

H2 Aberdeen – A Hydrogen Economy

23rd November 2016

Councillor Barney Crockett

Aberdeen City Council & Chairman of HyER

Aberdeen City



- Situated North East Scotland
- Geographical position on the North Sea
- 227,000 inhabitants

Early Industries



Energy Diversification

- Long term future as an **Energy City**
- Low carbon economy (not just oil and gas)
- Transferable skills – retain skilled workforce
- Supply chain development – retain and attract businesses
- Air Quality
- Carbon targets and renewables capacity

Aberdeen Hydrogen Bus Project

- £19million demonstration project
- Ten hydrogen fuel cell buses – largest fleet in Europe
- 2 separate EU funded projects – HyTransit and High V.Lo City
- Hydrogen production & re-fuelling station
- Dedicated bus maintenance facility
- Use hydrogen storage as a means of managing electrical grid constraints
- New website developed under HighVLOCity in collaboration with other bus projects

www.fuelcellbuses.eu

Project Partners & Funders





Credit Norman Adams, Aberdeen City Council

✓ Hydrogen Achievements to Date

- Ten Hydrogen Fuel Cell Buses
- ✓ - Hydrogen production and refuelling facility
- Bus Maintenance Facility

✓ Ford Transit ICE vans

✓ Renault Kangoos

✓ 4 Hyundai FCEV's

✓ 10 Toyota Mirai

✓ 2nd Refuelling Station (700 & 350 bar)

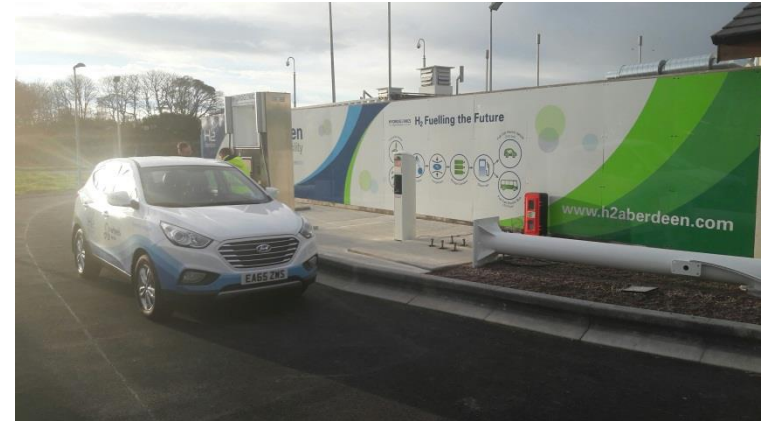


Refuelling Station



2nd Refuelling Station

- Multi-application hydrogen energy storage project
- Use excess renewable power to produce hydrogen by electrolysis
- Will have 350 and 700 bar refuelling



Bus Figures

- Total number of passengers on the 6 Stagecoach buses: 188,431
- Total KMs travelled: 216,658km
- Total KGs of H2 used: 11,325Kgs (Sept – Dec 15)
- **Average fuel consumption: 9.64Kms per KG (Sept – Dec 15)**

First Bus Comparison

- Total number of passengers on the 4 First buses: 153,029
- Total KMs travelled: 171,667 Kms
- Total KGs of H2 used: 5008Kgs (Sept – Dec 15)
- **Average fuel consumption: 13.68Kms per KG (Sept – Dec 15)**



Figure 1: The journey through the NSR
(Source: European Institute for Innovation)

Will increase the deployment of different types of hydrogen vehicles as well as look at green hydrogen and improvements to the supply chain and training.



European Institute of
Innovation & Technology



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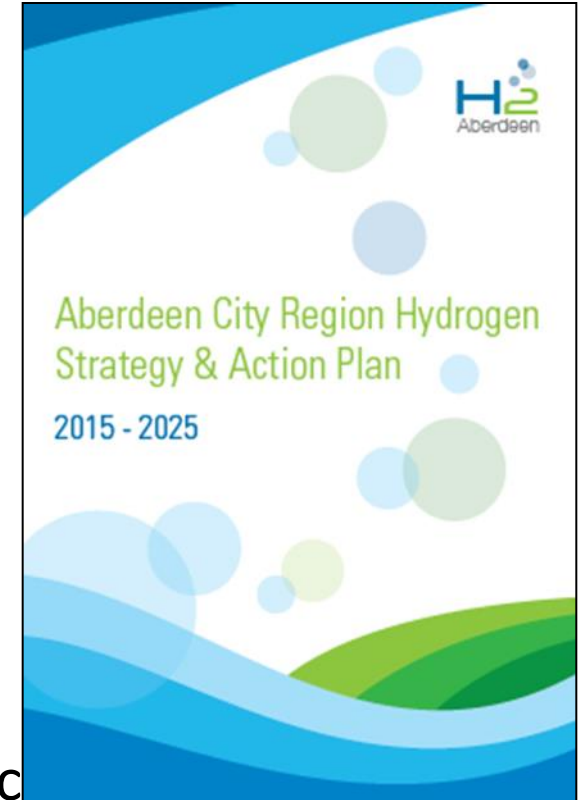
FC Train

