

## ABERDEEN CITY COUNCIL

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<b>COMMITTEE</b>	City Growth and Resources
<b>DATE</b>	28th October 2020
<b>EXEMPT</b>	Full Report – No  Appendix 1 – Yes  8. This report refers to the supply of goods or services where disclosure to the public of the amounts referred to would be likely to give an advantage to a person or organisation entering, or seeking to enter, a contract with the Council.
<b>CONFIDENTIAL</b>	No
<b>REPORT TITLE</b>	Aberdeen Hydrogen Hub Programme
<b>REPORT NUMBER</b>	COM/20/185
<b>DIRECTOR</b>	N/A
<b>CHIEF OFFICER</b>	Richard Sweetnam
<b>REPORT AUTHOR</b>	Andrew Win
<b>TERMS OF REFERENCE</b>	1.1, 3.3

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### 1. PURPOSE OF REPORT

- 1.1 The purpose of the report is to provide an update to Committee on the proposed Aberdeen Hydrogen Hub programme and the initial workstreams to deliver it.

### 2. RECOMMENDATIONS

That the Committee:

- 2.1 Notes that the Scottish Government's Energy Transition Fund has allocated up to £15m of funding to support the delivery of the Aberdeen Hydrogen Hub Phase One outputs, subject to the Scottish Government's approval of an 'Outline Business Case' submitted in September 2020;
- 2.2 Approves the programme of work for the Aberdeen Hydrogen Hub - Phase One outlined in Appendix One;
- 2.3 Authorises Chief Officer – City Growth following consultation with the Head of Commercial and Procurement Services to spend the funding in accordance with all grant and funding agreement conditions and the Council's procurement procedures;

- 2.4 Approves the expenditure to purchase 10 hydrogen fuel cell buses through the FCH JU JIVE project, subject to confirmation of Scottish Government funding through the Energy Transition Fund and in line with Council's existing budgetary commitment from the General Fund Capital programme;
- 2.5 Authorises the Chief Officer - City Growth and the Chief Officer – Operations and Protective Services following consultation with the Head of Commercial and Procurement Services to undertake a procurement exercise and award a tender to establish Joint Hydrogen Vehicle Procurement Frameworks working with other north east Scotland authorities and public sector bodies;
- 2.6 Authorises the Chief Officer – City Growth following consultation with Head of Commercial and Procurement Services and Chief Officer – Governance to undertake a procurement exercise and award for the commission of works to adapt existing hydrogen refuelling facilities to receive hydrogen from an external supply;
- 2.7 Instructs the Chief Officer – City Growth following consultation with the Chief Officer – Finance, Head of Commercial and Procurement Services and the Chief Officer – Governance to identify the optimum investment and delivery model for the production, storage and distribution of renewable hydrogen for Aberdeen, and report back to this Committee with the results of that appraisal;
- 2.8 Authorise the Chief Officer – City Growth in consultation with the Head of Commercial and Procurement Services to undertake a procurement exercise for external consultancy and technical advice to determine the optimum investment and delivery model;
- 2.9 Authorise the Chief Officer – City Growth in consultation with the Head of Commercial and Procurement Services to undertake a procurement exercise for feasibility studies outlined in this report into future applications of fuel produced by the Hydrogen Hub;
- 2.10 Notes that Aberdeen City Council has been awarded JIVE Bus fuel funding from the Scottish Government's Air Quality Action Plan Grant 2020/21 and authorise the Chief Officer – City Growth to spend the funding in accordance with the grant conditions and the Council's procurement procedures.

### **3. BACKGROUND**

- 3.1 The 'Net Zero Vision' and 'Strategic Infrastructure Plan – Energy Transition' was approved by the Council in June 2020. Hydrogen power is a key strand of the overall ambition to become a 'climate positive' city. The Plan provides a clear statement of intent that builds on the city's expertise and experience to date, implemented across three phases:
  - *Immediately*, the focus is on delivery of production, storage and distribution infrastructure for green hydrogen utilising renewable power to produce hydrogen for the next phase of 100% Hydrogen Bus Fleets and the public sector vehicle fleet alongside interim fuelling solutions to service demand

during the programme's development. This phase is the subject of this report.

