

Gas Markets Plan -Update

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What is the program?

To collaborate across the gas value chain and proactively consider the needs of the market over the next 2-10 years as the role of gas changes due to decarbonisation

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DEVEL	OPING A GAS MARKETS PLAN TOGE	ether		
	Download GMaP 2020			
	What is GMaP?			
Gas will be key as we transition to a restance, suscentiable energy system. However, we need to manage the challenge of and pase of change. To community whether address and the processing of the consumers, a process is needed to proactively and change across all potential futures.	The GMaP brings together a broad range of stakeholders	orston with holdstry, poly-makers and stakeholdern have launched the East Markets Part (EMUP), to propore today for the gas market frameworks of the factor.		
	Publications & Events			
	Our latest releases and upcoming ways to get involved			
N	6	<u>909</u>		
GAS MARKETS PLAN 2020	GAS QUALITY KNOWLEDGE SHARE	FOG FORUM - 24TH FEB		
Download here	Download here	Register here		



Enabling the Gas Market Plan

GMAP released December 19 to provide industry dissemination & transparency



To start the progress of building proactive market evolution

Consider the current influencers of the future and what needs to be considered

Set the 2020 Forward Plan

• H2, GQ & Balancing Focus Areas

Revisit at the end of the year

• End of year report / 2021 Focus Areas & Projects

Future of Gas Steering Group

Cross industry group of senior stakeholders to provide leadership & guidance

22 members

Range of categories

To provide:

- Leadership and guidance to the project
- To help increase the education and engagement of the program

2nd meeting just held

Website for further information:

https://futureofgas.uk/future-of-gas-steering-group/ National Grid | Future of Gas Forum – 24th February 2020

national**grid**

ofgem

Department for Business, Energy & Industrial Strategy

Local Authorities

Gas Users

Consumer

Environment

R&D and Advisory

Technology & Manufacturing

The Focus Areas

Focus areas are being designed to deliver clear outputs, be agile, transparent and gain the input from across the industry



Balancing, H2 & GQ areas commenced Standardised approach, 3 phases:

 Knowledge share, Market Issues & Recommendation and Project delivery

Small working groups for each Focus Area to be formed to help guide the projects

Scoping meeting to shape key project parameters

The Forward Plan for 2020



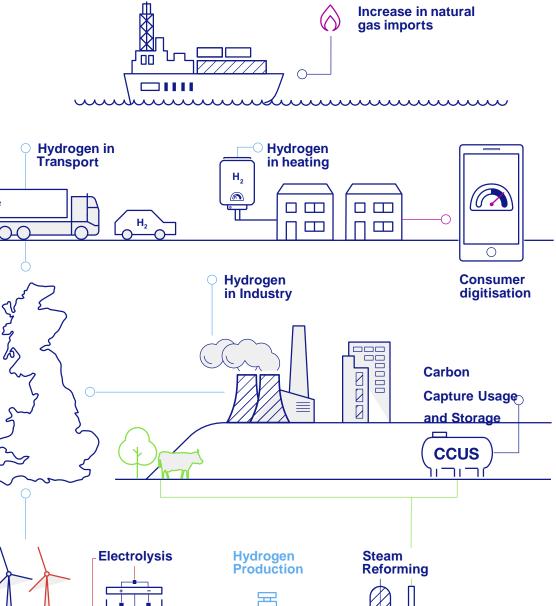
Each focus area will explore how likely and potential changes to the way gas is supplied and used could impact the need for market evolution

① Gas Quality focus area will consider how the changing sources of gas could require market rules changes in order to allow diverse, local and low carbon gases in the GB

② Balancing focus area will consider how the rules that incentivise the gas industry to balance the supply and demand of gas may need to change to ensure efficient operation of the market, as gas supply and demand becomes more variable

③ Hydrogen focus area will consider the possible market rules given the potential production methods, how hydrogen will integrate with natural gas and the end uses

National Grid | Future of Gas Forum – 24th February 2020



The gas quality focus area, starting to deliver

Bill Goode Bill.Goode@nationalgrid.com February 2020

nationalgrid



Where did the idea for a gas quality focus area come from?





