

GERG

60th Anniversary Conference

Day 3 - Hydrogen

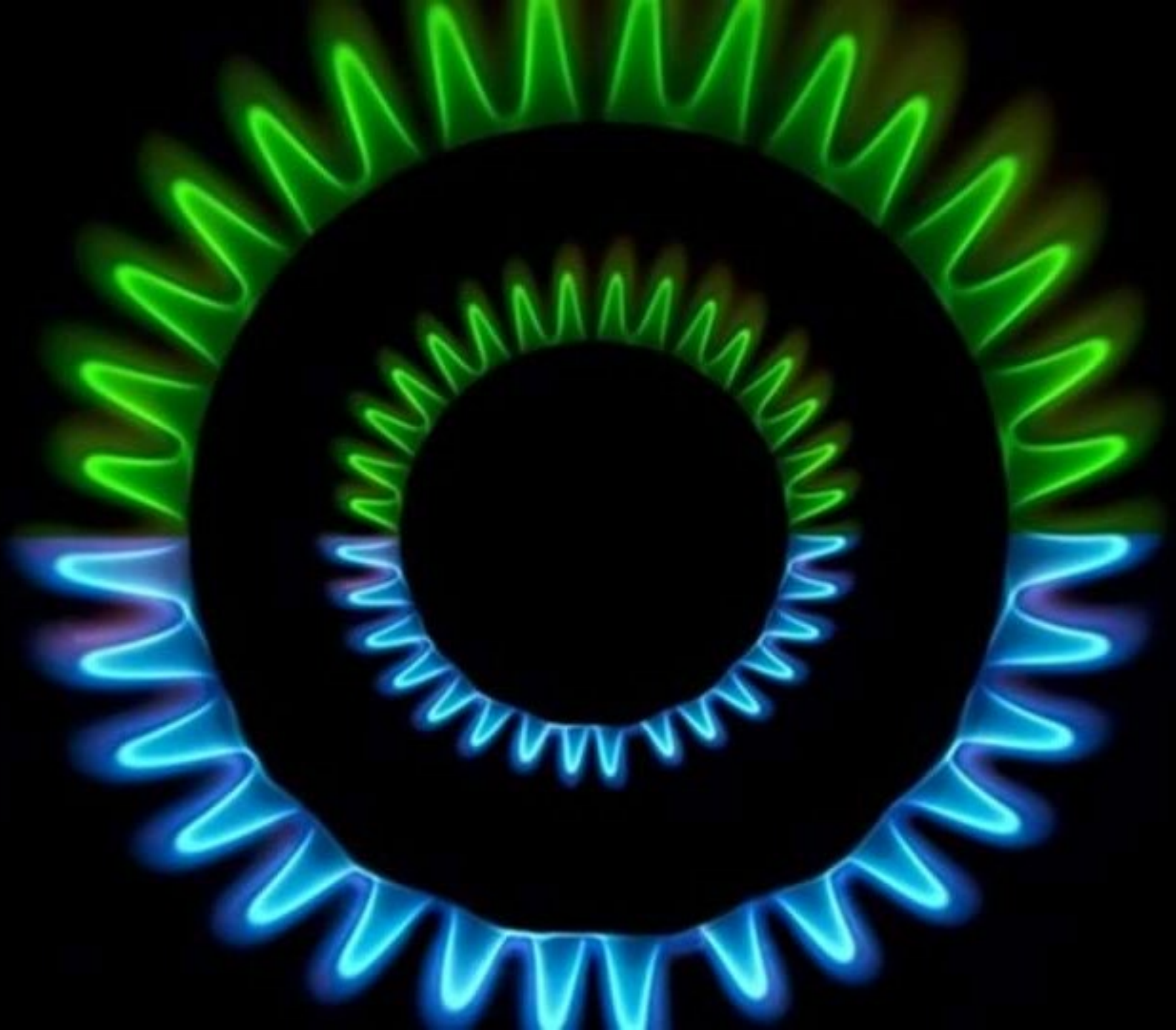
Antony Green

Vice President, GERG

Hydrogen Director, National Grid



**Which
Colour
Hydrogen?**





