

**Gas  
Transmission**

# **Gas Markets Plan - Update**

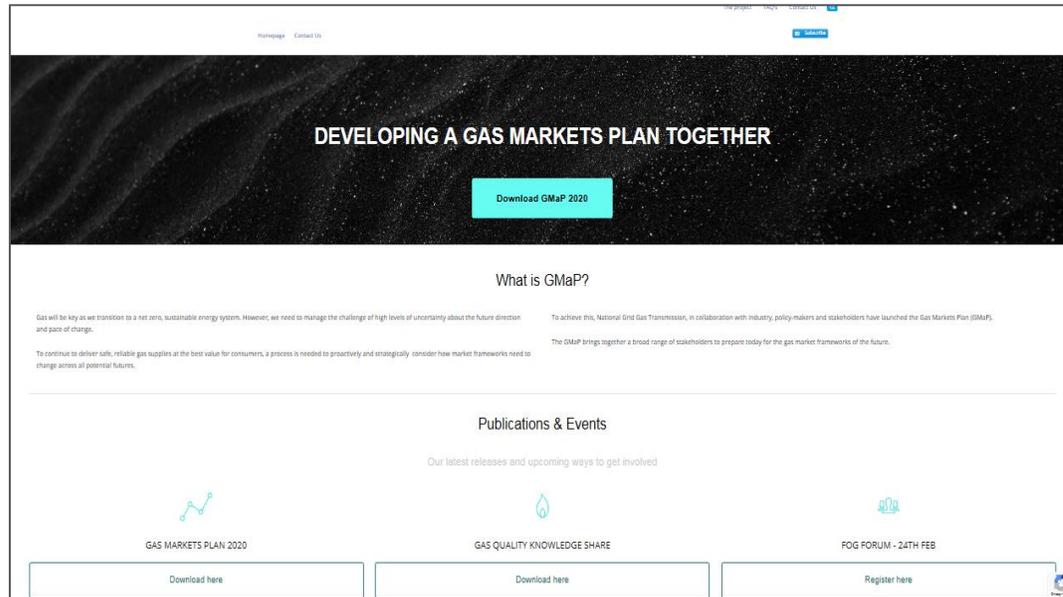
**Neil Rowley  
Gas Markets Development Manager**

**nationalgrid**



# 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



## Future of Gas Steering Group

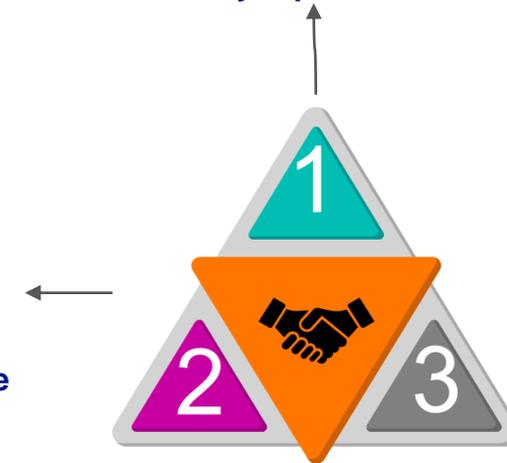
Provide Strategic guidance and leadership from the industry representatives

## Gas Market Plan Projects

Programme of work on priority market evolution projects important over the next 2-10 years

## Future of Gas Forum

Regular industry events to share and disseminate gas market developments



# 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

2<sup>nd</sup> meeting just held

Website for further information:

<https://futureofgas.uk/future-of-gas-steering-group/>

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

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Department for  
Business, Energy  
& Industrial Strategy

