

Hydrogen Compatible Infrastructure

Date: 8 December 2022

Report of: Head of Democratic Services

Report to: Scrutiny Board (Infrastructure, Investment & Inclusive Growth)

Will the decision be open for call in? Yes No

Does the report contain confidential or exempt information? Yes No

Brief summary

On 13 July 2022 the Scrutiny Board (Infrastructure, Investment & Inclusive Growth) received an outline of a proposed programme of work to explore how Leeds City Council can support businesses to respond to the opportunities and challenges associated with the transition to Net Zero and the need to become climate resilient. This was introduced as part of a suite of policy work that will inform the refresh of the Leeds Inclusive Growth Strategy 2018 – 2023.

During the discussion about the green economy policy work, members of the Scrutiny Board raised several queries about the potential of hydrogen to contribute to carbon reduction in the city. The Board requested that further information be provided at a future meeting about the local and regional development of hydrogen compatible infrastructure.

Representatives from Northern Gas Networks have therefore been invited to deliver a presentation to the Scrutiny Board to outline their work to develop hydrogen compatible infrastructure.

Recommendations

- a) Members are asked to note and comment upon the presentation, and to highlight any further associated requests for scrutiny.

What is this report about?

- 1 This report sets out the context for the scheduled presentation about the development of hydrogen compatible infrastructure in the city and wider region.
- 2 On [13 July 2022](#) the Scrutiny Board (Infrastructure, Investment & Inclusive Growth) received an update on work to explore how best Leeds City Council can support local businesses to respond to the opportunities and challenges associated with the transition to Net Zero and the need to become climate resilient.
- 3 The programme outlined in July was introduced as part of a suite of policy work that will inform the refresh of the Leeds Inclusive Growth Strategy 2018 – 2023. The development of the Inclusive Growth Strategy, and the opportunities the delivery of that strategy might present for citizens and businesses, are areas of long-standing interest for the Scrutiny Board.
- 4 During discussions in July, members acknowledged the need to better understand the emerging green economy given the potential impact on the Council's climate ambitions, the delivery of inclusive growth and the city's economic recovery post-pandemic.
- 5 Members therefore endorsed proposals to explore in detail the potential implications of the transition to Net Zero for different sectors within the local economy. This included an ambition to understand the potential impact of that transition on the demand for skills by city employers, with members keen to ensure that local people will be supported to develop the skills required to access emerging opportunities.
- 6 The Board considered the challenges for employment in 'at risk' high-emitting industries such as manufacturing and transport, with concern expressed about the potential for existing inequalities to increase in the city given the geographical concentration of many of these industries.
- 7 Members examined the need to develop the city's infrastructure to reduce carbon emissions and to increase resilience to climate change. Concern was expressed about the levels of transport emissions in Leeds and the need to decarbonise the energy used by businesses and homes.
- 8 Members sought further information about ways in which the city could maximise the use of new technologies to deliver both significant carbon reduction and economic opportunities. Several queries were raised about the potential use of hydrogen in this regard, as well as the cost, volatility and infrastructure required to enable the transportation of hydrogen.
- 9 In response to these queries partners have been invited to deliver a presentation to the Scrutiny Board about the development of hydrogen compatible infrastructure in the region. Leeds City Council officers will also be in attendance at the meeting.

Hydrogen in Leeds

- 10 In recent years exploratory work has taken place in the city to assess the potential of hydrogen gas as a tool to decarbonise parts of the local energy grid.
- 11 In 2016 the [H21 Leeds City Gate feasibility study](#) was launched in Westminster, which used Leeds to demonstrate that it would be both technically possible and economically viable to decarbonise parts of the UK gas grid through a conversion to hydrogen gas. This work was led by Northern Gas Networks as the gas distributor for the North of England. Northern Gas Networks subsequently opened an office in the city to take this work forward.

- 12 In 2019 the University of Leeds and Leeds City Council hosted the first National Hydrogen Summit which brought together key stakeholders from across the UK to look at opportunities for hydrogen in the energy system.
- 13 Leeds Beckett University has since published evidence that emerged through a national and regional research project, highlighting support for a conversion to hydrogen amongst residents in Yorkshire and the Humber. As well as support for the potential benefits for emissions and air pollution, the research also reported a recognition amongst residents in Yorkshire of the economic benefits the industry could create – including new skilled jobs, supply chain benefits and attracting other sustainable businesses to the area.
- 14 Work is still ongoing to understand the full potential of hydrogen within local and national energy networks, and to assess the associated infrastructure requirements. However, as well as looking at commercial and domestic use, it may be that further work is also required in future to explore the opportunities and challenges of establishing hydrogen refuelling solutions in the city. It is anticipated that such facilities would be required should the city wish to consider the future use of hydrogen to decarbonise transport networks.

What impact will this proposal have?

- 15 Partners have been invited to deliver a presentation to members in response to the Scrutiny Board's request for further information about the development of hydrogen compatible infrastructure in the city and wider region.
- 16 Members are asked to consider and comment upon the information that is provided by Northern Gas Networks during the presentation.

How does this proposal impact the three pillars of the Best City Ambition?

Health and Wellbeing

Inclusive Growth

Zero Carbon

- 17 The request for further information about the development of this infrastructure reflects the Scrutiny Board's long-standing interest in the delivery of inclusive growth and the ways in which the city might respond to the emerging challenges and opportunities of the transition to Net Zero.

What consultation and engagement has taken place?

Wards affected:

Have ward members been consulted?

Yes

No

- 18 The invitation to partners to deliver a presentation on this subject was extended in response to a request from the Scrutiny Board.

What are the resource implications?

- 19 This report is for information - there are no resource implications directly linked to this report.

What are the key risks and how are they being managed?

- 20 This report is for information - there are no risk management implications directly linked to this report.

What are the legal implications?

21 This report is for information - there are no legal implications directly linked to this report.

Appendices

- None

Background papers

- None