Agenda Item No 12
Cabinet
29 September 2022

Title: Hydrogen Strategy
Lead Officer: Katie McAuley / Dave Barber
Portfolio Holder: Councillor Alan Rhead
Wards of the District directly affected: All

Summary

This report seeks approval for a Hydrogen Strategy to 2040. The Strategy seeks to provide an important context for discussions and negotiations with a number of stakeholders to ensure all parties are focused on the opportunities and benefits present by hydrogen as a source of energy as work gets underway to deliver a hydrogen as a first stage in the strategy

Recommendation(s)

(1) That the Hydrogen Strategy set out in Appendix 1 be adopted as the framework for bringing forward hydrogen infrastructure within the District and surrounding areas, through to 2040.

1 Background/Information

1.1 At its meeting on 6th July the Cabinet agreed that a specialist commercial partnership adviser should be appointed to support the Council is identifying a development partner to take forward the proposed hydrogen hub. Since then, progress has been made to appoint an adviser and work is now getting underway to define the options for identifying a partner and to research the technical requirements and issues involved in developing a hydrogen hub. As agreed in July, a further report will be brought to Cabinet in due course once the preferred development partner is in place and the technical and financial issues have been addressed.

1.2 Following the 6thJuly report, officers and the Climate Change portfolio holder have received a significant number of inquiries about the Council's emerging proposals from a wide variety sources, including potential private sector hydrogen developers. This interest underlines the momentum that is currently behind hydrogen production and suggests that there are likely to be a number of potential co-investors in the emerging hydrogen hub project. Further, contact has been made with Councils, academic institutions and other organisations who are more advanced in their hydrogen journey. From these discussions, the important role a hydrogen strategy can play in providing a longer-term context for our immediate plans has become apparent. In particular, discussions with Aberdeen Council who have already established hydrogen production and refueling for their fleet vehicles, showed that their hydrogen strategy was key in establishing a long-term relationship with a private partner and in attracting investment and linking with other opportunities in both the public and private sector (including neighbouring Councils and public transport providers).

1.3 This report therefore proposes the adoption of a hydrogen strategy for Warwick District looking ahead to 2040. The strategy considers the Council's role in green hydrogen production; developing hydrogen demand; and hydrogen distribution. It proposes three broad phases:

1.3.1 Phase 1: Production and demand for public service vehicles (2024/25 to 2029/30),

1.3.2 Phase 2: Production for demand from commercial heavy good vehicles (2027/28 to 2029/30 - with potential for ongoing growth)

1.3.3 Phase 3: Distribution for demand from Domestic power and heat; energy storage (2029/30 to 2040)

1.4 Such a strategy can:

1.4.1 Provide a context for negotiations with prospective development partners

1.4.2 Help with grant applications by showing the medium to longer-term approach and underlining the benefits

1.4.3 encourage partners and other stakeholder to come on board, particularly those organisations (public and private) that might be users of hydrogen facilities within the District

1.4.4 ensure the Council and our partners stay focused on the purpose and benefits of introducing hydrogen production into the District.

2 Alternative Options available to Cabinet

2.1 One alternative would be to continue without a longer-term strategy. Whilst this could still enable the delivery of Phase 1, it risks missing opportunities and innovations that could emerge in relation to the wider strategy and could result in parties involved with the partnership diverging from the core benefits the Council is seeking to achieve. For these reasons this alternative is not recommended

2.2 In developing this strategy and recommending a longer-term commitment to hydrogen, officers have also considered the potential role alternative fuels can play and therefore whether the approach proposed for hydrogen production is appropriate. The following have been considered:

2.2.1 Electric vehicles (EVs): there is little doubt that EVs will play a key role in decarbonising transport. We are already seeing a rapid growth of EVs in our District and in addition to the EV charging infrastructure already in place, officers are working on a strategy to improve EV infrastructure on our land. However, whilst EVs will certainly play a key role for cars and light vehicles, the weight of the battery and the current charge times make them less suited to heavy vehicles and long distance freight. Whilst hyper-rapid charge systems have the potential to reduce charge times, battery weight and resulting impacts on range and carriageway degradation will remain an issue and this suggests that hydrogen will have a crucial and long-term role to play in low carbon transport for heavy vehicles.

2.2.2 Biofuels and Hydrogenated Vegetable Oil (HVO): Biofuels/HVO can significantly reduce carbon emissions (some estimates suggest by up to 90%) and (in the case of HVO) can be used as a replacement for diesel without modifying vehicles. For these reasons, this option should be given serious consideration as an interim solution. However, there are a number of concerns that would need to be addressed including rising costs which exceeds diesel costs; reliability of supply and environmental impacts associated with growing and/or

producing the fuel. In addition, whilst biofuels/HVO do have the potential to reduce carbon emissions in comparison with fossil fuels, they do not have the potential to be zero carbon and should therefore, at best, be seen as an interim solution.