Local  
Authorities

Gas Users

Consumer

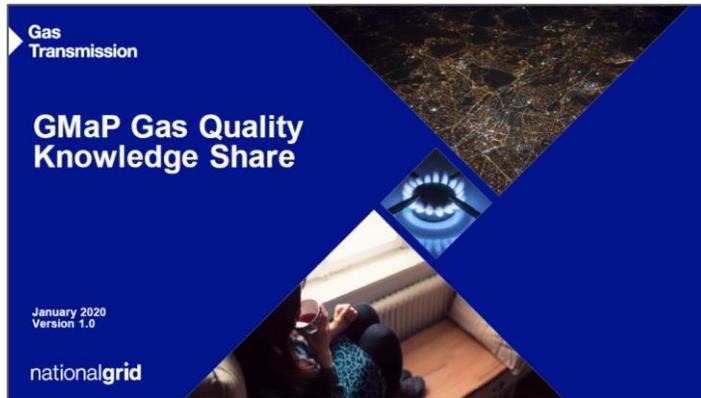
Environment

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

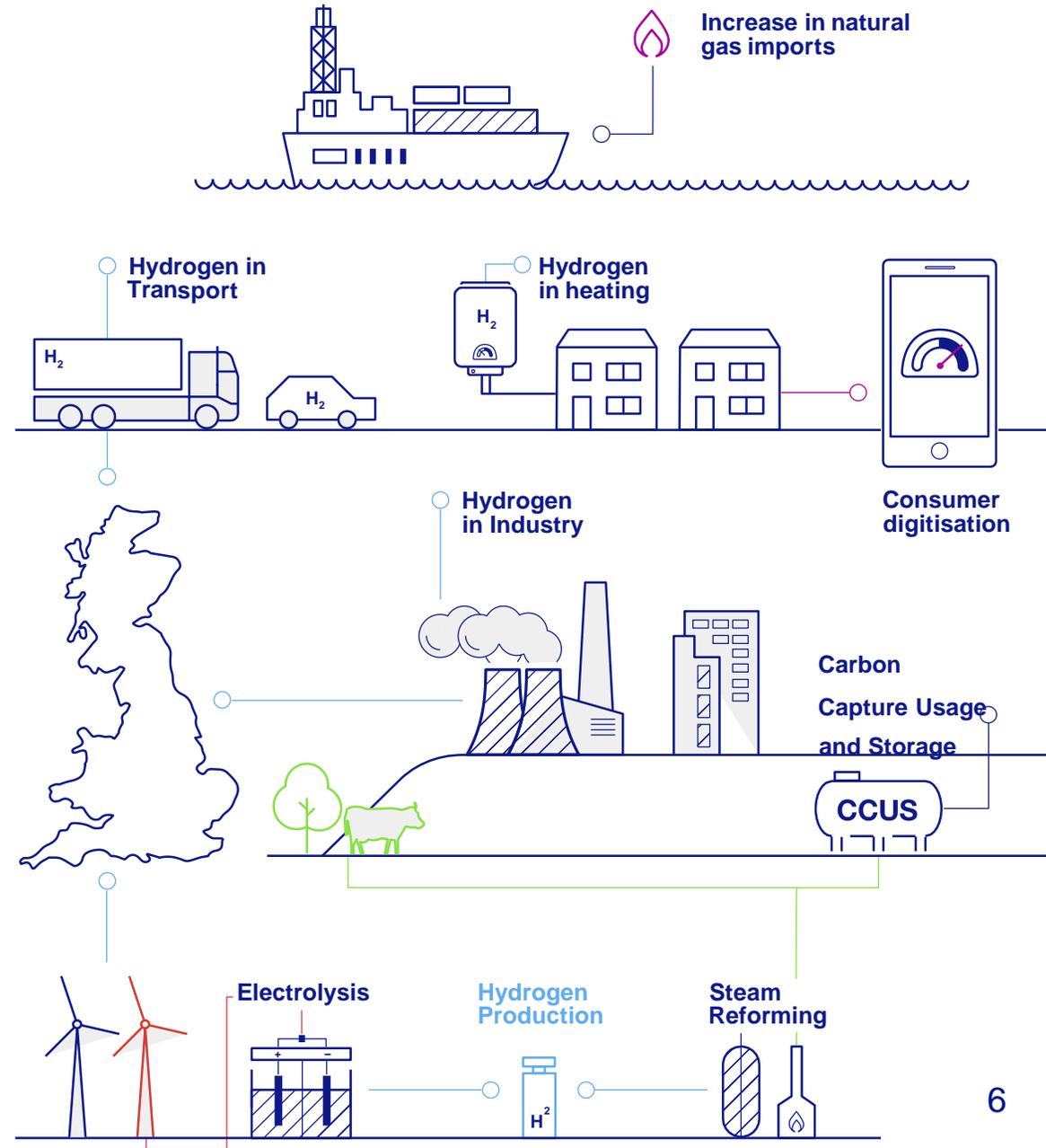
Gas quality

Balancing

Hydrogen

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



# The gas quality focus area, starting to deliver

**Bill Goode**  
**[Bill.Goode@nationalgrid.com](mailto:Bill.Goode@nationalgrid.com)**

February 2020

**nationalgrid**



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



*“By 2050, a new low-carbon industry is needed with **UK hydrogen production** capacity of comparable size to the UK's current fleet of gas-fired power stations.”*

