

ABERDEEN CITY COUNCIL

COMMITTEE	Enterprise, Planning & Infrastructure
DATE	12 November 2013
DIRECTOR	Gordon McIntosh
TITLE OF REPORT	Strategic Hydrogen Programme
REPORT NUMBER:	EPI/13/208
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1. PURPOSE OF REPORT

- 1.1 The purpose of this report is to request committee approval for participation in the projects identified within this report.
- 1.2 At the meeting of Enterprise Planning and Infrastructure on 15 November 2011 officers were given approval to seek external funding to deliver the HyTransit and HyTrEc projects. External funding for these projects was secured and the projects were then given full approval for delivery by Full Council at their meeting on 20 January 2012. that same report (Strategic European Hydrogen Transport Projects) at 5.5 it was stated that “When these two projects come to fruition, this will activate phase 2 of the project which will develop a network of filling stations which will be required to meet the demand of the buses. The strategy here is for commercial production and delivery of green hydrogen generated for renewable energy as a by-product.”
- 1.3 This report puts forward a Strategic Hydrogen Programme of projects which are designed to demonstrate and deploy the most innovative of hydrogen technologies in the area as instructed by Full Council in January 2012.

2. RECOMMENDATION(S)

- 2.1 It is recommended that Committee approves:
 - 2.1.1 That ACC participate and lead the bus feasibility study project with the seven cities if they agree to work in partnership. Failing that, that ACC develop a new partnership to undertake this project. This includes a contribution from ACC of up to £10,000 from existing service budgets.
 - 2.1.2 Travel costs for one officer to attend the Fuel Cell Hydrogen – Joint Undertaking (FCH-JU) workshop in Brussels on 5 November 2013 and the FCH-JU annual conference on the 13th of November.

- 2.1.3 ACC participation in the Hyacinth Project
- 2.1.4 ACC participation in the ACHES project, subject to securing additional external funding.
- 2.1.5 Travel for an Officer to be nominated by the Director EP&I to Hydrogenics established Hydrogen fuelling stations in the California, Canada and Belgium to finalise scope and design of station to be built in Aberdeen for the ACHES project
- 2.1.6 ACC to participate in the HESTON project, subject to securing additional external funding. .
- 2.1.7 The proposed delivery mechanism attached at appendix 1.
- 2.1.8 Travel costs for two officers, Director of EP&I plus Council Leader to launch the Smart Aberdeen 2020 documents in Scotland House, Brussels, on 27th November 2013.

3. FINANCIAL IMPLICATIONS

- 3.1 With a grant of €1.2m being made available from the FCH-JU it is anticipated that only a share of project management and administrative support costs would be required for the bus feasibility study project. Match funding of up to £10,000 is therefore necessary to cover these costs and would be met from existing service budgets (EU Projects).
- 3.2 Attendance at the FCH-JU Financial Claims Workshop and their annual conference would require travel and accommodation costs for one officer. This would cost up to £750 and would be met from existing service budgets (EU Projects).
- 3.3 With a grant of €814,340 for the partnership the match funding required from ACC is €4,576. At 02 October the official journal lists the exchange rate as €1=£0.83410. Therefore match funding of £3,817 is required and can be met from existing service budgets (EU Projects) to participate in the Hyacinth project.
- 3.4 Travel costs to finalise scope and design works of the hydrogen fuelling station for the ACHES project would require travel and accommodation costs for one officer. This would cost approximately £2,500 for the life time of the project and will be met from current service budgets (EU Projects)
- 3.5 Travel costs for Director of EP&I and ACC Leader and two officers to go to Brussels for the Smart Aberdeen 2020 launch. Anticipated costs of up to £1250 which will be met from within existing service budgets (EU projects).

4. OTHER IMPLICATIONS

- 4.1 Where there are any legal documents to be signed then Corporate Governance will be fully engaged to ensure that we are in full agreement with the legal obligations which we commit to.
- 4.2 Updates will be provided to committee on the progress of projects which have been fully approved.

5. BACKGROUND/MAIN ISSUES

Following on from the decision of Full Council on 20 January 2012 to develop a network of green hydrogen re-fuelling stations officers have worked to develop a programme of projects which can be delivered in a strategic manner and build upon the existing Hydrogen Framework Strategy launched in 2013.

Policy at EU, National and now Local level all indicate that Hydrogen can play a key role in decarbonising transport, but also for developing a sustainable low carbon economy. Policy alone will not lead to the commercial viability of innovative technologies and so it is vital that these are deployed to test their commercial viability and encourage private investment.

