GGG Advisory Group

9th June 2021

DELIVERING THE PATHWAY TO NET ZERO

Thank you for joining the Gas Goes Green Advisory Group today

1. If you are unable to play the audio through your device, you can dial in by calling +44 20 3855 5363 (UK London) (Conference ID: 964 783 001#).
2. You may ask questions and make comments, either by raising your hand or via the chat function throughout the meeting.
3. If you are unable to use chat functionality, try joining the Teams meeting via the Web app using incognito / private browsing (preferably with Chrome or Edge)
4. We will be using Polleverywhere → PollEv.com/gggag
5. **The meeting is recorded and will be shared on ENA's YouTube Channel**
6. If you would like to contact the programme team directly, please do so at GasGoesGreen@energynetworks.org

Agenda

1	**Welcome**	Dr Thom Koller, Programme Lead, ENA
2	**Practicalities of meeting**	Michiel Stork, Guidehouse
3	**Update since last meeting and opportunities to get involved**	Dr Thom Koller, Programme Lead, ENA
4	**2.1 Blending Delivery Timeline**	Bill Goode, Senior Development Lead, National Grid
5	**6.1 Green gas and Power Generation Data**	Bethan Winter, System operation Manager, WWU
6	**Wrap up**	Dr Thom Koller, Programme Lead, ENA

Advisory Group - Terms of Reference

The Advisory Group is essential to our project to:

- Ensure stakeholders are aware and taking Gas Goes Green into account
- Request input from stakeholders to improve the quality of our deliverables
- Increase awareness about programme risks & issues, ask for views on risks & issues and collaboratively resolve where appropriate

The Advisory Group will provide input to:

- Steering Group on programme scope, progress, risks & issues
- Workstreams with deliverable comments/feedback

We will seek to send information in advance of meetings to ensure that views can be sought in advance. Our objective is to encourage open feedback from you all across all of our work.

Update since last meeting and opportunities to get involved

GAS GOES GREEN

Workstream 1
Investing in net zero

- 1.1 Net Zero Strategy & Scenario
- 1.2 Zero Carbon Commitment (v2)
- 1.3 Local, regional and national pathways and planning studies

Workstream 2
Gas quality and safety

- 2.1 Blending delivery timeline

Workstream 3
Consumer options

- 3.1 Hydrogen: Cost to Customer
- 3.2 Licensing regime for industrial clusters
- 3.3 GHG reduction potential for off grid communities
- 3.4 Impact of reducing gas demand

Workstream 4
System enhancement

- 4.1 Supporting green gas producers
- 4.2 Opportunities for CHP conversion
- 4.3 Network fugitive emissions

Workstream 5
Hydrogen transformation

- 5.1 Delivering BEIS/industry hydrogen activity
- 5.2 Hydrogen connection agreement

Workstream 6
External affairs and stakeholder engagement

- 6.1 Green gas data
- 6.2 Defining a smart gas network

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Opportunities to get involved

When	What	Who
9th June	**2.1 Blending delivery timeline –** Update on the delivery of a blending timeline of regulatory and legislative changes. Stakeholder views will be sought on a range of key questions. **6.1 Green gas and power generation data** – Share data suggestions and ask for ideas for further data to collect.	Gas Goes Green Advisory Group
1st and 21st June	**3.2 A proposed licensing regime for industrial cluster hydrogen infrastructure –** Review existing licenses and potential changes and develop options.	BEIS, Ofgem, Energy UK
22nd June	**4.1 Supporting green gas producers** - Entry Customer Forum	Entry Customer Forum membership
July	**2.1 Blending delivery timeline –** Input into the timeline creation process, an indicative timeline will be shared and stakeholders views sought.	Policy makers, regulators, consumer groups, Academia, industry bodies
July	**3.1 Hydrogen cost to consumer** – Review assumptions for update to Hydrogen: Cost of Conversion report.	Academic Challenge Forum
July	**3.2 A proposed licensing regime for industrial cluster hydrogen infrastructure –** Develop options after reviewing potential changes to licenses.	BEIS, Ofgem, Energy UK

Email GasGoesGreen@energynetworks.org if there are specific deliverables you are interested in getting involved in.