- Building on this, in the *medium term*, delivery of a hydrogen for heat initiative, partnering with international suppliers to invest in a hydrogen fuel cell deployment for housing; and
- With these building blocks in place, *longer term* the ambition is to locate a UK Hydrogen Production and Export Hub in Aberdeen, that generates large scale production from renewable energy for transport (rail and ferries), housing, industrial use and ultimately export of green hydrogen from Aberdeen to UK and international export markets.

3.2 The Aberdeen Hydrogen Hub is a key project in the 'Strategic Infrastructure Plan – Energy Transition' and is designed to put Aberdeen at the forefront of a developing hydrogen economy and to maintain the region's profile and credentials as a centre of excellence for hydrogen deployment. It aims to deliver a large-scale hydrogen production facility from renewable energy to decarbonise transport, heat, and industrial sectors.

3.3 Not only does the hydrogen hub, and its subsequent phases, have the potential to provide a significant contribution to UK Government and Scottish Government Climate Change targets, it aligns with the UK Government's announcement of a Hydrogen Transport Programme, the Scottish Government's Programme for Government and in particular, the imminent Hydrogen Policy Statement and action plan.

### **Progress to Date**

3.4 Under the 'Hydrogen Transport Economy for the North Sea region' (HyTrEc2) project, officers, in partnership with Scottish Enterprise (SE) and Opportunity North East (ONE), commissioned the study of an 'Aberdeen Hydrogen Hub' to address the economic and commercial case for investment in commercial scale, renewable 'green' hydrogen for use in the transport, heat and industrial sectors. The work identified the following key points:

- Growing demand for hydrogen in Aberdeen, particularly the new fuel cell buses being introduced under the European 'Joint Initiative for Vehicle Expansion' (JIVE) project, requires expanded production and distribution infrastructure of renewables-based fuel that can be sold to users at a price that may also facilitate further demand growth.
- The Hub programme has the potential to catalyse growth in the use of renewable hydrogen across the transport sector (early opportunities include buses, Council vehicles and commercial vehicles), and lay the foundations for penetration of this zero-carbon fuel in other applications such as domestic / commercial heat and industry. Delivering the Hub programme is thus a stepping-stone to wider use of hydrogen, which in turn will accelerate the transition to a Net Zero economy in both Aberdeen and across North East Scotland.

- Hydrogen can facilitate more efficient utilisation of renewable electricity generators, especially offshore wind, and is expected to play a role in meeting long-term emission reduction targets in many countries around the world.
- North East Scotland is very well placed to capitalise on this opportunity given the existing skills base of companies operating in the oil and gas sector. Strengths include energy infrastructure design, installation, commissioning, and maintenance; project management; piping and cabling; offshore engineering; gas handling; etc. Creating a Hydrogen Hub will bring a wide range of opportunities throughout the supply chain, support the region's transition to a low carbon energy future, and allow both existing local companies and new entrants to the market to thrive and grow.
- The Hub programme will be delivered in phases in response to growing demands for hydrogen. It is also designed to be compatible with a range of low carbon and renewable hydrogen supply routes, many of which are under development and all of which require growth in markets for hydrogen fuel. The Hub programme offers the opportunity to accelerate the development of these markets.

3.5 The Scottish Government in June 2020 announced a £62m ring-fenced 'Energy Transition Fund' to develop energy transition projects in the north east of Scotland with funds earmarked for the Aberdeen Hydrogen Hub, subject to submission and approval of a business case. Other projects include a Global Underwater Hub, Net Zero Solution Centre projects, support to the Acorn project and support to develop the Energy Transition Zone (ETZ).