Industry



Heat



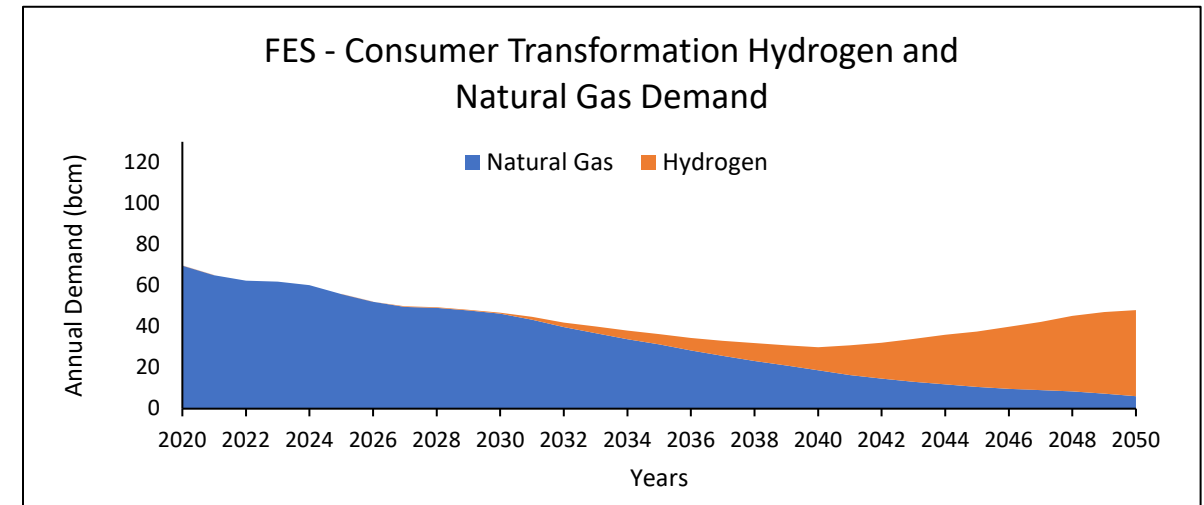
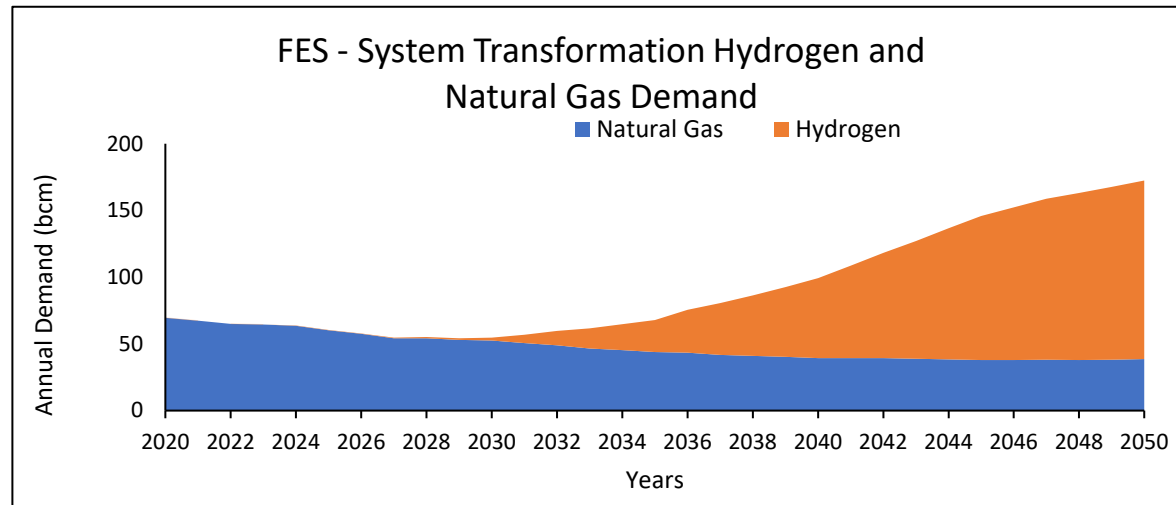
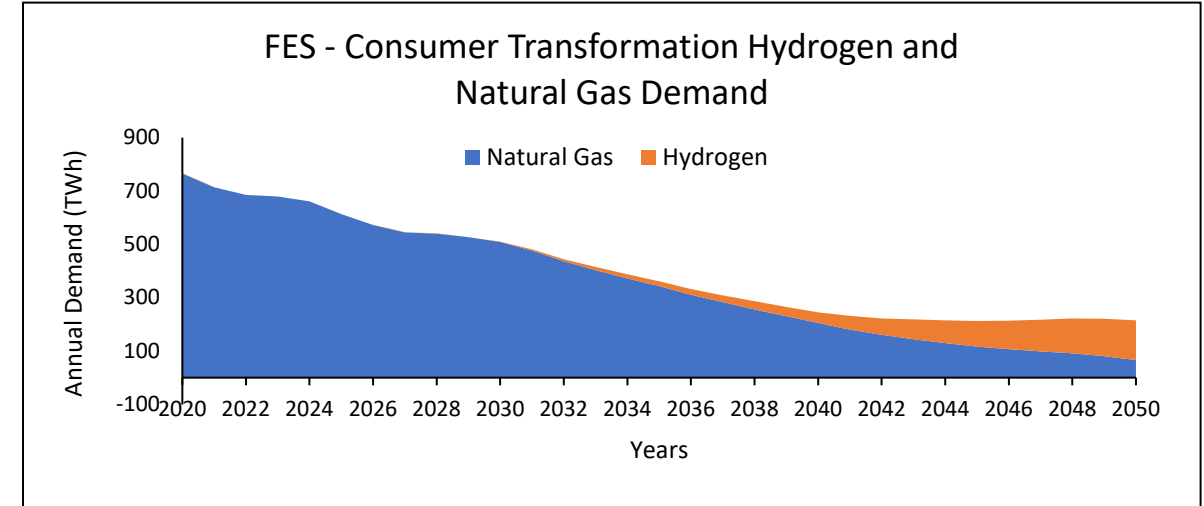
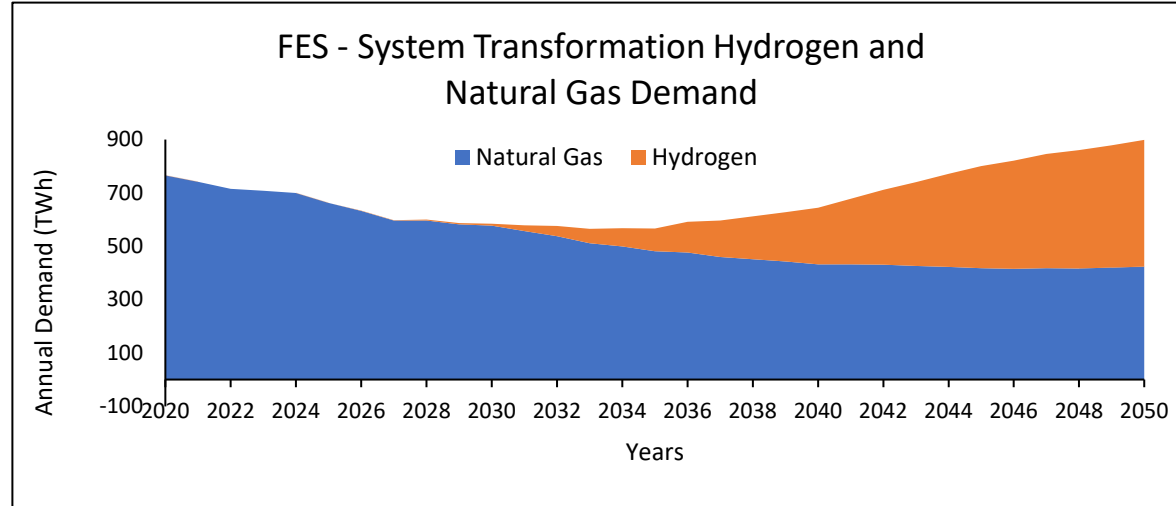
Power