2.2.3 Renewable energy for homes and other buildings: whilst renewable electricity is already playing a major role in decarbonising electricity supply to homes and buildings, it is less efficient and effective in heating and is therefore costly. Alternatives are therefore likely to be vital in decarbonising heat for buildings. At present there are two main contenders: a) heat pumps and b) hydrogen. Heat pumps are already being installed in many buildings, including in our own housing stock. However, as these are still reliant on electricity, they can be expensive to run unless they are accompanied by a significant energy efficiency retrofit. The fact they the are readily available and their efficiency may improve over time, they are likely to be an important component in the future. Hydrogen is currently only used in heating in a relatively small number of experimental scenarios. However, these experiments suggest it does have a role to play in the future if it can be produced at scale and distributed through out gas pipe network. National Grid are beginning to invest heavily in this area. A hydrogen hub in Warwick District is unlikely to be producing at a scale to be significant in any future system and the pipe network is not within the Council's remit. The Council is therefore likely to contribute to this at the margins and in particular, by considering how homes of the future might need to be designed.

3 Consultation and Members' comments

3.1 This is on the agenda for the Climate Emergency PAB meeting scheduled for 12th September. Feedback from that meeting will be reported verbally.

4 Implications of the proposal

4.1 Legal/Human Rights Implications

4.1.1 There are no legal or human rights implications of the proposal.

4.2 Financial

4.2.1 There are no financial implications directly associated with this report.

4.3 Council Plan

4.3.1 Clean, Green Safe: The Hydrogen Strategy will support the aim of becoming a Net Zero organisation and reducing the District's carbon emissions. Specifically it is a key part of the initiative set out in the Business Strategy to explore low carbon energy opportunities.

4.4 Environmental/Climate Change Implications

4.4.1 The hydrogen strategy, will support the achievement of the Council's Climate Change ambitions, specifically:

a) the ambitions to be a net zero organisation by 2025 and that services provided through contractors deliver net zero by 2030

b) The ambition to reduce the District Carbon emissions by 55% by 2030.

The strategy supports a number of the specific commitments set out in the Climate Change Action Programme, most notably commitment 7.2 which seeks to explore the development of hydrogen production and storage facility.

4.5 Analysis of the effects on Equality

4.5.1 At this stage of the Hydrogen Hub project, officers do not deem an Equality Impact Assessment necessary. However, it is acknowledged that an EIA will be required ahead of the development stage of the project.

4.6 Data Protection

4.6.1 There are no data protection issues within the proposal.

4.7 Health and Wellbeing

4.7.1 The hydrogen strategy could support improved air quality with the adoption of low-emission fuel, which would in turn help combat respiratory issues.

5 Risk Assessment

5.1 The risks associated with the development of the hydrogen hub were set out in the report considered by Cabinet on 6th July. A more detailed risk assessment will be carried as the Hub is taken forward to the next stages. There are no additional risks associated with this report.

6 Conclusion/Reasons for the Recommendation

6.1 This report seeks approval for a Hydrogen Strategy to 2040. The Strategy provides an important context for discussions and negotiations with a number of stakeholder to ensure all parties are focused on the opportunities and benefits present by hydrogen as a source of energy as work gets underway to deliver a hydrogen as a first stage in the strategy. The report recommends that the Hydrogen Strategy set out in Appendix 1 be adopted as the framework for bringing forward hydrogen infrastructure within the District and surrounding areas.

Report Information Sheet

Please complete and submit to Democratic Services with draft report

Committee/Date	21st September 2022	
Title of report	Hydrogen Strategy	
Consultations undertaken		
Consultee *required	**Date**	**Details of consultation /comments received**
Ward Member(s)	N/A	
Portfolio Holder WDC & SDC *		Cllr. Alan Rhead
Financial Services *		Andrew Rollins
Legal Services *		Kathryn Tebbey
Other Services		
Chief Executive(s)		Chris Elliott
Head of Service(s)		Dave Barber
Section 151 Officer		Andrew Rollins
Monitoring Officer		Andy Jones
CMT (WDC)	N/A	
Leadership Co-ordination Group (WDC)		
Other organisations	N/A	
Final decision by this Committee or rec to another Ctte/Council?	Yes	Recommendation to Cabinet
Contrary to Policy/Budget framework		No
Does this report contain exempt info/Confidential? If so, which paragraph(s)?		No
Does this report relate to a key decision (referred to in the Cabinet Forward Plan)?		Yes, Forward Plan item-1318 scheduled for 21st September 2022
Accessibility Checked?	Yes	File/Info/Inspect Document/Check Accessibility