3.6 Ultimately 'energy transition', and the Hydrogen Hub Project will require new skills, expertise and offer new job opportunities. Skills Development Scotland (SDS), supported by North East of Scotland College (NESCOL) and the Council is leading a workstream that will focus on development of a jobs and energy transition skills programme, that will also involve the Council and the universities so that local people in the city are able to access new training and jobs opportunities in offshore wind, carbon capture, utilization and storage (CCUS) and Hydrogen. It is also intended to promote and stimulate broader 'green skills' that will also be in demand and aligns to the subsequent announcement by the Scottish Government proposals for a £100m Green Jobs Fund. Given the likely demand for these skills and jobs to increase in the medium term, and towards the late 2020s, there is an opportunity to embed the opportunity and change required with primary and secondary school pupils now.

3.7 A recent report on the integration of offshore wind and hydrogen by the Offshore Renewables Energy Catapult (OREC) and the Offshore Wind Industry Council recommends that with "potential demand for secure, green hydrogen in mainland Europe, there was an opportunity to help to secure a future for the extensive skills and assets of the UK offshore oil and gas industry with strong prospects to preserve critical skills from the O&G sector." It concludes that developing a green hydrogen sector in the next five years will be critical to achieving cost reduction and growing a significant manufacturing and export

industry. The combination of offshore wind deployment and electrolyser manufacture alone could generate over 120,000 new UK jobs, “replacing those lost in conventional oil and gas production”.

#### **4. Proposals for the Next Stage**

4.1 Officers have assessed a schedule of phased investments required to meet the objectives of the Aberdeen Hydrogen Hub. These are presented in full in Appendix One – “Aberdeen Hydrogen Hub Outline Business Case” was prepared for the bid to the Scottish Government’s Energy Transition Fund (exempt), and summarised below:

1. Hydrogen Demand - Initial investment is proposed for an additional tranche of hydrogen buses to secure an ‘anchor demand’ or baseline, with associated fuelling infrastructure to service immediate demand; vehicle replacement as part of Aberdeen City Council’s large vehicle fleet renewal; and feasibility assessment to inform further sustainable, scalable growth such as within housing, energy or maritime applications.
2. Distribution Infrastructure - Subsequent investment to develop a comprehensive infrastructure for the distribution, storage, and refuelling across the region to support the growth of transport fleets and the deployment of new applications, for example hydrogen for use in heating, maritime and industry.
3. Green Hydrogen Production - Enabling investment to facilitate the delivery of a fully renewables-based, commercially investable ‘green hydrogen’ production centre in the city region.

#### **Hydrogen Demand**

4.2 Public transport fleet renewal provides an opportunity to deliver benefits in line with the Council’s statutory responsibility for delivery of Air Quality Action Plan improvements in the City Centre, through emission reductions. While other hydrogen vehicle types are available and will be considered for implementation as part of a diverse fleet mix across the Council and partners, buses are currently the most cost-effective mechanism for creating and raising substantial hydrogen demand in the region. As well as being more technically mature, thereby requiring a lower capital funding premium, they undertake greater mileage, therefore using more hydrogen. Per pound of investment for hydrogen use, buses remain the most cost-effective option to support raising demand.

4.3 The Council participation in the FCH JU JIVE project planned to deliver 15 double decker hydrogen buses with Wright bus and First Group. These buses will come into operation in November 2020. With further Scottish Government and FCH JU funding the Council intends to purchase a further 10 buses through JIVE as outlined in the business case to Strategic Commissioning on 27 August 2020. The additional ten buses will be funded through FCH JU and the Energy Transition Fund. No match funding is required from the Council’s General Fund Capital programme.

4.4 The operation of 25 buses will increase demand for hydrogen to around 500kg per day and provides the ‘anchor demand’ which is anticipate to be required to

encourage a supplier of green hydrogen to enter the market on a commercial basis, thereby helping to scale up hydrogen production.