"By 2050, a new lowcarbon industry is needed with UK hydrogen production capacity of comparable size to the UK's current fleet of gasfired power stations."

CCC Net Zero – May 19



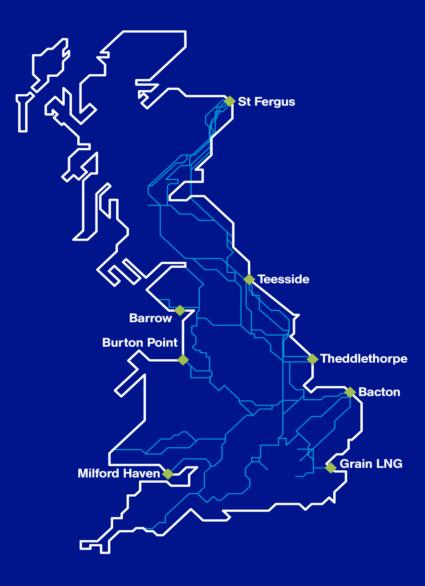
Net Zero driver of change

Low carbon gases will need to play a role in delivering net zero GMaP 2-10 lens, highlights gas quality market change as a area of focus

So what is Gas Quality and why is it important now?

- Gas Quality is the molecular make up of natural gas, which is it not a uniform entity.
- Existing gas quality rules (like the UNC and GS(M)R) were initially created in an era of homogenous supply.
- The gas we use is changing and will continue to change, need to make sure the gas market and rules keep pace with this change.





What is the Gas Quality Challenge

Delivering an entry specification which reduces costs for low carbon gas producers and encourages economic growth and development of the UK gas market

Ensure those end users who are highly sensitive to gas quality fluctuations receive the gas they need to continue to support the UK economy

Building Blocks for Future Rules and Standards

EXIT

Stringent Safety Standards

Economic Viability

Supports Decarbonisation

National Grid

ENTRY

The start of the gas quality focus area

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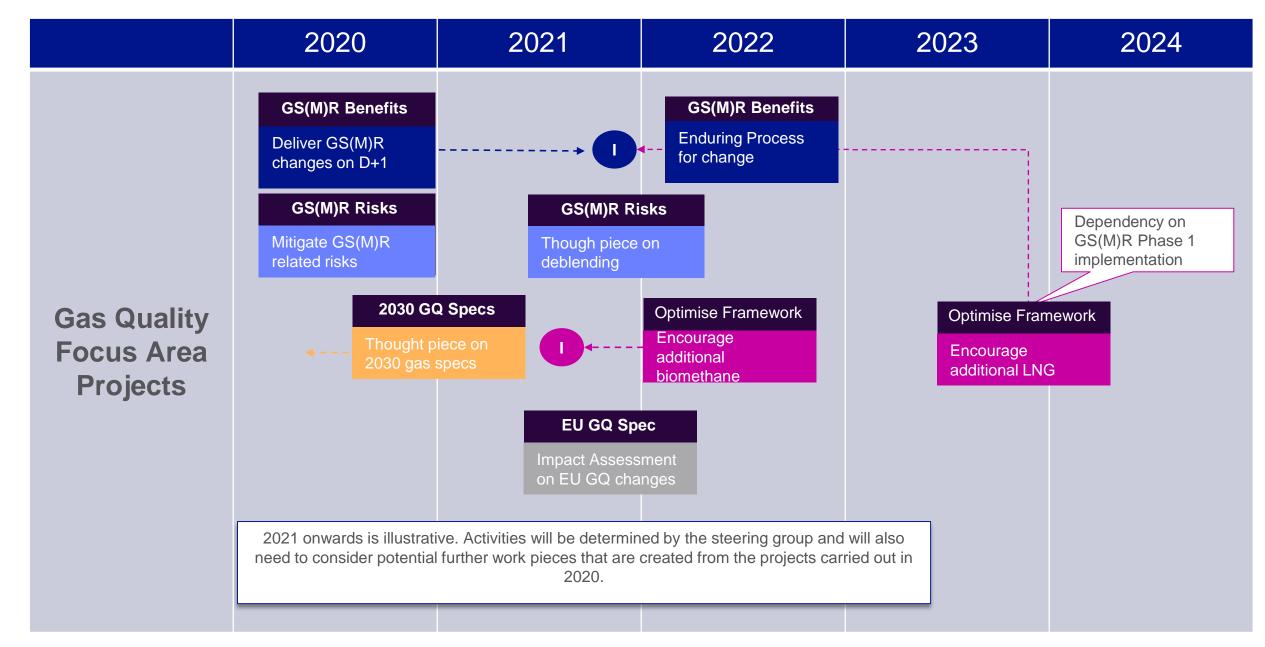
The Gas Market Plan and Gas Quality focus area aims to bring the industry together to work through market related questions.

