

Subject: Greater Brighton Hydrogen Strategy

Date of meeting: 7 February 2023

Report of: Chair, Greater Brighton Programme Board

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Ward(s) affected: All

For general release

1. Purpose of the report and policy context

1.1 This report presents the Greater Brighton Hydrogen Strategy, funded by the Greater Brighton Economic Board (The Board), and asks for the Board's endorsement of the findings, analysis, and action plan, which will form the basis of future work to promote and support a hydrogen economy in the city region.

2. Recommendations

2.1 That the Board notes the findings of the Greater Brighton Hydrogen Strategy (Appendix 1) and agrees that this should form the basis of future work on hydrogen in the city region.

2.2 That Board agrees to receive a future report outlining proposals for Hydrogen Sussex to become a self-sustaining organisation.

3. Context and background information

3.1 *Background*

A report to the Board in July 2022 outlined the proposals for developing a hydrogen strategy, and it was agreed that the Board would contribute £25,000 towards the cost of preparing it. Additional funding was secured from Coast to Capital LEP's Regional Projects Business Case Development Fund. Brighton & Hove City Council (on behalf of Hydrogen Sussex and the Board) appointed Ricardo to undertake the work. Additional assistance was provided by Net Zero Associates who created a Hydrogen Activity Baseline for the region, and from the University of Sussex which contributed a review of hydrogen strategies from around the world.

3.2 The Hydrogen Strategy is now presented to the Board, attached at Appendix 1. It is built on extensive stakeholder engagement with businesses and public bodies across the region (over 40 organisations interviewed); a review of government policy and funding for hydrogen and associated innovation / net zero / economic growth themes; and an analysis of potential economic growth. Hydrogen Sussex secretariat and membership were involved throughout, and the Greater Brighton Programme Board consulted.

- 3.3 *Key points of the strategy – regional profile*
The region has standout strengths in advanced engineering and research. Historical lack of heavy industry means that practical skills and infrastructure are limited.
 Key infrastructure at Gatwick Airport, Shoreham and Newhaven Ports could act as potential demand clusters for hydrogen. But heavy industry is limited and dispersed, which limits the potential for large scale hydrogen production. Advanced engineering and research on hydrogen is well represented, both in engineering companies and academia.
- 3.4 *Key points – potential for hydrogen growth*
The region has already broken ground in the hydrogen industry.
 Home to several hydrogen technology companies, the region has a strong capacity for innovation, that if supported, could be developed to expand its engineering excellence and allow the region to stand out within the UK hydrogen landscape.
- 3.5 **The public sector can give confidence and facilitate the development of a hydrogen economy.** As an environmentally conscious area, local public authorities share the ambition to become key hydrogen players and are actively participating in activities that will aid this. In the near-term, this focus will be crucial to ensure the region does not miss its opportunity.
- 3.6 **Focus should be placed on building the region’s current strengths,** continuing to develop its engineering excellence, be proactive and ambitious in the innovation space, and ensuring that the current academic excellence evolves with the hydrogen economy.
- 3.7 *Key points – Action plan*
Prioritising actions that alleviate the three main barriers (demand visibility, local policy & regulation, and infrastructure) experienced by stakeholders, will ensure that resources are utilised in the most impactful way.
- 3.8 **Key goals include development of a hydrogen hub,** where hydrogen production and business uses are located close to each other, to reduce costs and transport requirements.
- 3.9 *Key points – options for Hydrogen Sussex*
Capacity to actively support new projects and investment is needed to drive forward this action plan. Hydrogen Sussex could develop business proposals to provide this support, in addition to its current activities in networking, strategy building, and informing. Hydrogen Sussex could develop capacity to provide technical advice; track funding; educate; monitor. These additional activities would require greater capacity in Hydrogen Sussex, which is currently run on an informal basis with ad-hoc funding.
- 3.10 A number of options for creating a self-sustaining Hydrogen Sussex organisation are presented in the hydrogen strategy. These options require further consideration, and will be presented to a future meeting of this Board.