Opportunities to get involved

When	What	Who
July	**3.3 Assess options and GHG reduction potential for off grid communities** – Review community engagement plan for off grid communities	Consumer groups
July	**4.1 Supporting green gas producers** – Entry Customer Forum	Entry Customer Forum membership
August	**3.2 A proposed licensing regime for industrial cluster hydrogen infrastructure –** Industry consultation on options for license development.	Industry
August	**4.1 Supporting green gas producers** – Entry Customer Forum	Entry Customer Forum membership
August	**3.3 Assess options and GHG reduction potential for off grid communities** – Review decarbonisation options for off grid communities.	DNOs, Local Authorities and Consumer Groups
September	**3.2 A proposed licensing regime for industrial cluster hydrogen infrastructure –** Industry consultation on options for license development.	Industry
September	**4.1 Supporting green gas producers** – Entry Customer Forum	Entry Customer Forum membership

Email GasGoesGreen@energynetworks.org if there are specific deliverables you are interested in getting involved in.

Opportunities to get involved

When	What	Who
October	**2.1 Blending delivery timeline –** Industry consultation on initial project findings.	Industry
October	**3.2 A proposed licensing regime for industrial cluster hydrogen infrastructure –** Industry consultation on options for license development.	Industry
October	**4.1 Supporting green gas producers –** Entry Customer Forum	Entry Customer Forum membership
November	**2.1 Blending delivery timeline –** Industry consultation on initial project findings.	Industry
November	**4.1 Supporting green gas producers –** Entry Customer Forum	Entry Customer Forum membership
December	**2.1 Blending delivery timeline –** Industry consultation on initial project findings.	Industry
December	**4.1 Supporting green gas producers –** Entry Customer Forum	Entry Customer Forum membership

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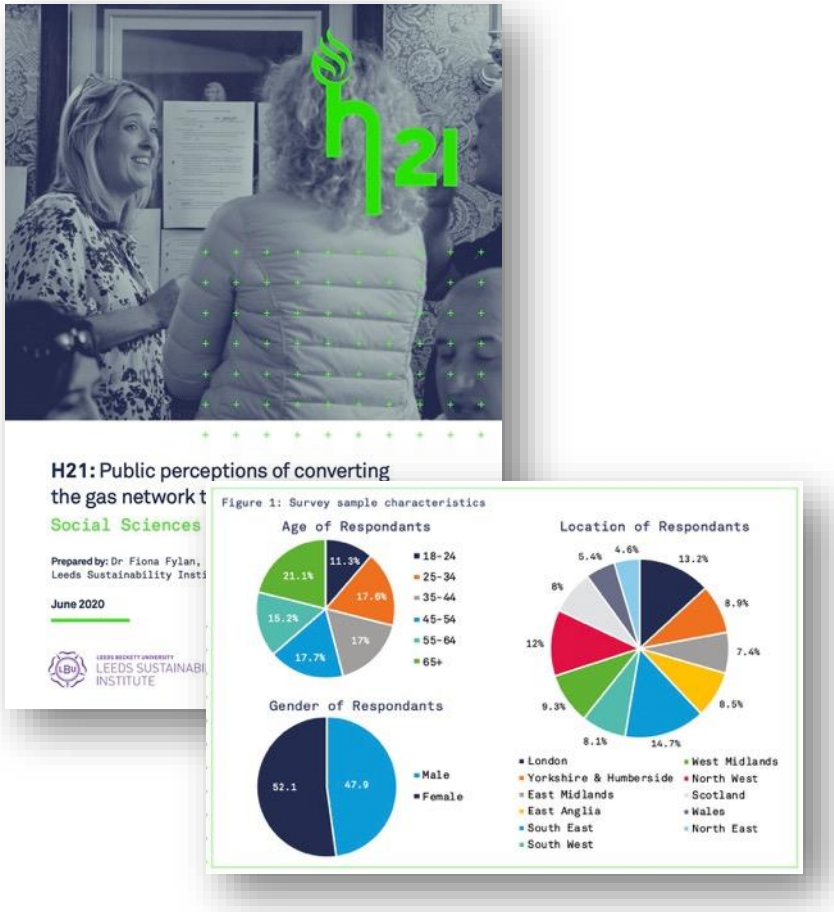
‘Our Expertise, Your Security’

- Hydrogen safety commitment signed by CEOs of all 5 GB gas networks, plus summary of industry approach to hydrogen safety testing.
- Commitment to ensuring that the hydrogen transition will make the gas grid if not as safe, then safer than it is today.
- Based around 4 principles:
  1. **Always maintain a safety-first approach**, adhering to the same high standards of safety as today.
  2. **Create new opportunities** to make Britain’s gas networks even safer than they are today.
  3. **Act transparently** by sharing outcomes of safety-related gas network innovation projects.
  4. **Support consumer choice** by testing the widest possible range of hydrogen-ready technologies.

