

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



Project CLoCC Stakeholder Day
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20 September 2018

Gas plays an important role in the economy today

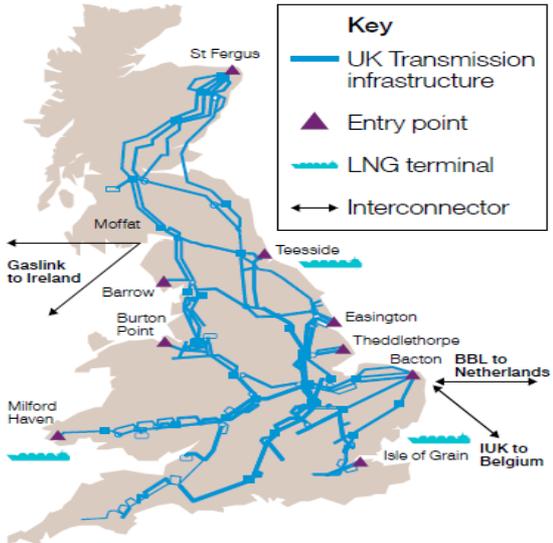
7,660km	Of gas pipelines through the GB National Transmission System
60,000	New customers connected to the gas networks each year
96,000	Gas connections have been made since 2007 to address fuel poverty
42%	Electricity generated from gas in 2016
8/10	UK homes use gas for heat

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



Climate Change Act 2008

The Act requires the UK to have reduced carbon emissions by at least 80% by 2050 from 1990 Levels, whilst maintaining security of supply and providing energy at lowest cost



Future of Gas programme set out to:

- Understand customer & stakeholder views to set out what the future holds for gas
- Understand the potential future impacts on our network and the gas market
- Develop policy recommendations to support government and regulators
- Consider innovative solutions to future challenges

There is international consensus on the enduring need for gas

but further action is needed so gas and electricity can be critical partners in a low carbon world

National Grid UK
@nationalgriduk

Following

"In the early 2020's we'll need to make critical decisions" National Grid's UK Executive Director Nicola Shaw at our #futureofgas event



2:49 am - 9 Mar 2018

3 Retweets 5 Likes

National Grid UK
@nationalgriduk

Following

"I hear all the time that gas is an interim solution, but we believe there will be a role for gas for a long time"
@UNECE Director of Sustainable Energy Scott Foster at #futureofgas launch



3:42 am - 9 Mar 2018

10 Retweets 7 Likes

"I do not understand people saying that gas can only be a bridging fuel for renewables ... Under the current situation, you may get to 50% renewable share in the whole system. How do you fill the rest? **For me, that is the role of gas, the future role of gas**"

- Klaus-Dieter Borchardt (Director, DG Energy, European Commission, 2018)

"The existing gas infrastructure... is well equipped to face the challenges of the future: **it can cope with the evolution that the gas demand will undergo to achieve the climate targets...**"

- ENTSOG Ten Year Network Development Plan 2017

"... It is possible by 2050 to scale up renewable gas (biomethane and renewable hydrogen) production in the EU... by 2050... **using this gas with existing gas infrastructure, smartly combined with renewable electricity in sectors where it adds most value**, can lead to €138 billion societal cost savings annually compared to decarbonisation without a role for renewable gas

- Ecofys / Navigant 2018

We have presented a series of key themes

Decarbonisation of Heat

Demonstrates why gas is the ideal solution for decarbonising residential and commercial heat



Decarbonisation of Transport

Discusses why decarbonising transport through gas (and electricity) should be an early priority



Decarbonisation of Industry

Demonstrates why decarbonising the gas sector is the best option for much of GB industry



Whole Energy System

Establishes why the ability to work across all energy systems will become much more important



Future Networks & Markets

Discusses the products and services needed to facilitate the networks and markets of the future



Carbon Capture Usage & Storage

Maintains that CCUS plays a critical role if decarbonisation is to occur at the lowest possible cost



We will set out:

The challenge & potential solutions

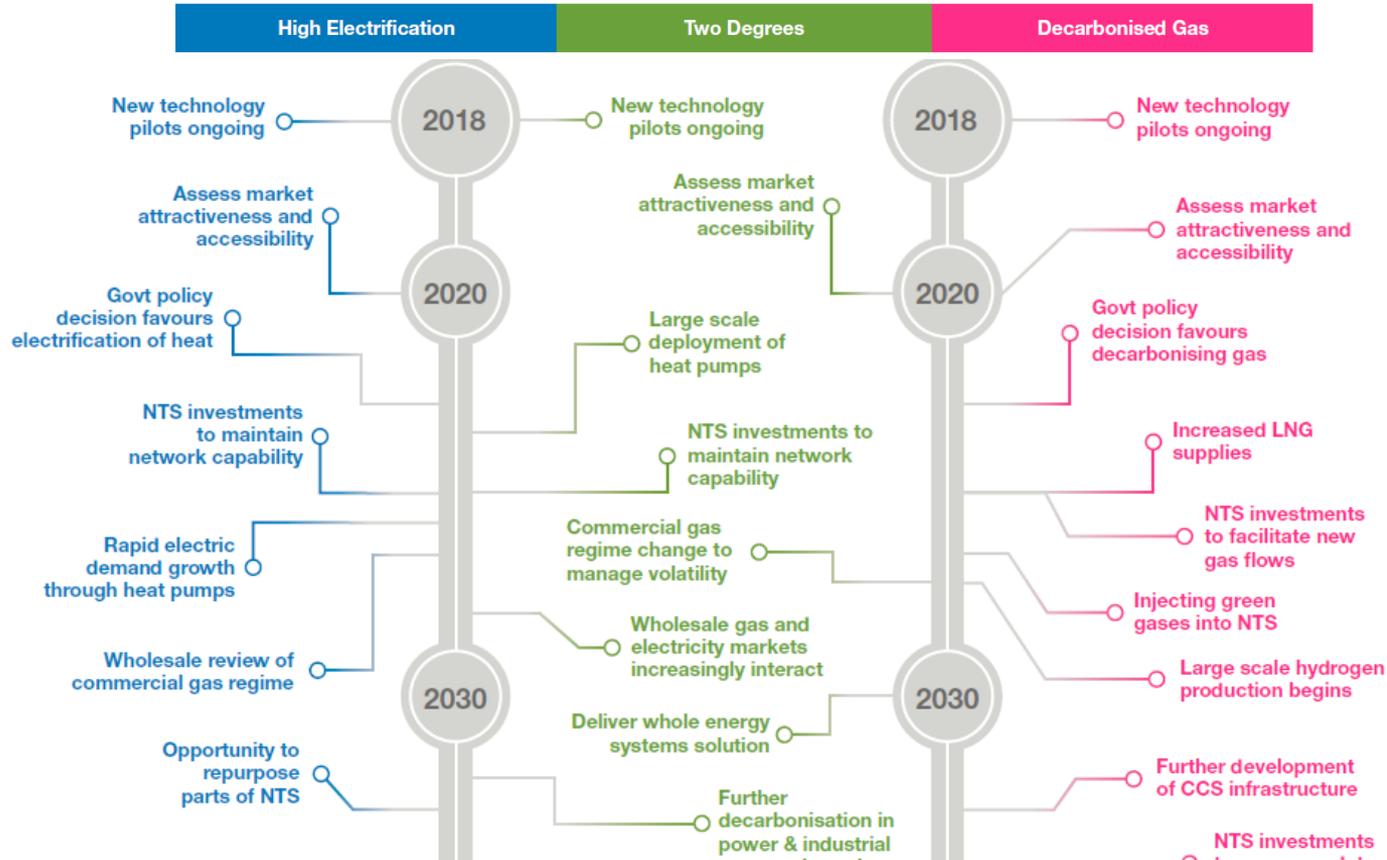
What National Grid will do

No regrets actions
Signposts/triggered actions

A potential timeline for policy decisions and actions

Our public policy recommendations

The gas markets and networks will need to continue to evolve to support changing needs