FC Train purpose is to gather experiences and knowledge from three EU countries and convert it in a training programme for future technicians of FCH vehicles.



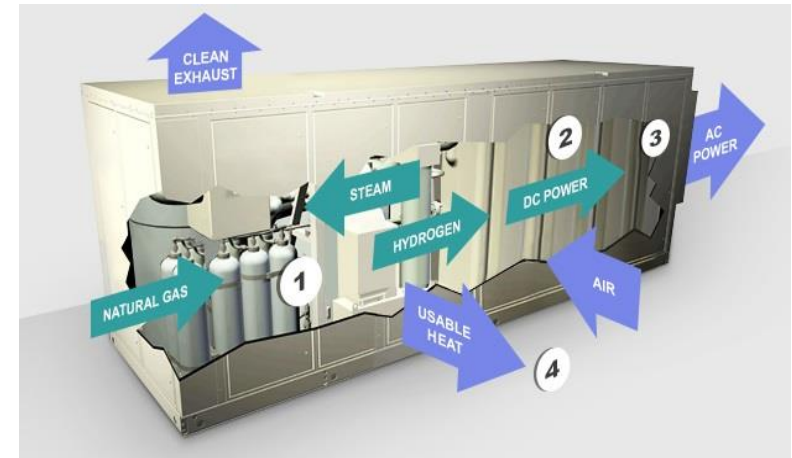
Strategic Objectives

- Promote vehicle deployments
- Expand production of renewable hydrogen
- Develop refuelling infrastructure
- Explore non-transport applications
- Supply chain / market development
- Promote greater understanding and acceptance
- Ensure a supportive policy environment



