

Subject:	Hydrogen Sussex Update		
Date of Meeting:	1 February 2022		
Report of:	Chair, Greater Brighton Officer Programme Board		
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LA(s) affected:	All		

FOR GENERAL RELEASE**1. PURPOSE OF REPORT AND POLICY CONTEXT:**

- 1.1. This report updates the Greater Brighton Economic Board (“the Board”) on the great strides on developing a city region hydrogen economy in the last year, through the work of Hydrogen Sussex. The report also seeks the Board’s sign up to a proposed Hydrogen Strategy.

2. RECOMMENDATIONS:

- 2.1. That the Board notes the work of Hydrogen Sussex over 2021-22, especially supporting funding bids, stimulating local authorities and commercial stakeholders to work together, and helping to develop skills training.
- 2.2. That the Board notes and supports the proposal to develop a hydrogen investment proposition and strategy for Greater Brighton and the wider Sussex region.
- 2.3. That the Board provides funding of £25,000 for Hydrogen Sussex to develop a hydrogen investment case for the region, from existing Board core funding.

3. CONTEXT/ BACKGROUND INFORMATION:

- 3.1. In July 2020 the Board approved the Greater Brighton Energy Plan. The Energy Plan articulated the ambition for the Greater Brighton City Region to transition to a clean hydrogen economy for transport, heating and power. Following the Energy Plan, in October 2020 the Board committed to 10 environmental pledges, the GB10. Decarbonisation of energy is a prominent theme within the 10 pledges, helping to achieve Board members’ Net Zero targets.
- 3.2. Hydrogen Sussex is the new body supporting and facilitating the hydrogen economy across Sussex. It held a successful launch in February 2021 with well over 200 attendees including government ministers and a diverse range of stakeholders from across the private and public sectors.
- 3.3. A report was presented to the January 2021 and April 2021 Board meetings, outlining the progress of Hydrogen Sussex to date.

- 3.4. A UK Hydrogen Strategy was published in October 2021, together with notice of a Net Zero Hydrogen Fund for 2022, as part of a raft of decarbonisation strategies culminating in the government's Net Zero Strategy in November 2021. Hydrogen will have a critical role in the UK's net zero energy future.
- 3.5. The UK Hydrogen Strategy highlights the potential of public sector funding to leverage private investment in innovation, to unlock commercialisation and create a market for hydrogen. The ambition to produce 5 GigaWatts of hydrogen by 2030 would mean the creation of a thriving new hydrogen industry, which could support over 9,000 high-quality jobs and £900 million of GVA. Government investment in hydrogen to de-risk early projects, could unlock over £4 billion of private sector co-investment by 2030.
- 3.6. Moving quickly to develop a strong UK hydrogen economy by 2030 presents opportunities for investment in projects and associated infrastructure and supply chain companies. With such a critical role to play in enabling the UK hydrogen economy, it is important that a joined up and strategic approach is taken to hydrogen R&I investment.
- 3.7. The UK Hydrogen Strategy highlights the need for these to be in place by 2025:
 - Sector development: sector & government develop supply chains & skills base
 - Consumer Awareness: regional stakeholders and community priorities understood
 - Private investment: strategic partnerships with key organisations in place, financial sector engaged, private investment / capital in place
 - R&D: programmes in place coordinating effort and supply chain development
 - Industry development & deployment: industry led tech development and testing across value chain, consumers engaged

4. HYDROGEN SUSSEX UPDATE 2021-22

Project development

- 4.1. Hydrogen Sussex said we would:
 - Help commercial suppliers understand potential hydrogen opportunities in Greater Brighton
 - Develop capacity to support projects in reaching investment readiness, through business support, linking innovation, research, and stakeholder engagement
 - Develop a regional evidence base, including economic data, that will help to support the business case and anticipated calls for funding bids
- 4.2. Hydrogen Sussex has:
 - Completed research with University of Brighton on potential hydrogen demand and corresponding locations for hydrogen facilities, focused on large vehicles in public sector fleets and transport providers, eg emergency vehicles, refuse trucks, buses and coaches.
 - Supported potential hydrogen projects to submit Expressions of Interest to Coast to Capital LEP

- Supported Michelmersh Bricks to bid for government funding to carry out sector-leading fuel switch feasibility project (potentially a world first)
- Advised Chichester College on development of hydrogen skills training modules to be delivered with Strategic Development Fund from DfE
- Sourced research capacity from University of Sussex to assist with strategy development and assessment of business models
- With the Greater South East Energy Hub – competition for low-carbon heavy vehicle supply chain solutions

Building the network

4.3. Hydrogen Sussex said we would:

- Engage stakeholders including MPs to enhance support and understanding of hydrogen ambitions
- Develop information resources for local authorities

4.4. Hydrogen Sussex has built a network with significant contacts in:

Industry	Education & research	Transport
Ricardo	University of Sussex	Network Rail
H2 Evolution	University of Brighton	Shoreham Port
Scottish Power	Chichester College	Newhaven Port
MichelMersh Bricks UK	Association of Colleges	Brighton City Airport
Ryze Hydrogen	Green Growth Platform	Gatwick Airport
Supercritical Solutions		Port of Cromarty Firth
Faun-Zoeller (RCV manufacturers)		Community Transport Sussex
Protium	Public Sector	Cranfield Aerospace Solutions
Meld Energy	East Sussex Fire & Rescue	Transport for the South East
I Gas	Sussex Community NHS Foundation Trust	Brighton & Hove Buses
EMEC	Thames Estuary Growth Board	Biffa Waste Management (fleet)
MSA Safety	Locate East Sussex	
Opportunity North East	Lord Lucas	
Royal Haskoning DHV	Gillian Keegan MP	
SGN (Gas distribution)	All-Party Parliamentary Group on Hydrogen	
UK Power Network	West Sussex CC	
Savill's	Kent CC and SELEP	
Steamology		
Qi Managed Services		
Southern Water		