DELIVERING THE PATHWAY TO NET ZERO

Public attitudes to hydrogen safety

- Leeds Beckett University surveyed (2020) over 1,000 members of the public across the U.K.
- Views about using hydrogen to reduce their carbon emissions from their heating, hot water and cooking.
- On safety, the research found that:
  1. Safety of using hydrogen for heating, hot water and cooking was not a major concern for participants.
  2. Assumption that if their supply is converted to hydrogen then it will have been robustly tested and found to be safe.
  3. Respondents were easily reassured about safety when more information was provided.
  4. Objections to vague answers from those responsible for testing hydrogen that left a sense of uncertainty.
  5. Recommended that information provided to them avoids vague statements.



DELIVERING THE PATHWAY TO NET ZERO

Deliverable 2.1 Blending Delivery Timeline

GGG 2.1 Overview

- **Market** based project.
- Timeline of change required to facilitate hydrogen **blending** and increased **biomethane** injection.
- Incorporate **regulatory**, **legislative**, **safety** and **market framework** changes.
- Highlight a **pathway** of future work.
- **Short** project aiming to have draft outputs available by end of **July**

Work to Date: Physical Roll-Out Models

- Different roll-out models might require different levels of market change at different times
- Agreed on two models to be used as a basis for the timeline
- **Physical Roll-Out Models:**
  - Clusters & Strategic Blending
  - Clusters & Free Market Blending

1. Built out a number of assumptions generic and linked to each roll-out model
2. High-level benefits and challenges for each model
3. Created roll-out model timeline
4. Enabler – more detailed work required in this space

Further Information on Roll-Out Models

Strategic Blending

- ❑ **Industrial clusters**
- ❑ **Strategic locations chosen to maximise quantity of hydrogen blended**

Benefits

- Greatest overall blending capacity and carbon savings.
- Avoids the risk of potential network sterilisation if associated regulatory change is enacted.

Challenges

- Centralised approach may require significant regime change.
- Significant infrastructure requirements could cause challenges in environmental consents and public acceptance.

Free Market Blending

- ❑ **Industrial clusters**
- ❑ **Wherever market participants choose to connect, wherever is most profitable for producers**