- 4.5 First Aberdeen will operate the 15 double decker hydrogen buses. Given that the additional buses are an extension of the JIVE project, First Aberdeen are the proposed partner for the additional vehicles. First Aberdeen have in principle committed to another ten buses subject to performance of the initial buses.
- 4.6 In March 2020, the Council approved plans to replace its fleet vehicles with alternative powered vehicles (where such vehicles are available). Through the Interreg Europe Smart HyAware project, officers, in partnership with ONE and SE, have commissioned a fleet review of public and private sector organisations in North East Scotland to assess which of their vehicles can be converted to hydrogen over the next five years. They include Aberdeen City Council, Aberdeenshire Council, Angus Council, Moray Council, Highland Council, North East Scotland College, Robert Gordon University, NHS Grampian, NatureScot, SEPA, Scottish Water and Royal Mail.
- 4.7 The establishment of Joint Procurement Frameworks in partnership with other North East Scotland authorities and public sector bodies will allow consolidation of orders of various hydrogen vehicles, resulting in cost reductions, but also allowing partners to take advantage of individual funding opportunities. Significant numbers could result in manufacturers considering locating in North East Scotland to meet the region's demand and officers would explore this as part of any tender proceedings.
- 4.8 In addition to phase one of the Hydrogen Hub programme, officers have identified opportunities and applications to diversify the use of hydrogen in housing, rail, maritime, energy, including the use of hydrogen to decarbonise District Heating (DHC) and Combined Heat and Power (CHP). The proposed Energy Transition Fund grant includes £200,000 from Scottish Government to undertake the following studies:
  - Rail Pilot Study - a feasibility study to identify a potential hydrogen rail pilot and deployment in Aberdeen and the North East as part of the transitional arrangements prior to, or alongside, the overhead electrification aspiration set out in the recent Transport Scotland Rail Decarbonisation Action Plan.
  - Fleet Development and Infrastructure Plan – a feasibility study to determine the infrastructure requirement for further fleet deployments and supporting infrastructure in conjunction with public sector partners in the North East.
  - Hydrogen for Heat – a technical and economic feasibility study to determine the use of hydrogen as a fuel for the City's district heat schemes and communal heating systems: and
  - Potential export markets – Aberdeen as an exporter of hydrogen to domestic and international markets.

## **Green Hydrogen Production**

- 4.9 The long-term vision and aspiration for the Aberdeen Hydrogen Hub is to deliver a commercial scale, 'green hydrogen' production, storage, and distribution hub in the Aberdeen City Region. It would deploy electrolysis powered from an appropriate renewable energy source.
- 4.10 There are several potential sites for both the production hub and the energy source; initial discussions have commenced with multiple operators as to the most commercially and technically advantageous model to establish a 'Hub'. To develop these further, officers will undertake an options appraisal to determine the best commercial model for the Council. This appraisal will consider the role of the Council in relation to hydrogen production, distribution, and refuelling infrastructure. Options could include opportunities for Council investment, either directly or through a Joint Venture with a commercial partner or by the establishment of Special Purpose Vehicle.
- 4.11 A Prior Information Notice will be issued to help Aberdeen City Council identify the most appropriate model for the production and supply of renewable hydrogen available in the market.
- 4.12 Following a commercial scale green hydrogen production centre in the region, the associated training and employment opportunities will be included in the energy transition skills programme, focussed on driving the inclusive, employability growth that energy transition can deliver through the existing oil and gas supply chain.

## **Infrastructure for Hydrogen Distribution**

- 4.13 Further investment in infrastructure is proposed to develop a comprehensive distribution and refuelling network across the Aberdeen City region. This will also lay the foundations for supporting the growth of transport fleets, as above, and the deployment of new applications (energy, maritime, etc) in due course.
- 4.14 The Event Complex Aberdeen (TECA) Energy Centre currently produces hydrogen as a by-product. It is proposed that, while a supplier of renewable hydrogen is being sought, minor site modifications are made to the Energy Centre to accommodate HGV/trailer access to allow fuel to be moved on and off site to meet immediate and potentially future demand across the city. This approach then has the advantage of providing a backup supply of hydrogen in the future if required.
- 4.15 Modifications would also be made to the two existing hydrogen refuelling stations at Kittybrewster and Cove to allow them to receive trailered hydrogen. This will involve increasing their storage capacity and potentially access adjustments to enable large trailers to drop off and pick up. Kittybrewster depot will continue to be the primary site for refuelling buses and public sector fleets over the next 18 months while a renewable green hydrogen is sought and is therefore a priority.