CCC Net Zero – May 19



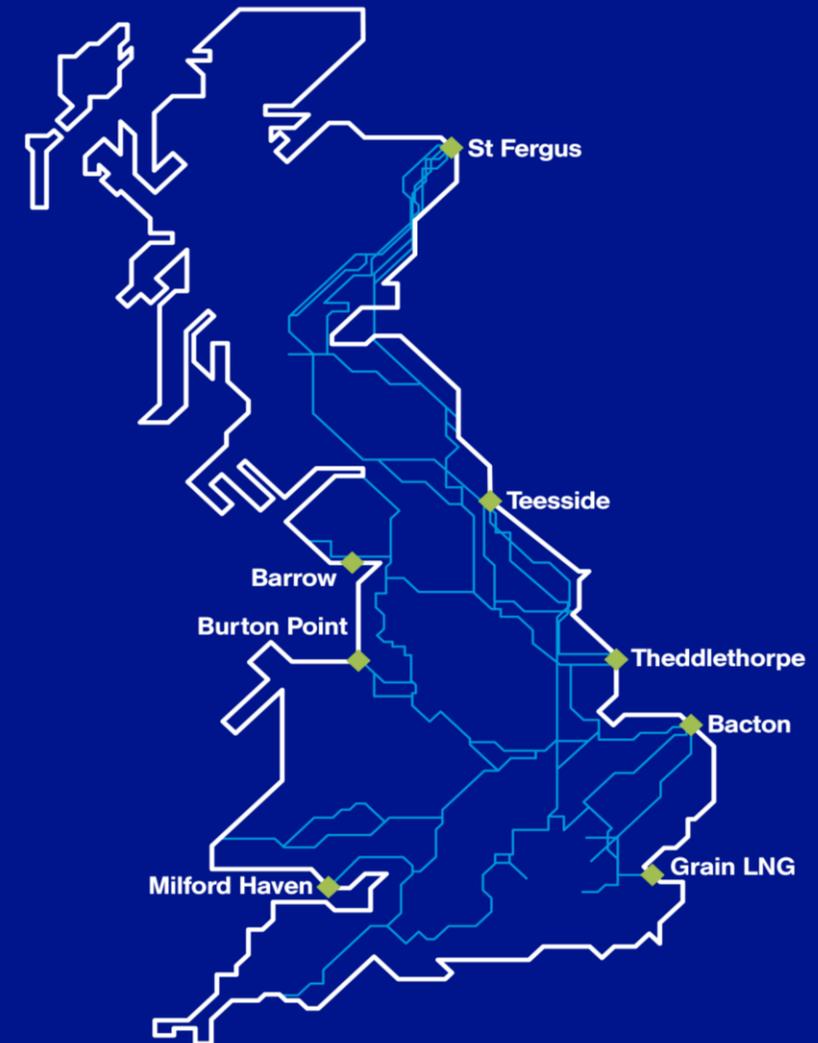
**Net Zero driver of change**

**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

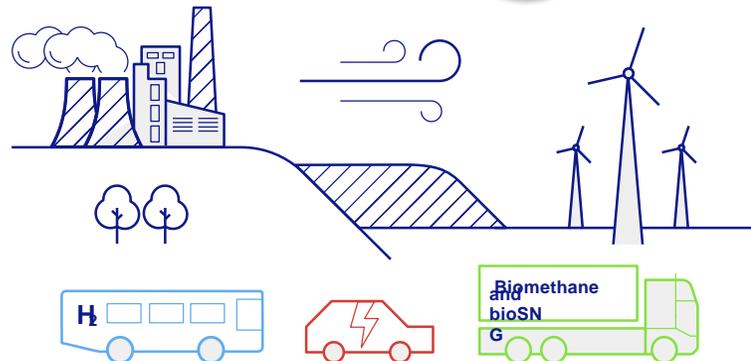