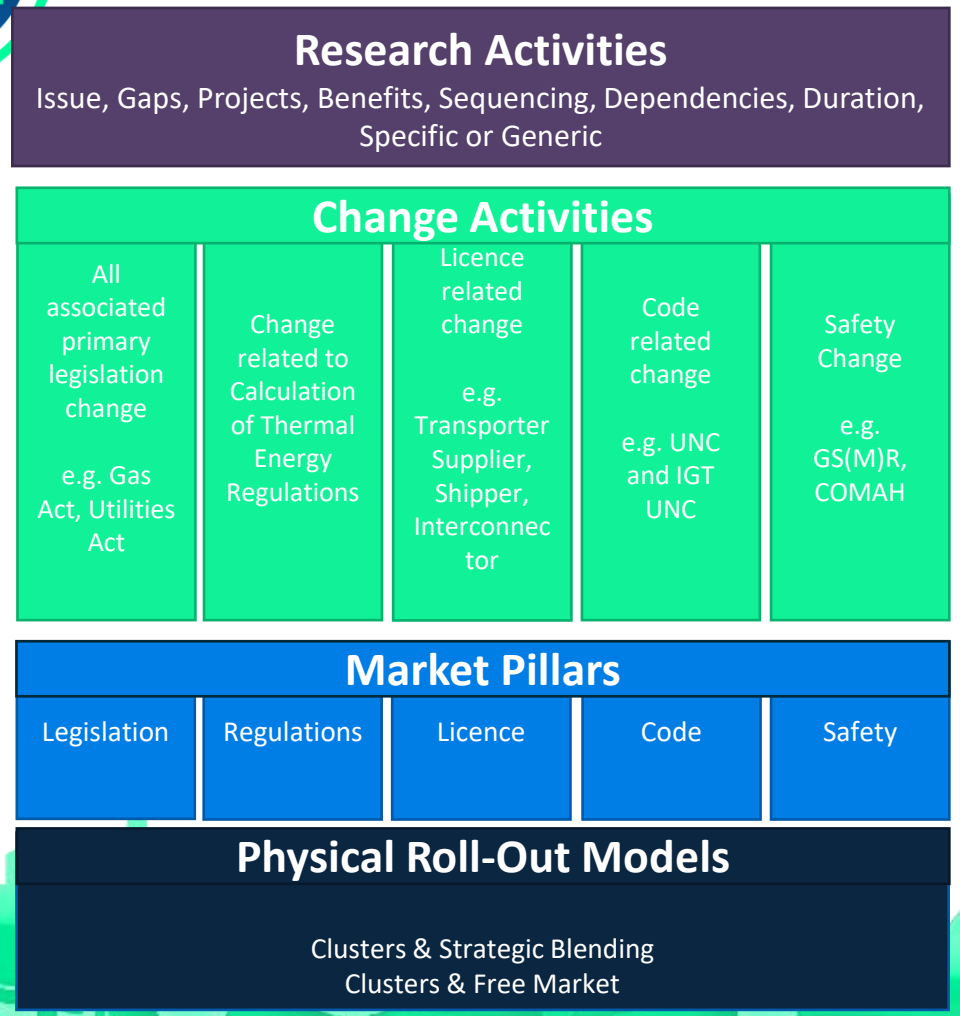
Benefits

- Smaller connection sites may require less financing and can have a streamlined planning approach to deliver connections faster than larger sites.
- In theory, market participants make the most economically efficient investment decisions.

Challenges

- Lower overall blending capacity; network sterilisation risk with embedded connections preventing upstream capacity connections due to 20% volume limit.
- Need clear alignment with long term hydrogen strategy to reduce risk of stranded assets.

Project Approach



- Roll-out models are the foundation
- A number of market pillars, legislation, regulation, licence, code and safety
- Related to each of these pillars will be a range of change activities which is an umbrella term to group change
- Each change activity will be plotted onto the timeline
- Detail sits behind the timeline will be included from the research activities

Example: Legislation

- Are there any barriers within related primary legislation that could impede the implementation of hydrogen blending, either generally or roll out model specific?