The focus area will:

- **Define an issue**
- Scope a project
- **Deliver** a solution



Indicative gas quality focus area delivery plan



Developing market frameworks to facilitate hydrogen

Imran Abdulla Imran.Abdulla@nationalgrid.com February 2020

nationalgrid

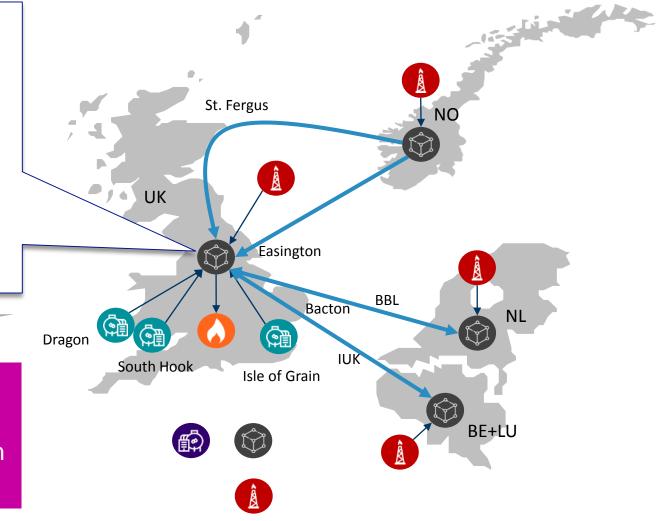


Markets are a key enabler for facilitating competition and liquidity. How these develop through the hydrogen transition depends on many variables.

Key to the current natural gas market has been the continual development of the Uniform Network Code (UNC) to create:

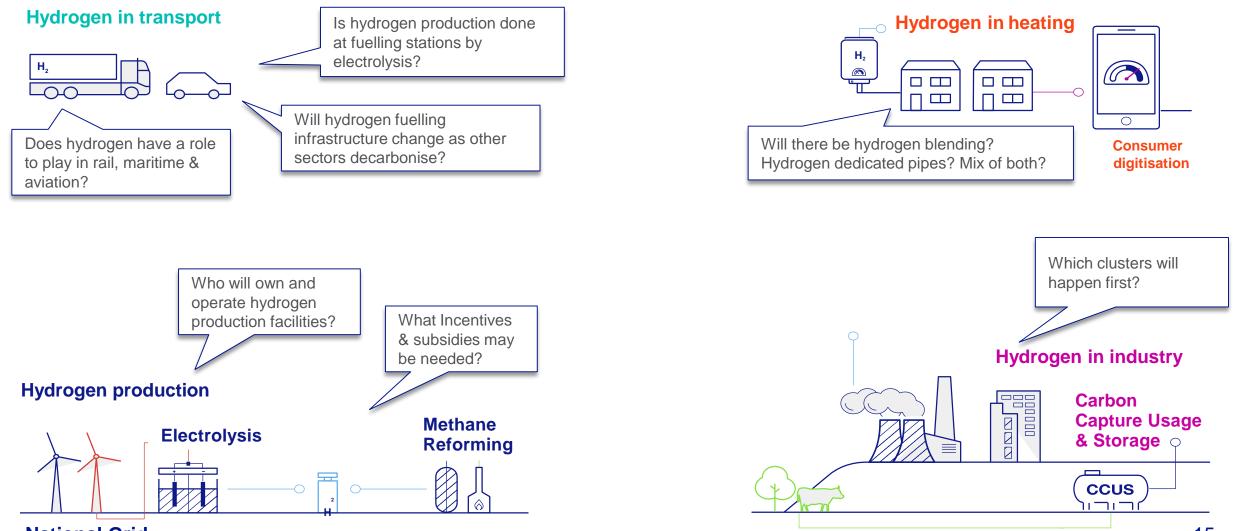
- a traded gas market
- network balancing mechanisms
- capacity auctions and
- charging frameworks