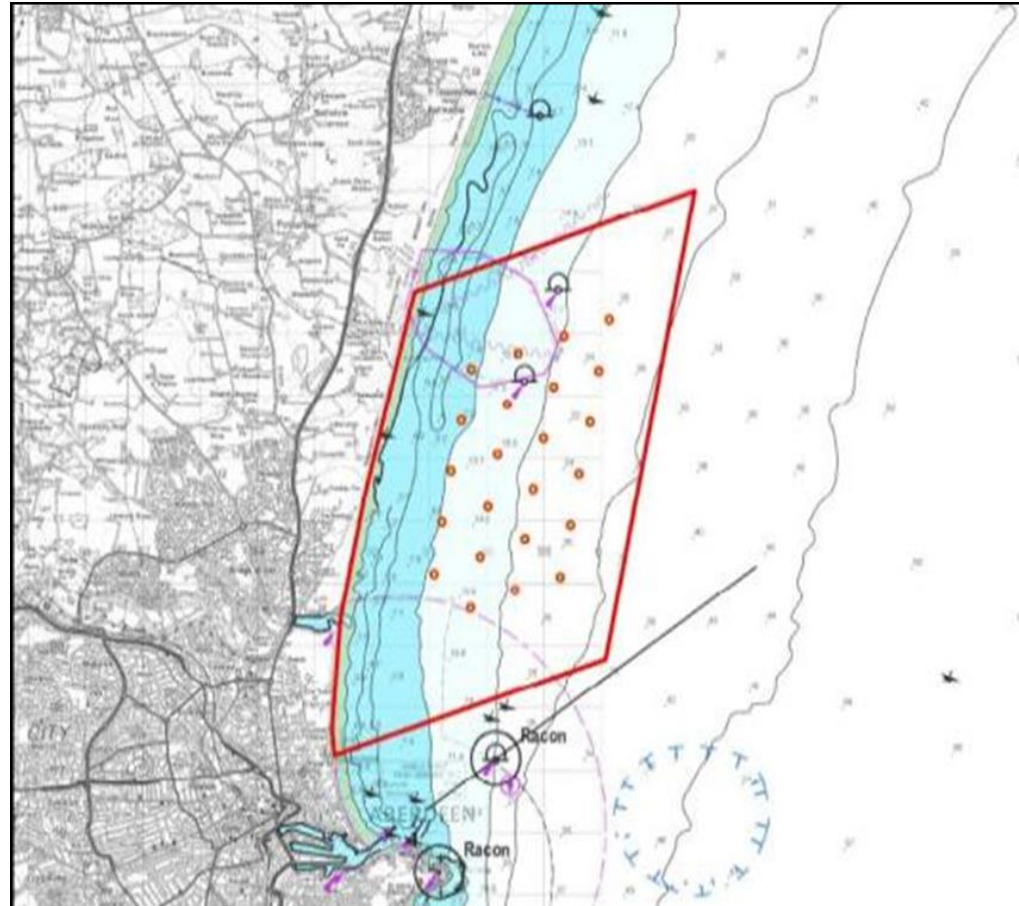
Longer Term Actions

- Further Vehicle Deployments
 - Bus fleet expansion
 - Car Club/ Public Sector Fleet Expansion
- Expand Refuelling Infrastructure/Expansion
 - new production and fuelling facilities for H₂ at the new AECC



European Offshore Wind Deployment Centre

- Ground breaking new facility currently being developed
- Joint venture between Vattenfall and AREG
- Platform to demonstrate offshore wind industry
- Objective of reducing cost generation from offshore wind
- Energy storage and grid balancing



Aberdeen's HyER membership



Hydrogen, fuel cells and electro-mobility in European regions

→ **Membership-based association of European cities and regions**

→ **21 members in 10 countries (end of 2015)**

→ **Aberdeen has the presidency since 2015**

Representing the interests of European regions and cities active in the field of hydrogen, fuel cells and electro mobility

Energy/Transport challenges: local and regional authorities will have to deliver solutions!

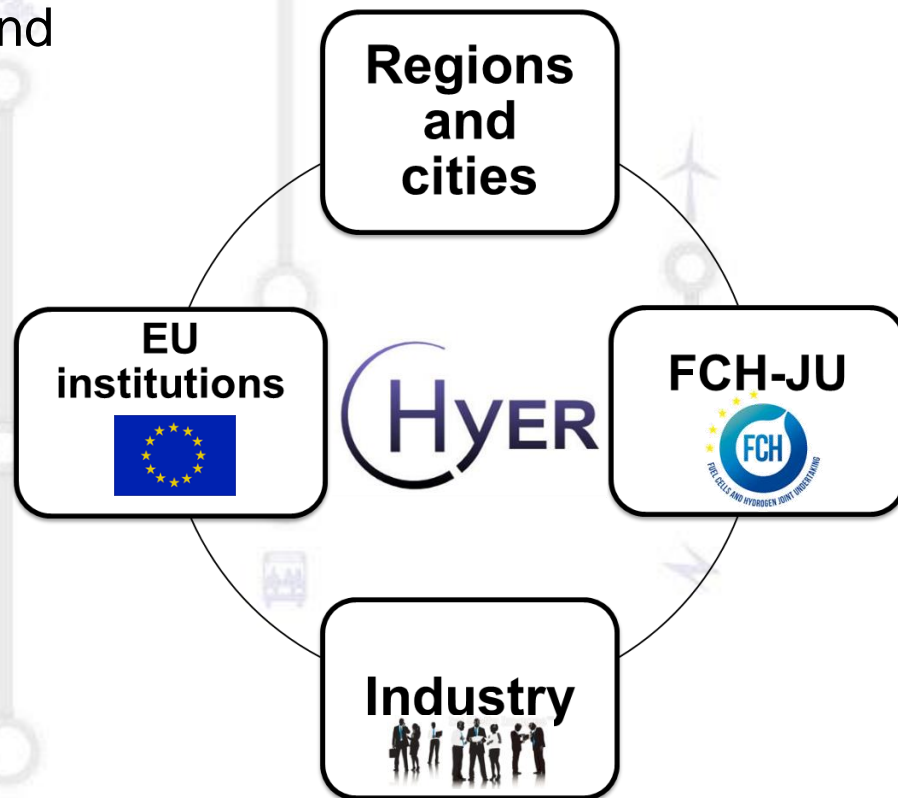


How can HyER help?



Essential to have EU regions represented on the EU level and speaking with one voice

- Enabling the share of knowledge
- Bridging the gap between regions/ EU institutions/ industry
- Representation role
- Project development



Join us! More info: www.hyer.eu / secretariat@hyer.eu

Thank you Cllr Barney Crockett

Aberdeen City Council & Chair of HyER

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