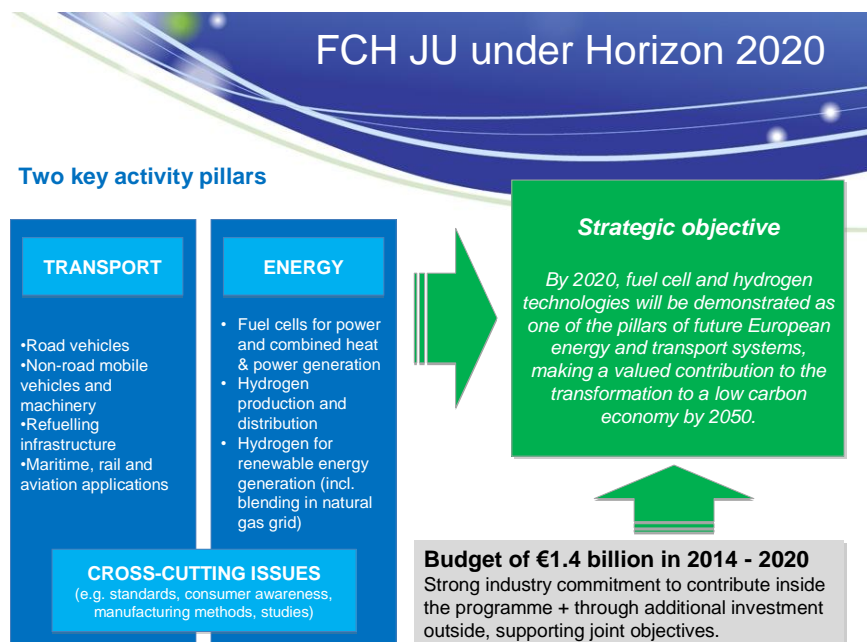
As one of the leading EU cities, Aberdeen is now well positioned to go on and become the leading region on the deployment of hydrogen technology. The potential growth of the market will depend upon industry investment and they have made it clear that they will be looking for testing grounds for fleets of vehicles.

5.1 Bus Feasibility Study

- 5.1.1 On 12 September 2013 at a meeting of the Scottish Cities Alliance (SCA) in Aberdeen, the Fuel Cell Hydrogen – Joint undertaking (FCH-JU) put forward an offer of €1.2m to the SCA to undertake a detailed feasibility study project to determine the viability of 100 hydrogen fuelled buses being deployed within Scotland's Cities. This would cover the total costs of the project with no Council funding required. Such a feasibility study is integral to scaling up number of buses which will be arriving in the City in the near future.
- 5.1.2 It is proposed that Aberdeen City Council takes the lead on this project should the SCA agree to work together. Should the SCA governance structure reject the proposal then it is proposed that Aberdeen City Council leads a transnational consortia with partners who have already been expressing an interest to be part of such a project. THE FCH-JU are looking for a detailed feasibility study which will identify the most suitable mix of low carbon transport solutions within cities. It is essential that the study outlines the commercial viability of these solutions so that there is a clear plan of how low carbon transport solutions can be fully integrated in cities across Europe. Aberdeen has been identified by the FCH-JU due to the ongoing work in the City to

date which has seen it emerge as a leading EU city.

5.1.3 The project would require only staff time to be input into the project, with the costs of this recoverable from the FCH-JU programme. It is planned to recruit as project manager and admin assistant through the Scottish Cities Alliance, or a consortia, with each partner making a financial contribution towards this cost. Total cost to ACC would be £10,000 and would be met from existing service budgets. This feasibility study will help to shape future projects within the Horizon 2020 programme to be launched next year. The FCH JU has outlined their vision for where future funding will be allocated from Horizon 2020 and this is well aligned to Aberdeen City Council priorities.



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5.2 FCH-JU Financial Claims Workshop

5.2.1 On 5 November 2013 there is a free workshop being hosted by the FCH-JU which will explain to attendees the requirements for submitting financial claims to receive grants. This workshop will help to ensure that attendees are clear about the audit requirements and that claims are error free and that no grant is lost due to error with the claims. ACC will be required to submit claims to the FCH-JU for the HyTransit project, and also the bus feasibility study project if committee approval is given.

5.3 Hydrogen Acceptance in the Transition Phase (HYACINTH)

- 5.3.1 At EPI Committee on 21 May 2013 (EPI/13/019) approval in principle was given for ACC to participate in the HYACINTH project subject to a further report for full approval once funding was confirmed.
- 5.3.2 This project is now in the negotiation phase with the funding body to ensure that all parties are in agreement over the project objectives, timescales and costs. The project aim is to gather and understand public attitudes and perceptions and levels of acceptance of hydrogen technologies at two main levels (country-level and project level) in various EU countries. The project assumes, as shown by social research on energy technologies, that public attitudes towards a general technology might be fundamentally different from attitudes towards specific developments.
- 5.3.3 The total costs for Aberdeen City Council will be €42,240. The FCH-JU will provide a grant to ACC of €37,664. The remaining contribution of €4,576 will come from existing service budgets (EU projects).
- 5.3.4 This project will play a key role in ensuring that future deployment projects are more aware of the issues of public perception and better placed to increase the understanding of the impact and benefits of the projects for businesses and citizens, and how to communicate these messages.