Transport



How much hydrogen will we need in the UK?



Hydrogen roadmap to 2050

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BUILDING
THE EVIDENCE
BASE

2020

- 01 Programme of work for hydrogen informed
- 02 Government Ten Point Plan and Energy White Paper

2021

- 03 Key Government strategies published
- 04 Policy influencing development
- 05 FutureGrid programme begins

2022

- 06 Hydrogen and CCUS business models finalised
- 07 Continued strategic stakeholder engagement

2024

- 12 Trials prove ability to deblend
- 13 Upskilling the workforce

2023

- 08 Increased hydrogen production
- 09 Hydrogen neighbourhood trials
- 10 20% blend testing complete
- 11 Online transmission trials begin

ENABLING THE
TRANSITION

2025

- 14 1GW of hydrogen production capacity
- 15 GS(M)R updated and hydrogen blends injected into NTS
- 16 First hydrogen village established
- 17 Hydrogen-ready boilers mandated

2026

- 18 Two low-carbon clusters are operational with CCUS
- 19 NTS Conversion Plan finalised

2027

- 20 Project Union hydrogen transmission backbone begins

2029

- 21 Third cluster operational

GROWING THE
HYDROGEN
NETWORK

2038

- 33 Distribution networks move towards national coverage
- 34 NTS moves towards national coverage

2035

- 32 NTS able to support imports and exports of hydrogen at interconnectors

2032

- 30 Green hydrogen becomes cost competitive with blue hydrogen
- 31 Fifth low-carbon cluster operational and joins backbone

2031

- 27 Hydrogen power generation
- 28 Fourth cluster joins the backbone
- 29 Distribution networks continue conversion to hydrogen

2030

- 22 40GW of offshore wind
- 23 5GW hydrogen production capacity
- 24 Scotland GHG emissions reduced by 75%
- 25 First hydrogen town
- 26 Four low-carbon clusters operational

REACHING
NET ZERO

2040

- 35 Scotland GHG emissions reduced by 90%

2045

- 36 Scotland achieves Net Zero
- 37 National Hydrogen Transmission Network

2050

- 38 UK achieves Net Zero



Net Zero

KEY

● Government milestones

◆ Industry milestones

Dates are estimated and subject to change.

