
Report to: Green Economy Panel

Date: 29 January 2019

Subject: **Hydrogen North of England**

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1. Purpose of this report

- 1.1. To outline the new Hydrogen North of England Programme.
- 1.2. Keith Owen from the Northern Gas Networks will attend the meeting and present a summary of the new Hydrogen North of England programme.

2. Information

Background

- 2.1. Northern Gas Networks (NGN) Hydrogen 21 (H21) Leeds Citygate Project aimed to convert the existing natural gas network in Leeds, one of the largest UK cities, to 100 percent hydrogen. If implemented, this would be a highly innovative programme and the first of its kind in the UK.
- 2.2. Over the last two years the Panel have received regular updates on the progress of the programme. Great progress has been made including NGN being awarded £10 million from Ofgem to provide critical evidence to support the viability of converting the UK gas distribution networks to 100 percent hydrogen.
- 2.3. Building on the success of the H21 Leeds City Gate programme a new H21 North of England programme was launched on 23 November 2018. This is a detailed solution for converting 3.7 million UK homes and businesses from natural gas to hydrogen, in order to reduce carbon emissions.
- 2.4. Created by gas distributors Northern Gas Networks and Cadent, in partnership with global energy company Equinor, this hydrogen blueprint sets out how the UK is ready to lead the way in reducing carbon dioxide emissions through the world's largest clean energy project.

- 2.5. The UK has committed to reducing its carbon emissions to at least 80 percent of 1990 levels by 2050. Currently, over 30 percent of emissions come from domestic heating and cooking.
- 2.6. H21 North of England finds that converting the UK gas grid to hydrogen has the ability to provide “*deep decarbonisation*” of heat, as well as transport and power generation, with minimal disruption to customers.
- 2.7. This has the combined potential to reduce carbon emissions by over 258 million tonnes a year by 2050, equating to over 80 percent of the UK’s remaining reduction target.
- 2.8. H21 North of England report proposes conversion will begin in 2028, with expansion across 3.7 million properties in Leeds, Bradford, Wakefield, York, Huddersfield, Hull, Liverpool, Manchester, Teesside and Newcastle over the following seven years.
- 2.9. A six-phase further UK rollout could see 12 million more homes across the rest of the country converted to hydrogen by 2050.
- 2.10. Keith Owen from Northern Gas Networks will present the new programme in detail to the Panel at the meeting.

Current support

- 2.11. The Combined Authority, Leeds City Council and Tees Valley Combined Authority created the H21 liaison group with NGN to support the development of the initial H21 Leeds Citygate programme. Support to date has included:
 - Letters of support for funding bids made by NGN.
 - Joint letters of support to central government.
 - Various events and senior stakeholder events.
 - An economic review demonstrating a range of opportunities for the group to explore.

3. Financial implications

- 3.1 No financial implications have been identified arising directly from this report.

4. Legal implications

- 4.1. No legal and compliance implications have been identified.

5. Staffing implications

- 5.1. No staffing implications have been identified.

6. External consultees

- 6.1. None.

7. Recommendations

- 7.1. That the Panel note the new programme and identify any support they would like to offer this new North of England programme.

8. Background documents

- 8.1. None.

9. Appendices