Industry View on Hydrogen Blending Roles and Responsibilities

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Your Gas Network

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Purpose Of Fridays Session

Design a project that explores the commercial relationships, roles and responsibilities to bring H2 onto the gas network as blend.

Consider both the Gas and Hydrogen networks

Form an industry view, not networks

- What are the questions that need resolving?
- What is the right stakeholder mix / strategy?
- What can we take forward from UNC?

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How Did We Get Here?
GGG Action 2.1 (Phase 1)

Strategy piece, due for release Sep 2021

Determined a timeline of events and decisions required to achieve blending.

Also determined that efficiency of hydrogen production, blending and dispatch will be dependant on the interaction between blending locations and that coordination of these locations would be beneficial.

More work needed on the tactical implementation of this strategy, hence the creation of 2.1 b

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2.1b
Path To Prepare Stage Blending

Blending Model

- Fundamental Principles of How Blending Will Actually Work?
- Needs to consider both Gas and H_2 networks
  - Who owns what?
  - Where are the boundaries?
  - Who is responsible for what?
  - Who is the market for Hydrogen?
  - What does a NEA need to achieve?
  - How to manage interaction between injection points

Blueprint

- What do we need to build to enable the Blending Model

Regime Changes

- What are the min required changes to enable the Blending Model
- To include changes to enable control over locations

CBA's

- Comparison of different credible connection types
  - Hynet/Acorn/Cav vs Hydeploy + typical Bio
  - Explore min payback periods
- Influence BEIS CBA

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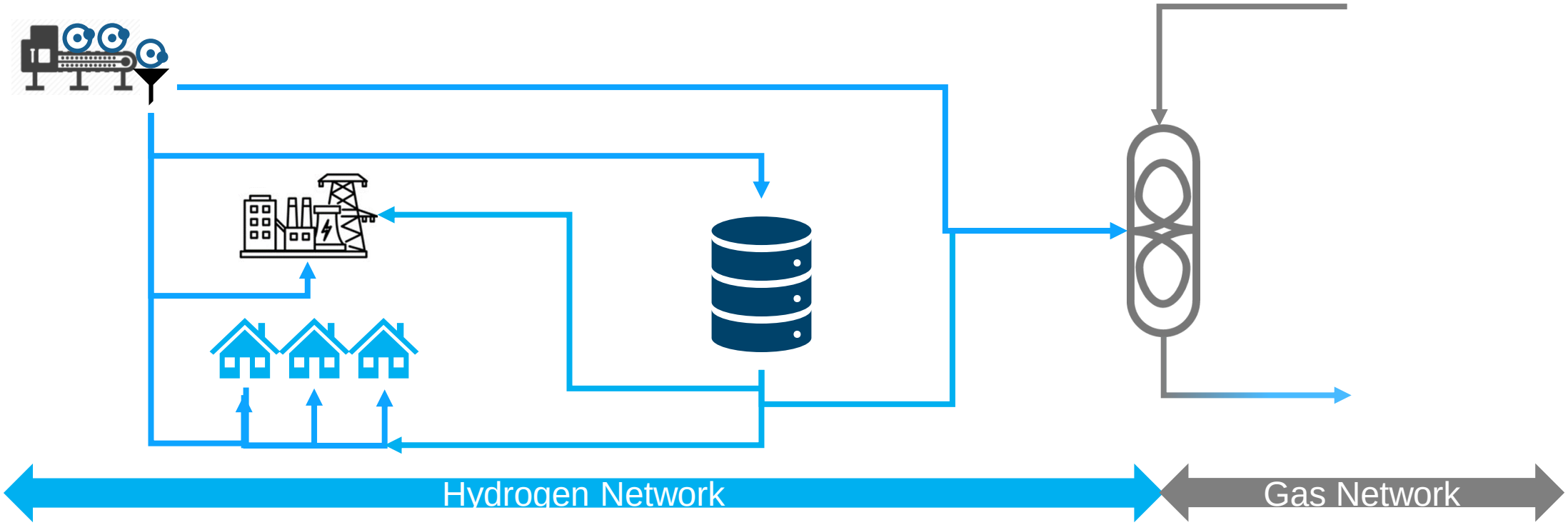
Blending Model

What Might A Typical Blending Location Look Like?