# The start of the gas quality focus area

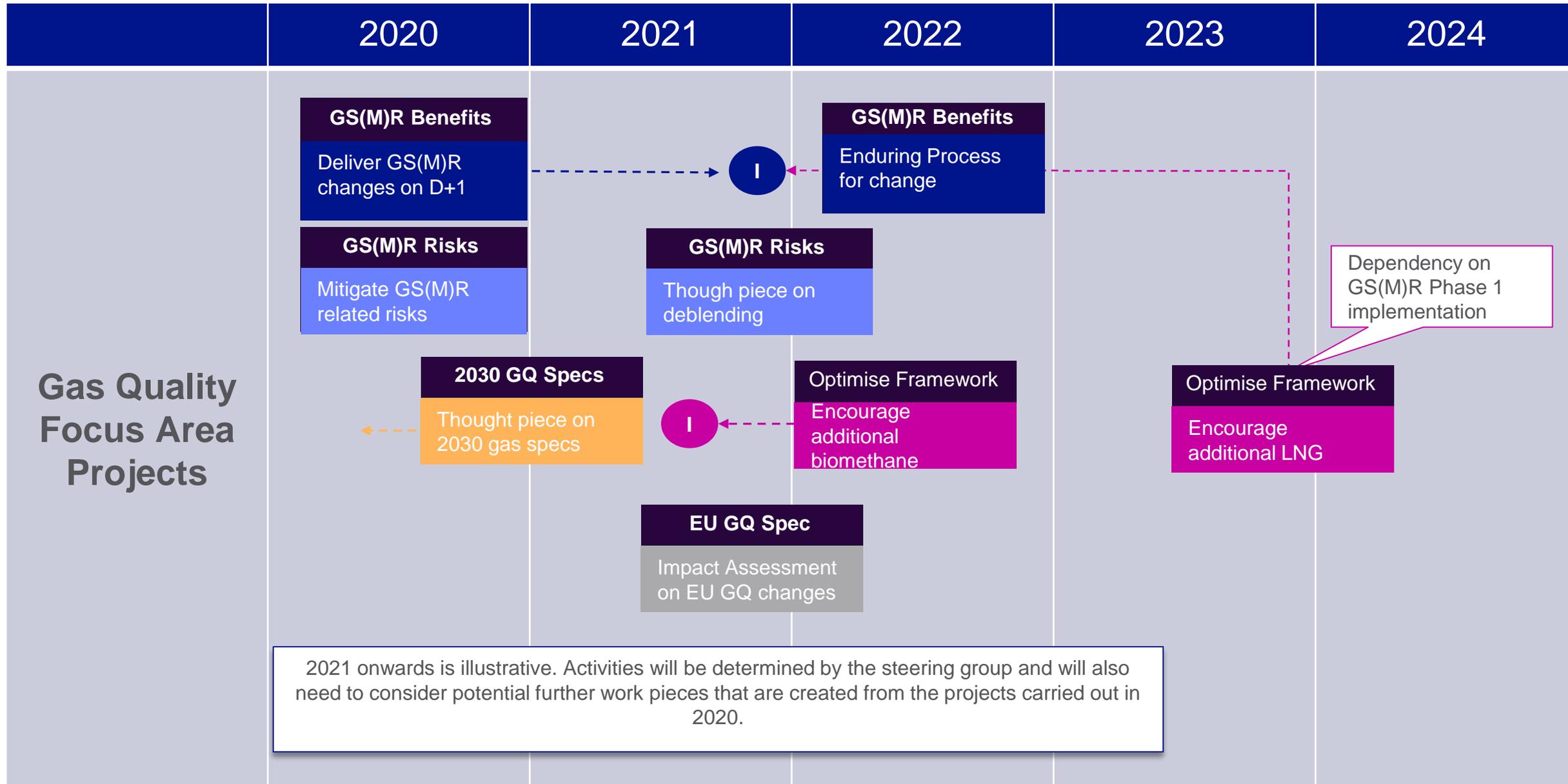
The Gas Market Plan and Gas Quality focus area aims to bring the industry together to work through market related questions.

