



WHEN TRUST MATTERS

The role of hydrogen

OEUK Decomm

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Why Hydrogen?

- DNV's Energy Transition Outlook for the UK considers use of Hydrogen in two main areas
 - Hard to electrify applications
 - Some applications would not be practical for operate on electricity
 - Use of green hydrogen to produce synthetic fuels or chemicals
 - Use of green hydrogen for process industries
 - Use of green hydrogen for fertiliser production
 - Energy security/storage
 - Utilising surplus electricity generation to convert and store as green hydrogen
 - Provide security of electrical supply similar to current methods using (clean) gas burning turbines
- Heating for homes still under consideration but not considered the key driver
 - Currently can blend up to 20% H₂ into natural gas network
 - Exponential increase in demand for H₂ and associated power generation if going into larger networks
 - Potential for off grid gas systems



Application

- Blue versus green hydrogen
 - Blue more economical to produce however still relies on hydrocarbons and CCS
 - Green technologies already mature however more costly
- Localised generation versus large scale generation
 - Smaller distributed systems closer to the off-taker reducing transportation costs
 - Maintenance efficiencies and resilience on larger sites
- Onshore versus offshore
 - Ease of maintenance onshore
 - Public acceptance of site locations and perceived impacts
- Cables versus pipelines
 - Cable installation costs significantly greater
 - Cable power limitations for expansion
 - Repurposing of existing pipeline systems

Repurposing of skills

- Hydrogen is a gas, and the O&G industry knows how to handle gasses
 - Materials, welding, pressure testing all common
 - Pressure vessels and pipework
 - Instrumentations and controls
 - Functional safety
 - Ignition prevention
 - Marine
 - Structural integrity
 - F&G / ESD
- Need to ensure that understanding is calibrated and current
 - Very little margin for error with H2
- Need to look at what aspects add value



Thank you

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