5.4 Aberdeen City Hydrogen Energy Storage Project (ACHES)

- 5.4.1 In line with the direction given from Full Council on 20 January 2012 to develop a network of green hydrogen filling stations, officers have developed a project which would see the generation of green hydrogen from renewable sources, providing refuelling at 700 and 350 bar.
- 5.4.2 This project looks to demonstrate the commercial viability of this innovative technology. In addition there will be a strong focus on supporting local SMEs to develop products and services which can take advantage of the deployment of the technology here in Aberdeen.
- 5.4.3 Discussions with Toyota and Hyundai have indicated that they would be interested in deploying a fleet of vehicles in the UK, but would need to find an area which has a sufficient refuelling network in place. This type of project would help to attract large industry to the area.

5.5 Hydrogen Energy Station in Aberdeen (Heston)

- 5.5.1 The Heston project is being developed in a transnational consortium led by Logan Energy from Edinburgh. Again, this project follows up from direction provided by Full Council on 20 January 2012 to develop a network of green hydrogen filling stations.
- 5.5.2 The overall objective of the HESTON project is to provide a step change in the volume of biogas based hydrogen production in Europe, by combining Europe's molten carbonate fuel cell with innovative gas clean-up techniques, to create green hydrogen, electricity and heat. In

doing so, the project will demonstrate a route to large scale green hydrogen production which is economically favourable and technically robust.

5.5.3 Project partners want to test this approach in Aberdeen because it is seen as the leading EU City for large scale demonstration projects where industry is actively involved.

5.5.4 The project will deploy Europe's largest fuel cell, with 1.4MW of electrical capacity, and directly contributing towards the target of 100MW installed by 2015. The unit has the potential to meet the 2015 cost target of €1500-€2500/kW

5.5.5 The Hydrogen project is estimated to have a total cost of €18.3m. There are 12 partners in total within this project from across Europe, with Logan Energy from Edinburgh leading the project as co-coordinator. €9.54m will come from the FCH JU Programme. This leaves a balance of €8.76m to be sourced from partners and other sources of funding. Once other sources of funding have been explored a more detailed report will come to committee with a request for any approval of required match funding.

5.6 Proposed Delivery Mechanism of Strategic Hydrogen Programme

5.6.1 In order to deliver the future projects, it will be important to ensure that the overall Hydrogen Programme has the required Governance and operational structures to ensure a streamlined and efficient approach to the overall programme rather than what could appear to be a plethora of unrelated projects with duplicated structures. This is consistent with other complex programmes, such as the Accelerate Aberdeen Digital Programme. The Delivery structure recommended is in Appendix 1.

5.6.2 This structure is designed to ensure that there is a consistent approach to the management of the programme and that all projects feed into the same management structure and that a strategic approach is evident and ensure efficiency within all projects.

5.7 Launch of Smart Aberdeen 2020 Documents

5.7.1 Officers have prepared and published documents which promote the work of Aberdeen City Council which relates to the EU2020 objectives. This was developed to showcase the area on the EU level and to help position the region for accessing future funds.

5.7.2 As the 2014-2020 funding programme is now approaching we have a window of opportunity to launch these documents officially in Brussels and ensure that we are seen as one of Europe's leading local authorities and that the European Commission are aware of our previous performance as well as our priorities for the future.

5.7.3 With the support of Scotland Europa (Brussels Office) and Scottish Government, we have been given the opportunity to launch these documents in Brussels at a stakeholder event.

6. IMPACT

6.1 Several of the challenges of the Community Plan identified in the Single Outcome Agreement are also supported, such as: Leading the City, Being Informed, Getting Involved, Land Use and the Environment and Clean City, Transport and Connections, Prosperity and Jobs, and Aberdeen's Image.

6.2 Human Rights/Equalities/Diversity
European Policy is consistent with the Equal Opportunities Policy of the Council.

6.2 Sustainability
Aberdeen City Council has a clear contribution to make to sustainable development with an emphasis on enhances productivity through improved resource efficiency, new business opportunities in the developing market for sustainable technologies and delivering better and more efficient Council services. By attending these events, it will give us the opportunity to look at the possibilities of best practice and drawing down more funds from EU programmes to raise the quality of life through increasing economic opportunity for all on a socially and environmentally sustainable basis.

6.3 Environmental
European activities are implemented in line with the aim of achieving a quality and sustainable environment.

6.4 Social
The principles of Social inclusion underpin European cohesion policy.

6.5 Economic
European representation and inter-regional networking contributes to the City's overall effort to maximize opportunities and to promote its interests, both at home and overseas with the aim of creating a vibrant and sustainable economy.

7 Risk Management

7.1 All projects will have risk assessments undertaken prior to commencing as required by internal audit. Transnational partnership projects require detailed risk assessments as part of the application, however these focus on risk to the partnership and project rather than risk to the individual partners which must also be considered and recorded on file.

7.2 PRINCE II project principles will be followed, and this will ensure a consistent approach to risk management which is fully compliant with ACC existing policy.

8. REPORT AUTHOR DETAILS

Stuart Bews
External Funding & Policy Executive
stbews@aberdeencity.gov.uk
01224 523370

Yasa Ratnayeke
Senior Partnerships, Performance,
& Funding Officer.
yratnayeke@aberdeencity.gov.uk
01224 523807

Appendix 1

