GMCA GREATER MANCHESTER COMBINED AUTHORITY

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Date: 30 July 2021

Subject: Hydrogen and Fuel Cell Strategy 2021-2025

Report of: Councillor Emmott, Portfolio Lead for Green City Region and Pam Smith, Portfolio Lead Chief Executive for Green City Region

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PURPOSE OF REPORT:

To seek approval for GMCA to adopt the GM Hydrogen and Fuel Cell Strategy 2021-2025, produced by Manchester Metropolitan University on behalf of the city region.

RECOMMENDATIONS:

The GMCA is requested to:

1. **Note the Hydrogen and Fuel Cell Strategy and its contents.**
2. **Agree that GMCA should adopt the GM Hydrogen and Fuel Cell Strategy (draft attached at Annex 1) subject to resolving minor drafting changes.**

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Equalities Implications:

The impact on equalities is low as the strategy is open to all.

Climate Change Impact Assessment and Mitigation Measures –

1. *If adopted the strategy would support and inform the regions policies on Hydrogen and Fuel Cells for the city region.*
2. *It is recognized there will be a role for Hydrogen alongside other forms of energy to support our ambitions of becoming carbon neutral by 2038.*

Impacts Questionnaire

Impact Indicator	Result	Justification/Mitigation
Equality and Inclusion		
Health		
Resilience and Adaptation	G	Hydrogen and fuel cells will play a significant part in how as a region we reduce our CO2 emmisions e.g. clikmate change
Housing		
Economy		
Mobility and Connectivity		
Carbon, Nature and Environment	G	Hydrogen as a replacement fuel to diesal would suppoort the transisiton of heavy haulage in years to come
Consumption and Production		
Contribution to achieving the GM Carbon Neutral 2038 target		Electrification of heating and mobility will only suppoort our transition to carbon neutrality in part. We need a suite of options to ensure that het networks heavy haulage and heavy industry are all catered for.
Further Assessment(s):		N/A

	Positive impacts overall, whether long or short term.		**Mix of positive and negative impacts. Trade-offs to consider.**		**Mostly negative, with at least one positive aspect. Trade-offs to consider.**		**Negative impacts overall.**

Risk Management:

This is a strategy document which has been informed by both national and local actors and or polices. This strategy will require further updates in the future as technology an solution innovation is increased.

Legal Considerations:

The contents of this strategy are not legally binding and as such this is document to support and guide.

Financial Consequences – Revenue:

There are no financial consequences for GMCA revenue budgets.

Financial Consequences – Capital:

There are no financial consequences for GMCA capital budgets.

Number of attachments to the report: 1

Comments/recommendations from Overview & Scrutiny Committee
BACKGROUND PAPERS:

See the attached GM Hydrogen and Fuel Cell Strategy

TRACKING/PROCESS		
Does this report relate to a major strategic decision, as set out in the GMCA Constitution		Yes
EXEMPTION FROM CALL IN		
Are there any aspects in this report which means it should be considered to be exempt from call in by the relevant Scrutiny Committee on the grounds of urgency?	no	
GM Transport Committee	Overview & Scrutiny Committee	
N/A	Tbc	

1. INTRODUCTION/BACKGROUND

1.1 In 2020, at the GM Green Summit, the Hydrogen and Fuel Cell strategy 2021-25 was launched as a report written by Manchester Metropolitan University on behalf of the region. The strategy sets out to inform how hydrogen and fuel cells may support GM to achieve our goals, both environmentally and economically.

1.2 To deliver the Greater Manchester 2038 carbon-neutral target, full decarbonisation of all sectors will be necessary. This GM Hydrogen and Fuel Cell Strategy 2021-2025 highlights the activities and policy initiatives taking place across the Northern Powerhouse to position the North for the introduction of hydrogen as a component of the energy mix and Greater Manchester's role in supporting these.

1.3 The state of readiness of current technologies is assessed. A number of short-term recommendations are made to position the Greater Manchester region for the arrival of large volume hydrogen supplies in the late 2020's. To make widespread use of hydrogen a reality in the future, government, local authorities and academic institutions can take a positive lead in directing the way forward.

1.4 Cooperation and support from central government is crucial in order to facilitate changes towards new carbon free energy and unlock business opportunities and on scale deployment. This can be achieved by providing financial schemes to support demonstration projects, regulation/incentives on clean fuels, and emission penalties to make end users and industries desire environmentally friendly solutions. This would drive the demand and change social perception making new and high-risk technologies seen as accessible and risk-free, a reliable clean-swap solution.

1.5 The Strategy focusses on delivery in 3 phases:

- Phase 1 2020–2025: Establish Transport Supply Chain and Build Confidence in Wider Hydrogen
- Phase 2 2026–2030: Prepare for the availability of large volume hydrogen supply
- Phase 3 2028–2031: Establishment of a CO_2 free hydrogen supply system.

2.0 PROGRESS AND RATIONAL

2.1 To date, the majority for hydrogen and or fuel cell development has taken place outside of Greater Manchester e.g., Hy4Heat (Keele University) and HyNet NW (Cheshire West), with the exception of the city region's research exemplar, the Hydrogen and Fuel Cell Centre of Excellence, led by Manchester Metropolitan University.

2.2 The region will benefit from the each of the projects highlighted above, through our research capabilities in Phase 1 and thereafter our consultancy and engineering expertise, before receiving hydrogen in the later phases. However, the city region could do more.

2.3 The adoption of the GM Hydrogen and Fuel Cell strategy supports our intent to be carbon neutral by 2038 and provides a signal to the market to both develop and invest in our low carbon economy.

2.4 It is this intent which led to the agreement of an MOU between Carlton Power, GMCA, Trafford Council, ENW, Cadent and Manchester Metropolitan University to explore the development of the Trafford Green Hydrogen Project.

2.5 The project aims to develop the existing Carrington energy park to include Green Hydrogen production alongside an existing CCGT (Gas Power Station), and the innovative and largest 10MW Cryo-Storage facility in the world. The site would contain 10MW electrolyzes, powered by local solar and NW wind farms, to produce the Green Hydrogen, making this a truly multi energy vector site here in GM - supporting phase 1 of the GM Hydrogen and Fuel Cell Strategy.

3.0 OPPORTUNITIES/RISKS

3.1 The key opportunities include:

- Provide clear strategy and policy direction for the region
- Opportunity to encourage inward investment, innovation, research, and development in this area
- Encourage the market to develop solutions and infrastructure to support our heavy goods fleets transition towards carbon neutrality

3.2 The key risks include:

- Failure to provide a clear direction and steer on how hydrogen can and will support our low carbon ambition.
- Failure to secure additional funding as result of not having a GM Hydrogen and fuel Cell strategy

4.0 FINANCIAL IMPLICATIONS

4.1 There are no direct financial implications of adopting the GM Hydrogen and Fuel Cell Strategy.

4.2 The implementation of the strategy will be through project interventions funded through bids to external funders and investment from the market and/or Government when seeking to attract future public grants and/or inward investment in this area.

5.0 RECOMMENDATIONS:

The GMCA is requested to:

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