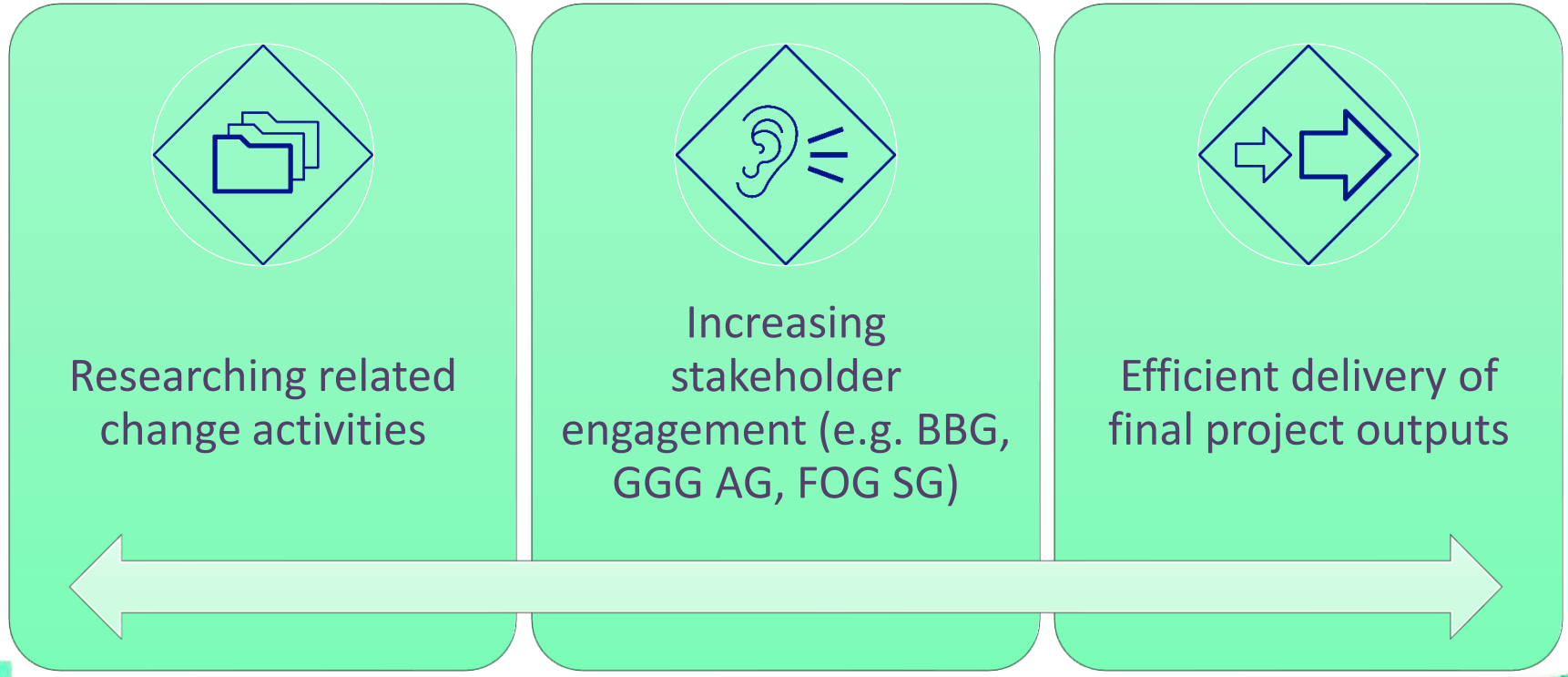
Research Area	Remit	Questions for the Project to Answer
Scope of "related primary legislation"	• The **Gas Act 1986** • The **Utilities Act 2000** • The **Competition Act 1998** • The **Energy Act 2008**	Do any these acts of parliament need amending to enable blending?
Existing or Proposed Projects	As per the EWP BEIS will *"review the overarching market framework set out in the Gas Act to ensure the appropriate powers and responsibilities are in place to facilitate a decarbonised gas future"*	What is the scope of the review? Is it just a review of the Gas Act? When it is planned to take place? What would be the next steps?
Timings / Dates	Gas Act Review Q3 21	Does this work need to be completed before work can commence on Licence or Code change? Could this lead to legislation change in 2022 or beyond?
Roll-Out Model Specifics	Strategic Blending different to existing gas market mechanisms	Would this roll-out model be compliant the Competition Act for example? What additional work is required to provide clarity on the roll-out models from Network Operators?

Initial Timeline Thinking

- 2023 could be a crucial milestone year for blending with:
  - Expected completion of HyDeploy and the potential proving of the safety case for blending
  - Could see further policy clarity on blending with BEIS through their CBA work

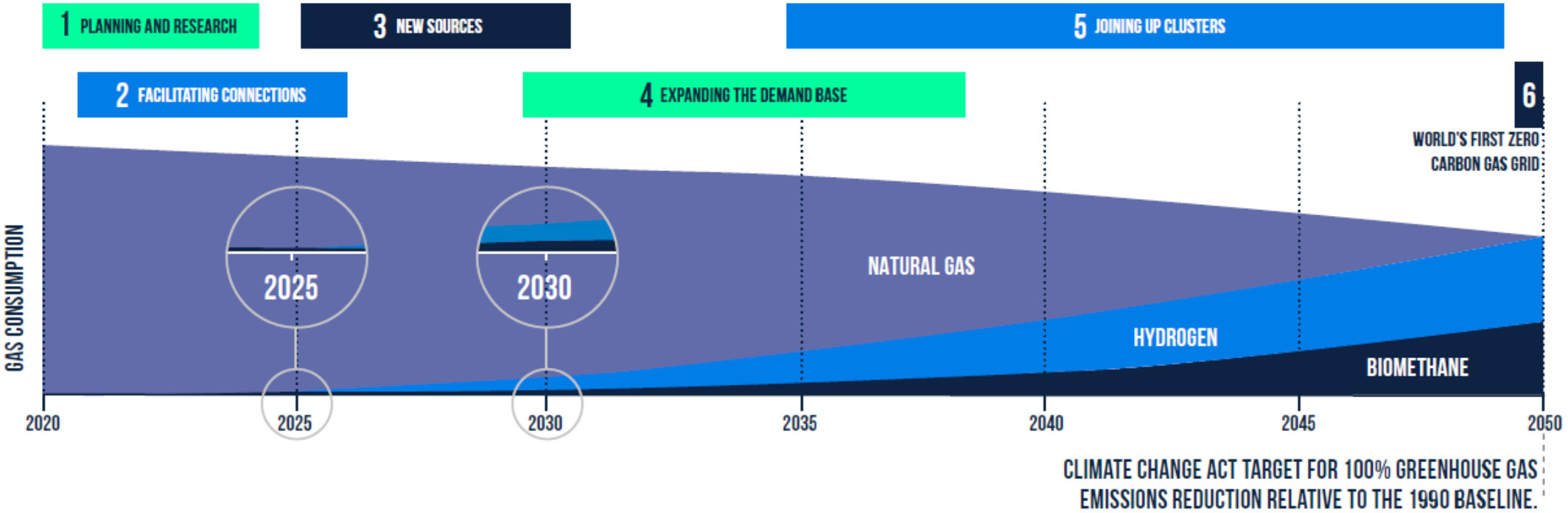
- Could lead to alternative pathways for market change
  - Low risk but elongated timelines so slower reward
  - Higher risk, work started before key decisions made but quicker decarbonisation reward.