How this develops for hydrogen across the transition will depend on how hydrogen production, consumption and transportation evolves



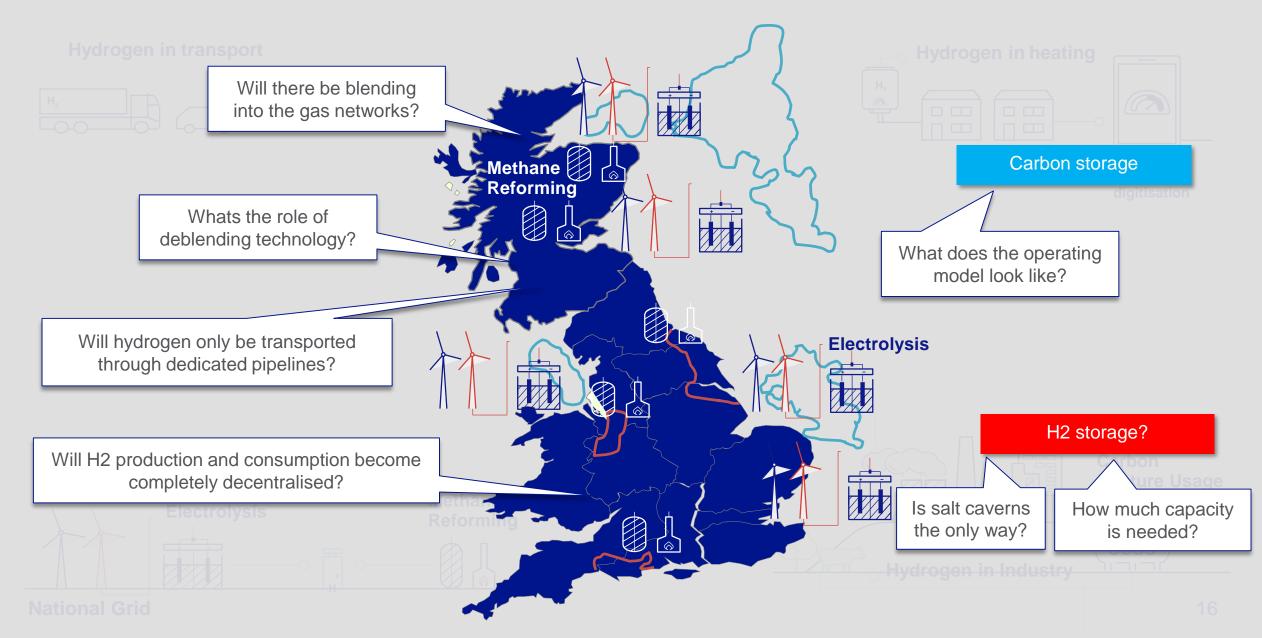
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There is huge potential for hydrogen to help decarbonisation across all sectors. How this potential is unlocked can develop in many different ways.



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There are also many options for how hydrogen will be transported to end consumers.

