires thinking and acting differently.

Decarbonising gas creates a platform for the UK to be a world leader in climate action, by delivering emissions reductions across power, heat, transport and industry.

Pioneering in this field will allow the UK to create new industrial and export opportunities through innovation, skills and services. This can be through utilising the UK's existing strengths from the oil and gas sectors, as well as new opportunities from moving to a hydrogen economy, utilising biogases and low carbon heat networks.

Carbon Capture Usage & Storage (CCUS) deployment is vital across the economy. It can be used to capture and store emissions from natural gas or biofuel power stations and industry, whilst the heat and transport sectors can use low carbon hydrogen produced through Steam Methane Reformation combined with CCUS.

The evolution of the gas market and networks will require whole energy



systems thinking, as the gas and electricity systems increasingly interact with each other, and the decarbonisation opportunities in the wider UK economy.



Networks and markets need to adapt, and our network can also be repurposed, for this new future.

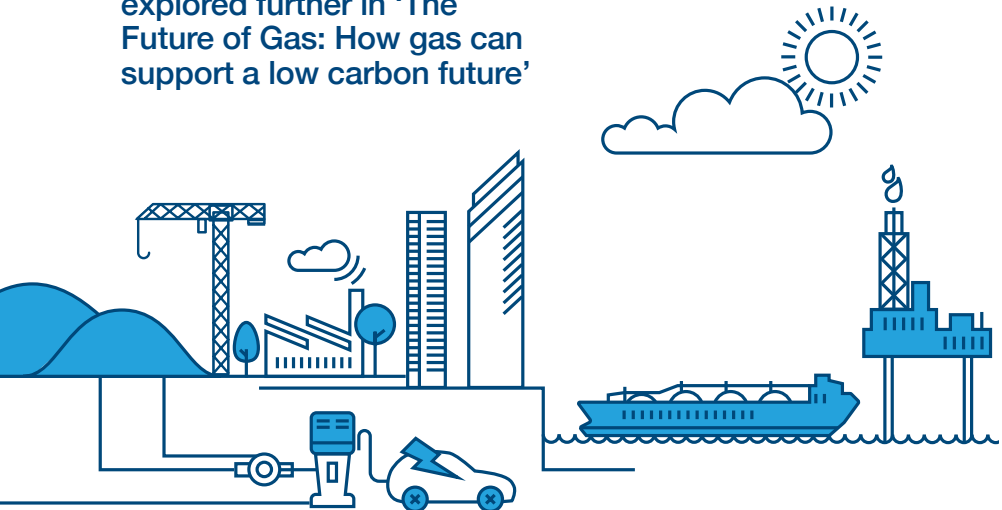
Key to developing these opportunities will be removing policy gaps and barriers to decarbonising gas.



## What is needed next?

- Further support for innovation, commercialisation and deployment of emerging decarbonisation options for the UK economy, across energy, heat, transport and industry.
- National policy clarity on the next steps to decarbonise heat as soon as possible, so that industry has the confidence to invest.
- Coordinated action between governments, regional and local authorities to encourage gas as a way to reduce carbon emissions from commercial vehicles such as HGVs and buses in the shorter term, as well as developing hydrogen transport options for the longer term.
- Government continuing to develop the UK CCUS Deployment Pathway to unlock decarbonisation options across the UK economy and supporting hydrogen production.
- Government, regulators and the industry working together to remove the barriers to whole energy systems development, across gas and electricity, transmission and distribution, and beyond the energy sector.
- Government demonstrating a clear commitment to developing a decarbonisation of gas strategy as part of whole energy system developments.
- Industry and National Grid working with decision makers to unlock the opportunities from decarbonising gas.

**These next steps are explored further in ‘The Future of Gas: How gas can support a low carbon future’**



# Leading the world in climate action...

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There are already exciting innovations and projects being proposed across the UK to unlock new decarbonisation and industrial opportunities.

The UK can lead the world in climate action by decarbonising gas. Our analysis and evidence shows that decarbonising gas and the supporting networks can be used to meet the UK's 2050 carbon targets and improve air quality cost effectively.

Action is needed now to ensure that the gas market and networks evolve in the most effective way to unlock these opportunities.

Policy makers, regulators and the industry have the opportunity to come together now to create a smooth transition to decarbonised gas, which will support not only the low carbon transition, but a low carbon future that delivers for all consumers.



# Find out more

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**November 2016**  
The Future of Gas:  
A Transmission Perspective



**July 2017**  
The Future of Gas:  
Progress Report



**March 2018**  
The Future of Gas:  
How gas can support a  
low carbon future

# Continuing the conversation

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[futureofgas.uk](http://futureofgas.uk)



Twitter debate using  
[#futureofgas](https://twitter.com/futureofgas)

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project publications, please visit  
**futureofgas.uk**