4.5. Webinars and Presentations by Hydrogen Sussex

- Wealden District Council – Climate Change, Economic Development, Waste Management & HR Cabinet Advisory Group
- Greater Brighton Economic Board Climate Summit
- Brighton & Hove Economic Partnership
- Greater Brighton – One Public Estate
- Chichester Community Conference: COP26
- AllEnergy webinar Hydrogen: Hype or Reality
- Circular Brighton & Hove
- Association of Colleges conference
- Team East Sussex
- Transport for the South East Decarbonisation Forum (Feb 2022)

5. INVESTMENT CASE FOR GREATER BRIGHTON AND WIDER SUSSEX

- 5.1. The University of Brighton, Brighton & Hove City Council and Hydrogen Sussex, have done some very initial preparatory work for an investment case for a hydrogen economy in the Greater Brighton region.
- 5.2. The aim of the investment proposition would be to give a clear focus and direction, establish a place-based perspective, and ensure that research and innovation is embedded in all hydrogen projects. The investment proposition is complementary to and gives a supporting framework for individual projects to proceed, mapping to a variety of funding sources and focusing on research excellence and delivery at commercial pace.
- 5.3. Without an investment proposition / strategy, Greater Brighton will be at a significant disadvantage in bringing in significant investment for hydrogen, in comparison to neighbouring regions. This is not commensurate with other well-funded regional hydrogen organisations such as Thames Estuary and Hydrogen East, even though Hydrogen Sussex's local projects and national profile is equivalent.
- 5.4. The governance of the hydrogen strategy will be through Greater Brighton.

6. REQUEST FOR 2022 FUNDING FOR HYDROGEN SUSSEX

- 6.1. In 2021, Greater Brighton provided £13,696 funding for Hydrogen Sussex core functions. This has been used to provide training, website development, and membership of a key industry organisation.
- 6.2. However, most of Hydrogen Sussex's work has been done with generous pro bono contributions of time, which is not sustainable in the long term. This limits Hydrogen Sussex's ability to progress larger projects - including the ambition to develop a regional investment proposition.
- 6.3. Hydrogen Sussex would like to request funding from Greater Brighton, of £25,000, to support commissioning of an initial hydrogen investment proposition and strategy. This process would involve the drawing up of a specification for the

work and tendering for a consultant. This would be carried out by BHCC on behalf of the Greater Brighton partnership and the process could start as soon as the funding is approved, because Hydrogen Sussex has already worked on an outline specification.

- 6.4. Hydrogen Sussex is likely to need further additional funding to fully develop the investment case. The group can investigate other potential sources of funding including commercial sources and Coast to Capital LEP seed funding.

7. ANALYSIS & CONSIDERATION OF ANY ALTERNATIVE OPTIONS

- 7.1. The proactive and forward-thinking work of Hydrogen Sussex and Greater Brighton, including the ambition to become a leading hydrogen region, will ensure that the City Region is best placed to take advantage of these opportunities. A reactive or do-nothing approach would jeopardise the excellent work already done and potentially lead to future opportunities being missed.

8. COMMUNITY ENGAGEMENT & CONSULTATION

- 8.1. Hydrogen Sussex brings together a large number of Greater Brighton members including local authorities, universities and other key stakeholders. It is also reaching out to hydrogen groups across other areas of the UK.

9. CONCLUSION

- 9.1. Greater Brighton's activities to develop a hydrogen economy will support green objectives of the Greater Brighton Energy and Water Plans, Greater Brighton 10 Pledges, and ambition to establish a Hydrogen Hub.
- 9.2. Continuing development of a hydrogen strategy, research and ongoing work of Hydrogen Sussex will ensure that plans are in progress to maximise these opportunities. Further, at the current time it is crucial that the region is seizing the initiative to initiate, support and coordinate projects which will both help the environment and lead a sustainable economic recovery.

10. FINANCIAL & OTHER IMPLICATIONS:

Financial Implications

- 10.1. A contribution of £25,000 will be made from the Greater Brighton Economic Board Operational Budget 21-22 to Hydrogen Sussex for commissioning an initial hydrogen investment proposition and strategy. An existing contribution of £13,696 has already been made to Hydrogen Sussex for core functions. Hydrogen Sussex is likely to need further additional funding to fully develop the investment case. Further work will be undertaken to explore other potential sources of funding which may include commercial sources and Coast to Capital LEP seed funding options.

Finance Officer Consulted: Rob Allen, Principal Accountant
Date: 19/01/22

Legal Implications

- 10.2. There are no legal implications arising directly from this report.

Lawyer Consulted: Joanne Dunnyaglo, Senior Property Lawyer

Date: 14/01/2022

Sustainability Implications

- 10.3. A gradual transition to hydrogen to power key sectors, including heavy freight, shipping, and carbon-intensive manufacturing, will help to cut carbon emissions and provide better air quality, thus having a positive impact on sustainability. The focus of Hydrogen Sussex is on 'green' hydrogen, produced by electrolysis with renewable electricity, which therefore has very limited carbon emissions from production and makes the most of the region's potential for renewable power.

SUPPORTING DOCUMENTATION

Background Documents:

Greater Brighton Energy Plan (July 2020)

Greater Brighton 10 Pledges (October 2020) and update (October 2021)