Associated with a H_2 Cluster



Potential Multi-Modal Operation between Production, Storage and Demand Side

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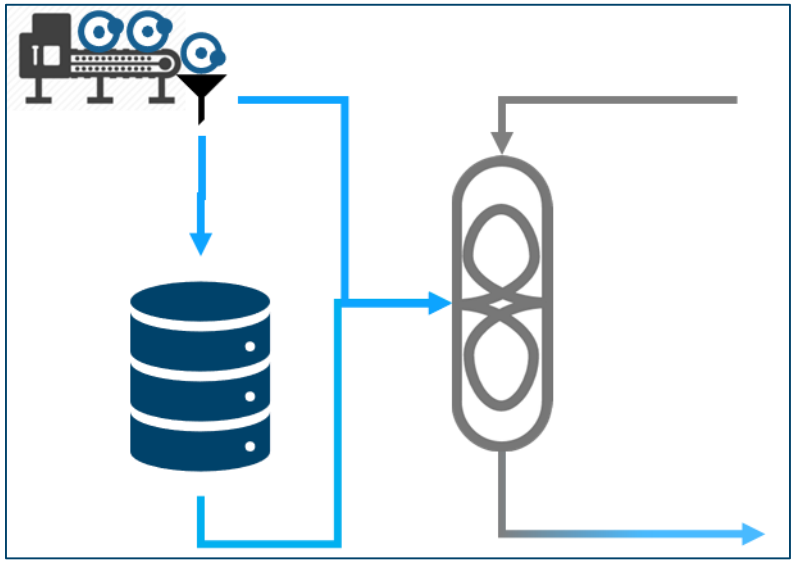
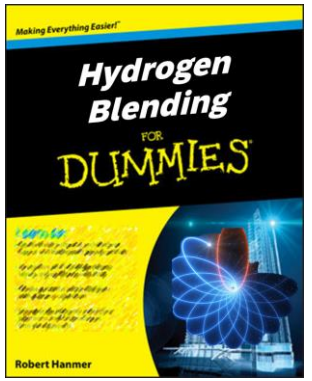
Hydrogen Blending: Ownership, Roles and Responsibilities

What Is Our Research Question?

"How is blending actually going to work?"





- Who Owns What?
- Who Is Responsible For What?
- Do We Need Any Further Roles?

"Who is bringing the molecules to the market? Why?"

"Is there a role for storage?"

BTWG, EEF, EnCF

centrica energy

REA

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Proposed Approach

Plan

Initial Networks Scope

Engage With Industry Groups

Final NIA Scope

Currently Here

Do

Project Kickoff

Industry Consultation

Output

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The Blending Model
Some Potential Questions?

Innovation project to develop out a credible high level view industry view of how blending might actually work in practice:

- Who will bring the hydrogen molecules to market?
  - Why?
- What elements are required to achieve hydrogen blending?
  - H2 supply, H2 storage, Natural Gas supply, Blending, Injection
    - Security of supply / supply & demand shocks
- Who owns the necessary blending elements?
- Where are the ownership boundaries?
- Who has what responsibilities / obligations?
- How to manage interaction between injection points (economic dispatch)
- How should the connection methodology work?

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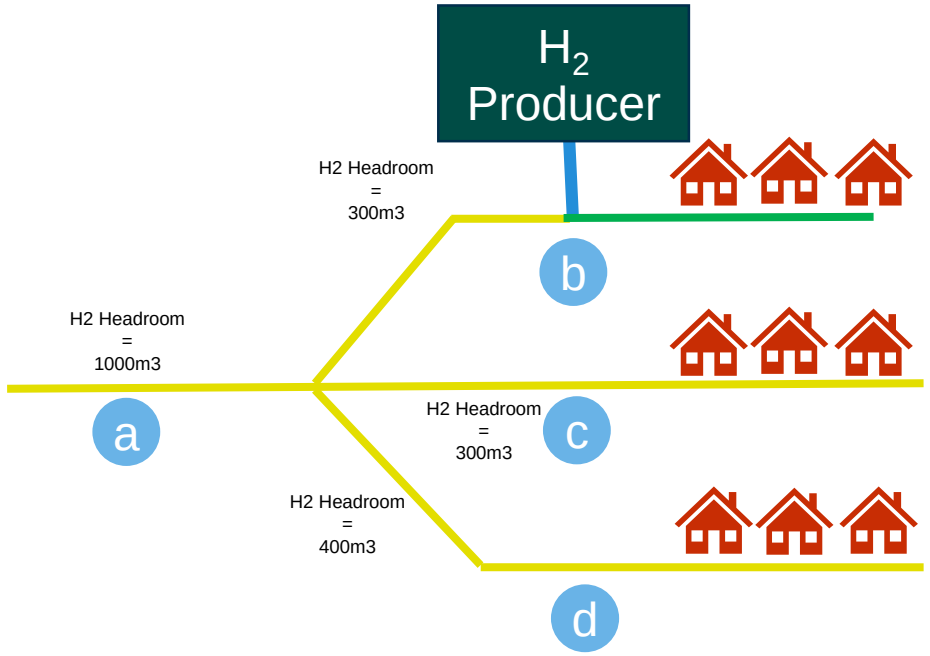
Why Is The Connections Methodology So Important?

Any hydrogen present in the gas arriving at an injection point will reduce the available blending headroom at that injection point.

In the example here the producer at Point B is either:

At risk of another producer connecting upstream at Point A and taking their ‘hydrogen headroom’, or

Constraining potential hydrogen injection at A



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What Does the UNC Say?

The UNC defines the rights and responsibilities for users of gas transportation systems, and provides for all system users to have equal access to transportation services. The major concepts underlying the Uniform Network Code are that:

- *Gas transportation services should meet market requirements.*
- *System security and safety should be assured.*
- *Pricing should reflect the real costs of the services concerned.*
- *Robust computer systems should be developed and maintained.*
- *Daily energy balancing should be operated.*
- *Gas Shippers (Shippers) should be incentivised to balance their own supply and demand.*

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The Project

What are the questions we need resolving?

Are there any interdependencies? Should phasing be considered?

Who should be consulted, and on what?

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Next Steps

Formulate a project scope, reflecting todays workshop

Reviewers?

Tender for independent consultancy to undertake the project

Aim for a final report ~Q2 2022

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