- 4.16 As vehicle numbers scale up, on-site/ proximity refuelling is essential. Officers will explore options with First Bus and Waste Services for on-site refuelling around the King Street bus depot and Altens Waste depot, respectively. Altens East is also within the proposed Energy Transition Zone at Aberdeen Harbour South and could also, in time, service potential rail and maritime applications alongside the associated HGV traffic that services the harbour if it could be made publicly accessible.

## **5. FINANCIAL IMPLICATIONS**

- 5.1 The green book compliant Outline Business Case submitted to Scottish Government in September 2020 is contained within Appendix One – Aberdeen Hydrogen Hub Outline Business Case (exempt). It provides the detailed strategic, commercial, economic, and financial cases for £15m of grant funding from the Energy Transition Fund towards the delivery of Phase One of the Aberdeen Hydrogen Hub programme. The Scottish Government has indicated a broad approval of the initial proposals and a decision is expected this month on any acceptance and associated terms.
- 5.2 The potential Energy Transition Fund grant for the Aberdeen Hydrogen Hub is 100% funded by the Scottish Government. However, the intention of the Hub programme is to act as strategic investment to lever in up to £43m of additional private and public sector funding to allow commercial entry of a renewable energy supplier, and then to scale up activities and demand for export of green hydrogen in the future (Phase 3).
- 5.3 At this stage, no further funding commitment for the Council is requested or anticipated. Possible investment opportunities for the Council through commercial models including potential Joint Ventures and Special Purpose Vehicles will be explored as part of the feasibility studies.
- 5.4 The only other direct financial implications to the Council for delivery of Phase One of the Hydrogen Hub programme relate to officer time and the continued use of the existing Fleet Replacement Capital budget. The ongoing fleet review, as outlined in paragraph 4.7, will identify the numbers and cost for adopting hydrogen (and electric) vehicles in the fleet. This will then allow officers to test the market for hydrogen vehicles and assess the cost of a zero-emission fleet.
- 5.5 Officers will continue to actively seek match funding and grant funding opportunities with various Partners for fleet and infrastructure to deliver the Hydrogen Hub programme aspirations. This now includes the full funding for delivering the ten additional double decker buses from FCH JU and the Energy Transition Fund as outlined in the business case approved by Strategic Commissioning Committee on 27<sup>th</sup> August 2020. Officers have also secured £100,000 for hydrogen bus fuel subsidy from the Air Quality Action Plan Grant 20/21. This will allow the hydrogen buses to run at diesel price parity while refuelling distribution and retrofitting is commissioned. This will encourage their use while reducing emissions.

- 5.6 The costs of the proposed consultancy and technical advice to identify the optimum delivery model will be met through existing City Growth service budgets.

## **6. LEGAL IMPLICATIONS**

- 6.1 Any tendered services or contracts with FCH JU, the Scottish Government, and others, will be subject to review and approval by the Head of Commercial and Procurement Services.
- 6.2 Buses would be procured by the City Council, as the FCH JU JIVE funding is only available to local authorities and then leased to the bus operator at the current market value of a diesel bus. This means there is no additional cost to the bus operator over and above what they would be paying normally. This effectively renders any state aid redundant – as this project is still a trial of technology, hence being subsidised by Europe.
- 6.3 Kittybrewster is currently subject to review by the Operations and the Corporate Landlord Service. The Kittybrewster refuelling station equipment is currently owned by BOC and situated at Kittybrewster depot. If the depot site is removed from the Council's portfolio within the next 18 months, and before a renewable supply of hydrogen is secured with additional refuelling facilities, this would disrupt hydrogen supply for the Council's fleet and buses. It is therefore proposed that officers liaise closely on any imminent actions/ negotiations to ensure that the site can continue to operate for as possible without compromising any future Council service redesigns.
- 6.4 Any additional grants received will be subject to approval under delegated powers by the Chief Officer – City Growth, following consultation with the Convener of this Committee, Chief Officer – Finance and Head of Commercial and Procurement Service. Any expenditure of such grant monies will be in accordance with the Council's Procurement and Finance Regulations unless agreed otherwise by this committee.