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](mailto:Imran.Abdulla@nationalgrid.com)

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**nationalgrid**

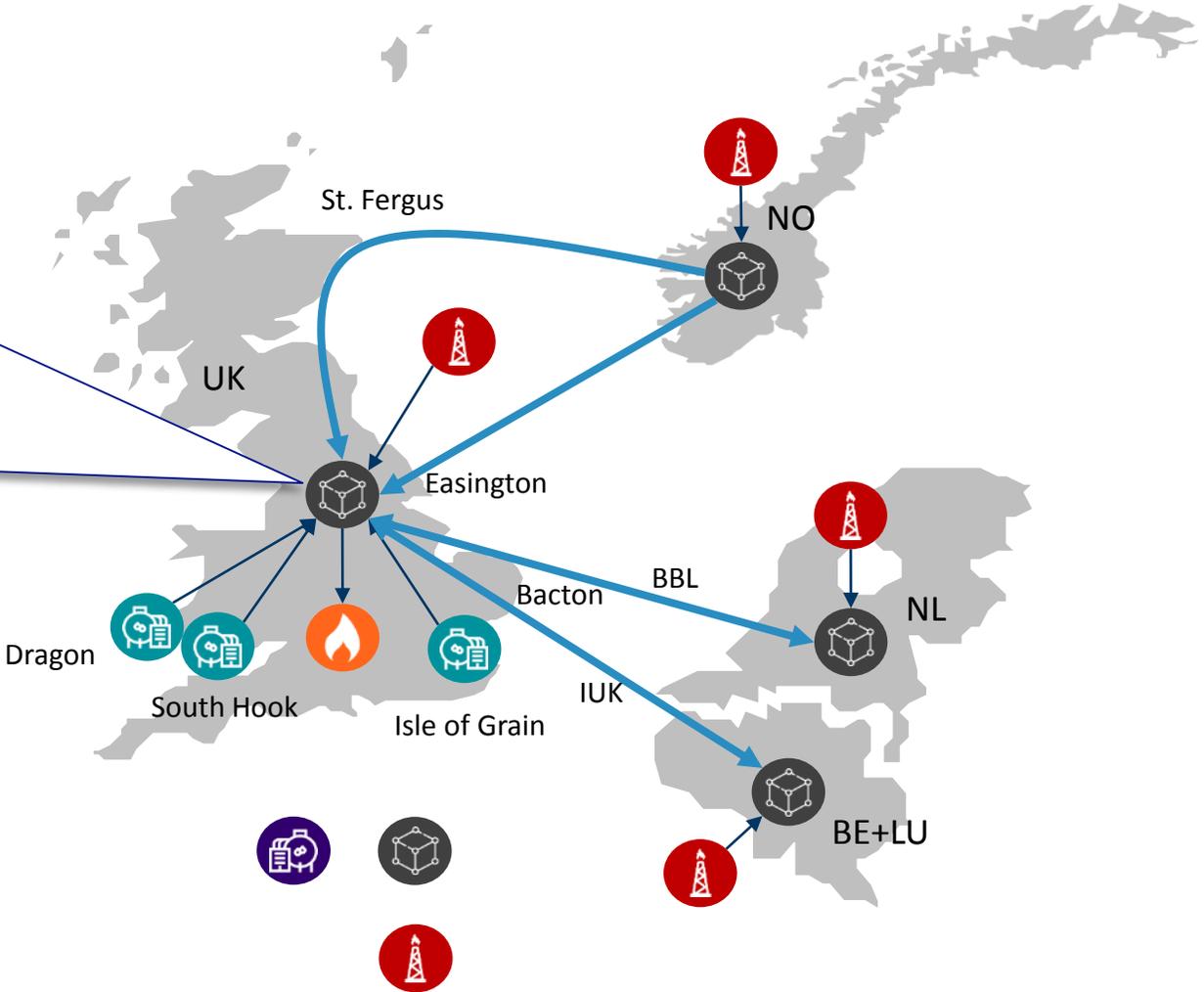


# Markets are a key enabler for facilitating competition and liquidity. How these develop through the hydrogen transition depends on many variables.

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



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

## Hydrogen in transport

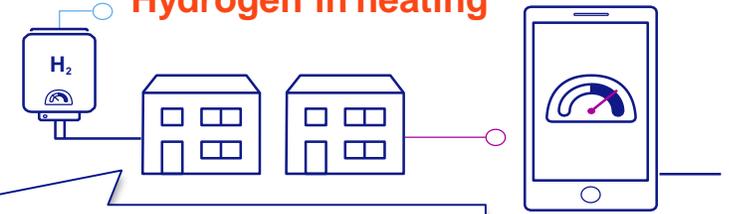


Does hydrogen have a role to play in rail, maritime & aviation?

Is hydrogen production done at fuelling stations by electrolysis?

Will hydrogen fuelling infrastructure change as other sectors decarbonise?

## Hydrogen in heating



Will there be hydrogen blending? Hydrogen dedicated pipes? Mix of both?

Consumer digitisation

Who will own and operate hydrogen production facilities?

What Incentives & subsidies may be needed?