Current Status



Deliverable 6.1 Green gas and Power Generation Data

Pathway to net zero



Source: ENA Pathways to Net Zero, 2019

6.1 Green gas and power generation data

- Green gas data and power generation data is sporadic and inconsistent. A central data source is required for green gas entry into, and power generation from, gas networks to support communications and stakeholder engagement.
- Target audience: Industry
- The project will collate network data and present the findings with infographics, as desired. Some examples of data includes:
    - % metallic in network
    - connected/commissioned green gas
    - contracted/commissioned power generation
    - Generation profile from data loggers
    - CNG for transport
    - Blending enquiries
    - SMR enquiries
    - CHP networks using gas

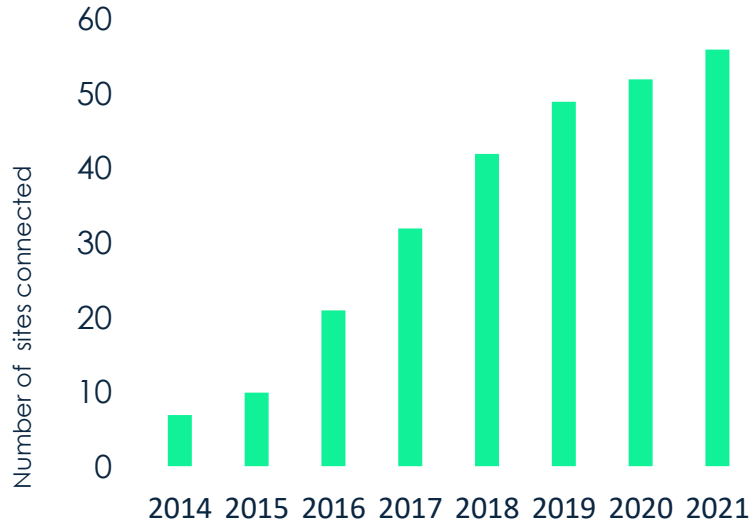
Progress to date

- Data collation progressing well in standard templates
- Discussions around standardisation of ‘equivalence’ metrics e.g. sufficient green gas to decarbonise heat for 5-20 thousand homes
- Discussions around anonymity requirements

- Starting to think about
  - New equivalence metrics
  - Design – dashboards vs infographics
  - Frequency of update

By site type e.g. Flexible generation, CNG fuelling,

	New sites	Total sites
2013	1	1
2015	2	3
2017	1	4
2019	1	5
2020	1	6



Progress to date

- Data collation progressing well in standard templates
- Discussions around standardisation of ‘equivalence’ metrics e.g. sufficient green gas to decarbonise heat for 5-20 thousand homes:
  A smaller bio site provides sufficient green gas to heat around 5k homes
  PLEASE PUT YOUR EXAMPLES IN THE CHAT!
- Discussions around anonymity requirements
- Starting to think about
  - New equivalence metrics
  - Design – dashboards vs infographics
  - Frequency of update

Thank You

- Materials from this meeting will be:
  - Circulated via email
  - Uploaded to the Resource Library on ENA's website
  - The recording will be uploaded to ENA's YouTube channel.
- Invites for the following two 2021 meetings have been sent out:
  - 1st Sept
  - 1st Dec
- Email GasGoesGreen@energynetworks.org if you have any questions or would like to get involved in specific deliverables

THANK YOU

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