4. Analysis and consideration of alternative options

- 4.1 The Board has consistently supported the development of a hydrogen strategy for the region, with the understanding that developing the emergent hydrogen economy needs a strategic overview. Not having that strategic approach would damage the region's ability to develop compelling funding and investment propositions.
- 4.2 A SWOT analysis highlighted areas that our region already does well and has potential to build on further, such as advanced engineering and research capability. The regional profile indicates that some types of development, such as large-scale industrial production of hydrogen, are unlikely to be a strength in our region compared to other regions of the UK. The economic analysis leads the hydrogen strategy to focus on themes where we believe there are regional strengths and the potential to contribute to the regional economy.

5. Community engagement and consultation

- 5.1 This strategy is informed by extensive engagement with over 40 stakeholders across Sussex, including universities, utilities, businesses, public sector organisations, local authorities and regional organisations.
- 5.2 The Greater Brighton Economic Board has been extensively involved in building the city region's approach to supporting the regional hydrogen economy. The Board received reports in 2021 and 2022, and part-funded the preparation of this strategy.
- 5.3 Hydrogen Sussex launched in February 2021 and holds regular quarterly meetings with good attendance, encouraging networking and knowledge exchange, including developing this strategy.
- 5.4 The community has not been consulted on the strategy at this stage. Consultation would take place on an ad hoc basis as hydrogen developments come forward.

6. Conclusion

- 6.1 This hydrogen strategy sets out a route map for how hydrogen can help to transition the Greater Brighton and wider Sussex energy system towards net zero. It will assist the members of the Board to decarbonise both their own operations and key industries in their area. It gives practical goals and actions to promote and support hydrogen development.
- 6.2 The Board's support for the strategy and the networking, support and educative actions of Hydrogen Sussex, will be crucial to investment decisions by businesses, academia and utilities, as well as local authorities.

7. Financial implications

- 7.1 The Greater Brighton Economic Board has provided funding of £25,000 towards the cost of providing the Greater Brighton Hydrogen Strategy report. Additional funding was secured from Coast to Capital LEP's Regional Projects Business Case Development Fund. There are no further contributions required at this point in time and any further requests for financial support will be brought back to this board.

Name of finance officer consulted: Rob Allen, Principal Accountant Date consulted 27/01/23:

8. Legal implications

- 8.1 There are no legal implications arising directly from this report. Other than this, I have no comments or amendments.

Name of lawyer consulted: Wendy McRae-Smith Date consulted: 26/02/23

9. Equalities implications

- 9.1 While hydrogen is still an emerging technology, the Hydrogen Strategy considers how the benefits of new infrastructure and demand for skills may benefit the whole community. It proposes a 'ladder of skills training' that brings together universities, colleges and industry to develop training at every level, from introductory courses to advanced engineering, also including retraining from other industries.
- 9.2 The strategy identifies that there may be concerns about new hydrogen developments, and proposes training for planners on safety issues, visual impact, and working with communities on their concerns.
- 9.3 Hydrogen has the potential to replace fossil fuels in some use classes – for example in some shipping, shore power, or buses. As it is emission-free at the point of use, it contributes to improved air quality and thus to public health in vulnerable communities.

10. Sustainability implications

- 10.1 Hydrogen technologies are low-carbon and emission-free at the point of use. Hydrogen has a significant role in the national Net Zero plan, in uses such as heavy vehicles, shipping, high-temperature industrial processes, and energy storage. They have the potential to contribute to all Greater Brighton local authorities' goals for reducing carbon emissions, acting on climate change and improving air quality. The strategy identifies the most likely and useful ways that hydrogen may be used in our region to address the climate emergency.
- 10.2 Hydrogen production – 'green' hydrogen using the low-carbon electrolysis process – requires significant quantities of electricity and water. This strategy and Hydrogen Sussex is actively working with the water, gas and

electricity utilities to consider options such as the use of non-potable water sources, and reinforcement of the electricity grid.

Supporting Documentation

1. Appendices

1. Greater Brighton Hydrogen Strategy