## **7. MANAGEMENT OF RISK**

- 7.1 As with all major projects, a degree of risk is inherent in the proposals however the work being undertaken by officers is designed to ensure that the proposed delivery and commercial model(s) distribute risk as appropriately as possible between partners and all appropriate risk reduction measures have been undertaken.
- 7.2 The Council has entered into a relationship with BP to provide technical and commercial guidance in relation to Energy Transition activities and officers will be making use of this strategic partnership to inform the understanding of risk, and any appropriate mitigations required as the project develops.

Category	Risk	Low (L) Medium (M) High (H)	Mitigation
<b>Strategic Risk</b>	The investment in the Hub proves insufficient to enable commercialisation meaning intended benefits with jobs, training, supply chain, etc. fails to materialise.	M	Open dialogue with potential suppliers. Using the Energy Transition Fund allocation to ensure that an anchor demand is established, lowering the risk to any potential supplier. Contracts that build in jobs, local supply chain benefits and (re)training opportunities.
	Demand does not materialise in line with forecasts	M	Delivery models that place the longer-term viability risk with delivery partners and investors rather than the Council. Active engagement with all partners to facilitate sustainable growth of the sector in line with the City's aspirations for a hydrogen economy.
	Changing government policy which reduces support for hydrogen fuel	L	Continuing engagement with relevant UK/Scottish Government stakeholders to demonstrate value and progress being made.
	Future investment for subsequent phases is not secured	M	Ongoing engagement with delivery and investment partners to align investments with demand growth and commercial models structured to limit Council's exposure to future market volatility.
	Scottish Government business case not approved	L	Effective handling of any SG queries or concerns around aspects of the business case. Continuing active exploration of alternative/complementary capital funding sources and investment models.

Category	Risk	Low (L) Medium (M) High (H)	Mitigation
<b>Compliance</b>	Non-compliance with grant conditions.	L	Early engagement with specialist resource in Legal and Procurement to ensure all ACC responsibilities are fully captured, understood, and addressed to ensure compliance.
	Non-compliance with procurement or contractual requirements.	L	Council's Procurement Regulations designed to facilitate compliance with procurement law. All procurement to be done following consultation with the Head of Commercial and Procurement Services.
<b>Operational</b>	Insufficient staff resources or expertise to progress actions or deliver and operate assets	M	Prioritise externally funded projects with income potential. Transfer risks around procuring delivery and operational staffing to delivery partners.
	Kittybrewster sold including the HRS land	L	Ensure BOC given sufficient notice to remove any infrastructure from the site and other options are in place prior to disposal of the site. Liaise with Asset colleagues.
	Inability to secure appropriate alternative land/facilities	L	Early engagement with colleagues involved in estates planning to understand alternative Council-owned options and dialogue where required with third party landowners to identify external alternatives.
<b>Financial</b>	Increase in costs due to COVID-19, supply chain or exchange rates	M	Cost estimates based on latest prices. Small contingency built into capital budget to accommodate.