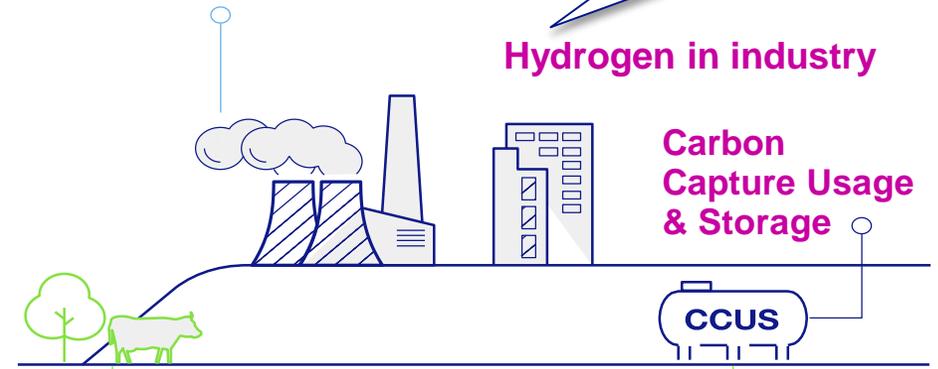
## Hydrogen production



National Grid

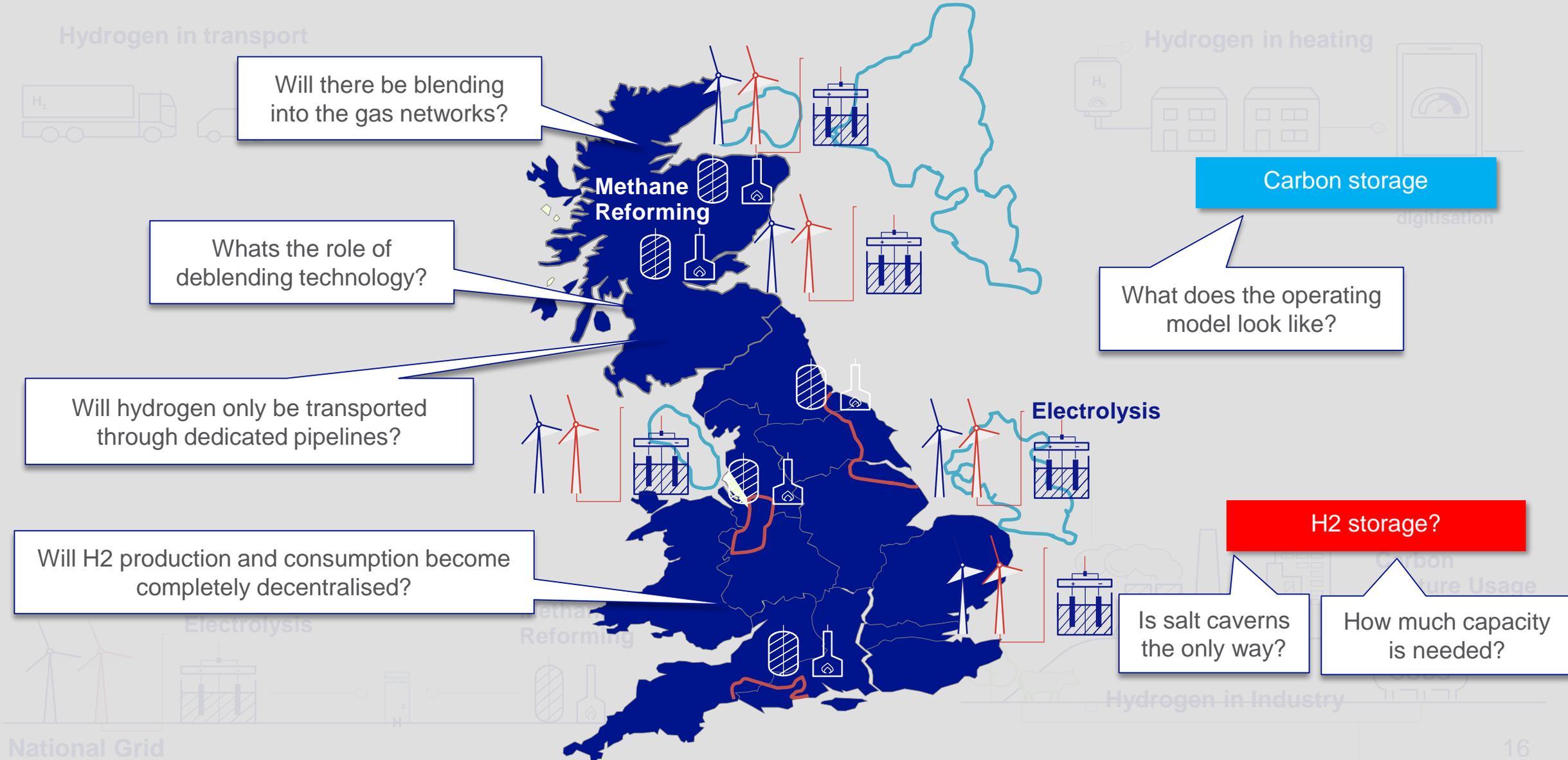
Which clusters will happen first?

## Hydrogen in industry



Carbon Capture Usage & Storage

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





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

Hydrogen volume at end use : 2% 5% 10% 20% 100%

### Scenario variables



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

Natural gas at transmission system, hydrogen into distribution networks

Dedicated hydrogen only networks (decentralised)

### Illustrative exploratory questions.....

What different energy balancing frameworks are more effective under different scenarios (e.g. city gate, single system operator, hydrogen only system operator?)

What does a separate hydrogen market design look like across the transition and how will it interact with the existing natural gas market?

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

# Plenty of markets questions to discuss and debate!

Join us at the hydrogen carousel to share your thoughts!