Illustrations shown on map are not indicative of actual geographical location.

HyNTS

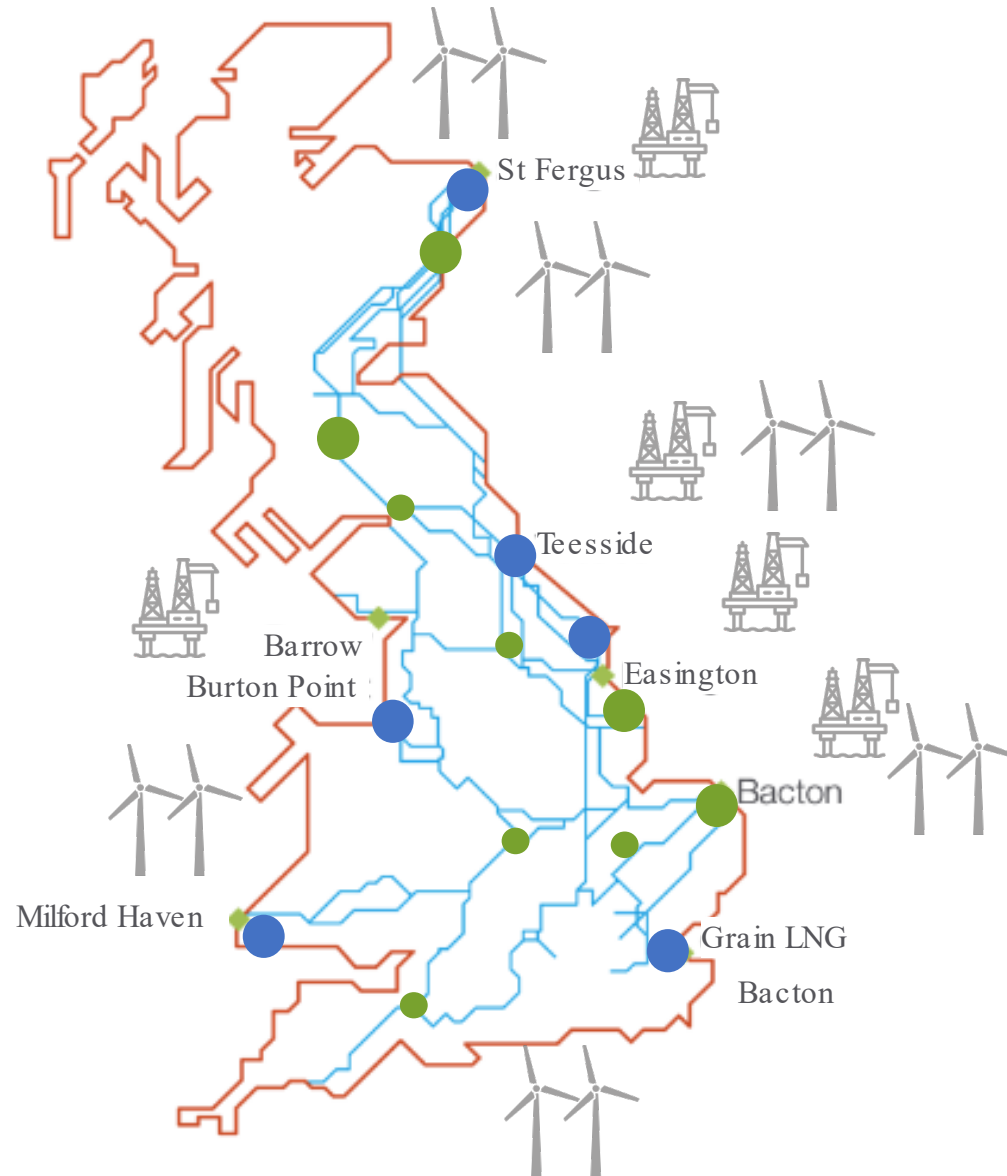
Conclusions

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Hydrogen has a role to play across all sectors in the journey to Net Zero

We need all forms of low carbon hydrogen to achieve the scale required

Significant repurposing is possible – evidence still developing to maximise the potential



We cannot wait for a perfect solution to appear innovation will continue to develop.

Must focus on no regrets solutions now as the transition will take time to deliver.

Collaboration is key both technically and to align all key stakeholders

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