Category	Risk	Low (L) Medium (M) High (H)	Mitigation
			Arrange flexibility with funding bodies on the potential spend risk. Design commercial models to limit the Council's exposure to delivery risk.
<b>Reputational</b>	Acceptance of grant and then not being able to fulfil the timescales or conditions	L	Establish governance procedures to ensure appropriate lead in times and clear deliverables in regular liaison with the funding bodies.
	Lack of communications / awareness around the Hub and its ambitions.	L	Scale up communications activities.
<b>Environment / Climate</b>	Unable to deliver anticipated environmental / climate improvements in line with expectations	L	Ensure that the Hydrogen Hub is progressed in timeous manner so that refuelling is available for when the buses arrive / buses are available when the refuelling arrives.

## 8. OUTCOMES

<b><u>COUNCIL DELIVERY PLAN</u></b>	
	<b>Impact of Report</b>
<b>Aberdeen City Council Policy Statement</b>	<p>The proposals within this report support the delivery of the following Policy Statement objectives:</p> <p>Economy: 14. Work with both governments to unleash the non-oil and gas economic potential of the city</p> <p>Place: 1. Build up existing strength in hydrogen technology 2. Support efforts to develop inward investment</p>
<b>Aberdeen City Local Outcome Improvement Plan</b>	
Prosperous Economy Stretch Outcomes	The deployment of hydrogen vehicles as part of the long-term plan to deliver the Aberdeen Hydrogen

	<p>Hub directly support the delivery of LOIP Stretch Outcome 1 – 10% increase in employment across priority and volume growth sectors by 2026. The overall outcome target must be to maintain and grow 36,000 jobs in the energy sector, including renewables. Delivery of the Hydrogen Hub programme will have a direct impact on local jobs (additional technicians, refuelling capability, local supply chain support, training, construction, delivery) and significant potential on GDA of the region and the number of jobs.</p>
Prosperous People Stretch Outcomes	<p>The proposals in this report support the delivery of stretch outcome 11 - Healthy life expectancy (time lived in good health) is five years longer by 2026. As the h2 buses have zero carbon emissions this will have benefits for city centre residents by meeting the LEZ restrictions – all First buses go through the City Centre.</p>
Prosperous Place Stretch Outcomes	<p>The proposals in this report support and go beyond the delivery of stretch outcome 14 - carbon emissions reduction by 42.5% by 2026 and adapting to the impacts of our changing climate. Renewable hydrogen has zero emissions. ACC's h2 vehicles have saved over 130 tonnes of CO2 in the past 2 years as they run on green tariff produced hydrogen.</p>
<b>Regional and City Strategies</b>	<p>The proposals within this report support the Regional Economic Strategy &amp; Action Plan, Energy Transition Vision, Strategic Infrastructure Plan, draft Regional Transport Strategy 2020, Local Transport Strategy, Hydrogen Strategy &amp; Action Plan and Air Quality Action Plan by proposing establishing Aberdeen as a Hydrogen Hub and rolling out zero emission vehicles</p>
<b>UK and Scottish Legislative and Policy Programmes</b>	<p>The recommendations in this report contribute to the City's response to the Intergovernmental Panel on Climate Change set under the Paris Agreement and the UK Governments ambition to have Net Zero emission by 2045. The report also set out the City's plans to meet the Scottish Government's Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.</p>

## 9. IMPACT ASSESSMENTS

Assessment	Outcome
Impact Assessment	Not required.
Data Protection Impact Assessment	Not required.

## 10. BACKGROUND PAPERS

COM/20/0009 Net Zero Vision and Infrastructure Plan Governance  
Urgent Business Committee, 30<sup>th</sup> June 2020

CHI/16/258: FCH JU JIVE Business Case  
Finance, Policy and Resources Committee, 1<sup>st</sup> December 2016

RES/20/065 General Fund Revenue Budget and Capital Programme 20/21  
Full Council, 3<sup>rd</sup> March 2020

COM/20/109 JIVE Hydrogen Bus Extension (000-GUTU4722)  
Strategic Commissioning Committee, 27<sup>th</sup> August 2020

## 11. APPENDICES

Appendix One: Aberdeen Hydrogen Hub Outline Business Case (exempt)

## 12. REPORT AUTHOR CONTACT DETAILS

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