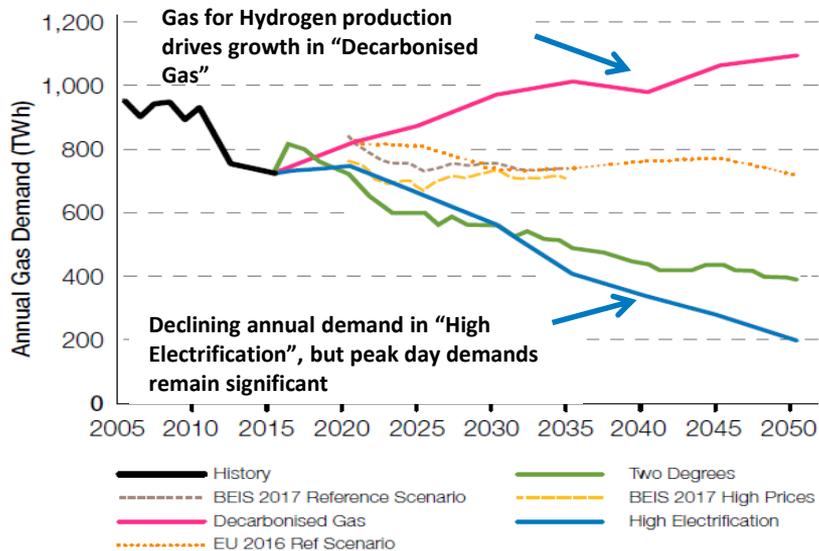
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High Electrification

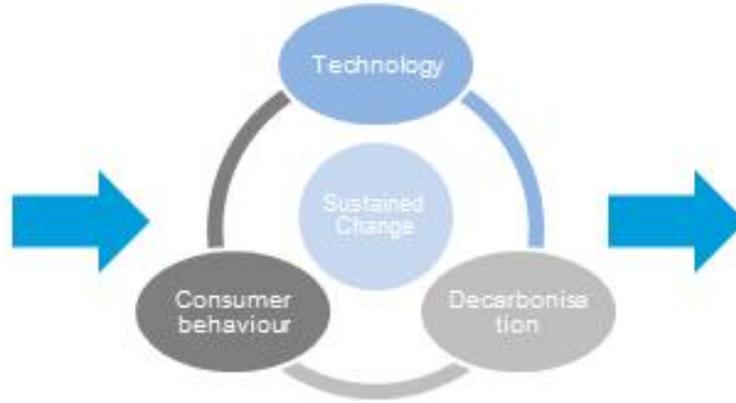
Two Degrees

Decarbonised Gas

Annual Gas Demand to 2050



What actions are we taking



Draft Gas Industry Change Plan Topics (1/2)
(Example ideas for discussion shown for illustrative purposes only)

Topic	Lead	Start Date	End Date	Status
Consumer Behaviour	Review the impact of the proposed changes on consumer behaviour and the role of the gas industry in supporting this.	Q1 2020	Q4 2020	In progress
Technology	Review the role of the gas industry in supporting the development of new technologies and the role of the gas industry in supporting the development of new technologies.	Q1 2020	Q4 2020	In progress
Decarbonisation	Review the role of the gas industry in supporting the development of new technologies and the role of the gas industry in supporting the development of new technologies.	Q1 2020	Q4 2020	In progress

Project CLoCC



Project CLoCC as a key enabler for the Future of Gas

- **As the gas market evolves our customer base is changing rapidly**
 - ✓ more frequent, smaller supply and demand connections
 - ➔ Supply: biomethane, bioSNG, unconventional gas, power to gas
 - ➔ Demand: transport, peaking generation, hydrogen production
- **Gas is effectively competing alongside other energy forms**
 - ✓ cost competitiveness is key
 - ✓ agility and pace will contribute to success
- **Ultimately the most attractive solutions for customers and policy makers will prosper**
 - ✓ CLoCC has the potential to accelerate the transition to a decarbonised gas future
 - ✓ ability to decarbonise is the key to a significant long term role of gas

Thank You

nationalgrid