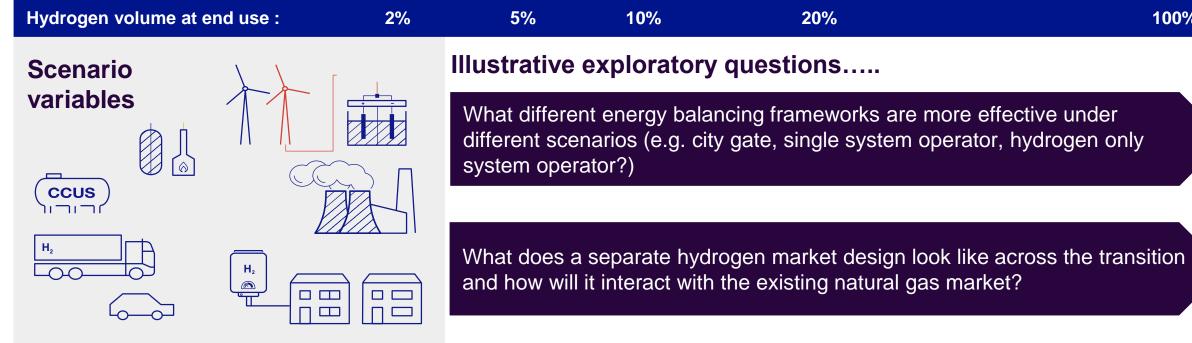


These different hydrogen scenarios create market questions across connecting production, managing consumption, gas network operation, incentives & competition.

H2 vol :2%	5%	10%	20%	20%+(competitive H2 market)	
Facilitating early connections as as as possible	customers who cant	Accommodating larger H2 volumes with CV loss	Broader mark	Broader market design enable a full H2 economy	
Electrolysis entry	accept H2	Changing gas composition	n		
What developments to the existing market are needed to facilitate electrolysis connecting and blending into the existing gas	Methane reforming with CCS entry and incentives	How would the existing market need to evolve to manage higher volumes of gas due to hydrogen entering the network?	What are the a	rinciple design advantages and	
What changes to entry agreements are needed to connect electrolysis plants?	What developments to the existing market are needed to facilitate methane reforming (with CCS) connecting and blending into the	How would the existing market need to evolve to manage the lower CV	d market? What are the a	What are the advantages and challenges of different gas quality frameworks (e.g. one size fits all, different for pressure tiers etc.) What are the advantages and	
At initially low volumes, what could be done to allow hydrogen to enter the network in relation to GSMR?	existing gas network?	content of hydrogen?	challenges of frameworks (e		
	What changes to entry agreements are needed to connect methane reforming plants with CCS?	Price & competition 1	What are the a		
Electrolysis incentives	What type of regulatory support favours an equal-level playing field		How do we create a degree of price homogeneity across different gases in a single market structure?challenges of different energy balancing frameworks (e.g. city gate vs single system operator)?How do we value and correctly price the benefits of low-carbon gas?What principles and regulatory structure is wanted for a new separate hydrogen market?		
What can be done across gas and electricity to incentivise hydrogen production?	for the development of CCS?	How do we value and correctly price			
Who owns and operates electrolysis and methane reforming facilities?	Exit pr	rotection			
What type of regulatory support	How do we protect customers who want a specific commodity or gas quality in a blend network?			Price & competition 2	
favours an equal-level playing field for the development of hydrogen?			i	How would we set a price for hydrogen in a separate market initially?	
How does the existing billing and cost recovery mechanism need to evolve for hydrogen?	What development market are needed deblending techno	d to accommodate		How do we avoid competition distortion between energy vectors in separate markets?	
			-		

The GMaP aims to proactively explore these questions, with our focus in 2020 being on how broad market principles could evolve across the transition in different scenarios.

Exploration of market design across the transition for different production, consumption and transportation scenarios



Gas networks carry hydrogen and natural gas (blending and deblending)

Natural gas at transmission system, hydrogen into distribution networks

Dedicated hydrogen only networks (decentralised)

What different gas quality frameworks are more effective under different scenarios (e.g. one size fits all, different for pressure tiers?)

100%

Plenty of markets questions to discuss and debate!

