

A Hydrogen Economy for Aberdeen City Region

Amy Smith
Aberdeen City Council

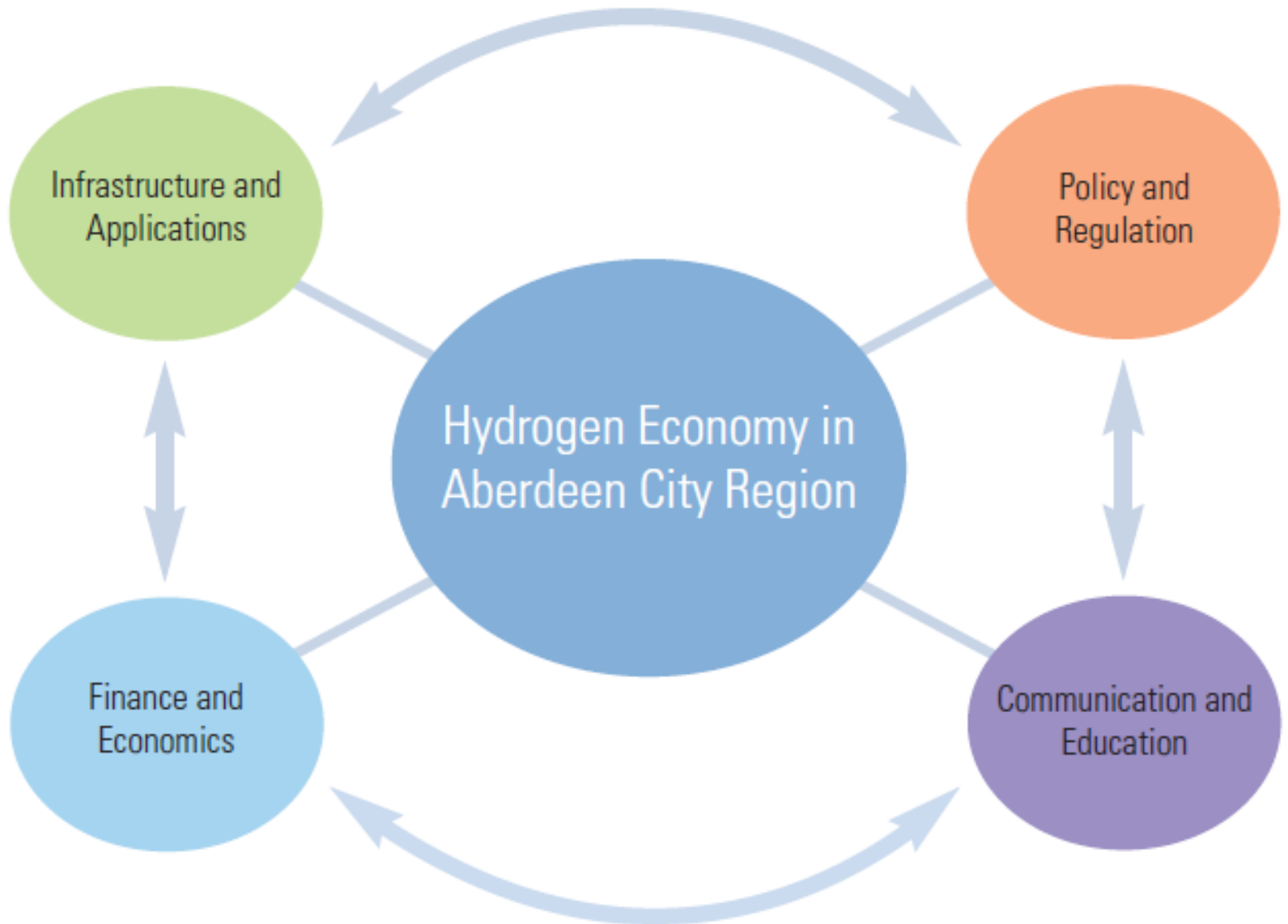


A Hydrogen Economy for Aberdeen City Region

Aberdeen City Region is a world-class energy hub leading a low carbon economy and at the forefront of hydrogen technology in Europe.

A 2020 Strategy Framework

Strategy Themes



Hydrogen Future in Scotland

“Aberdeen City Council is determined to define the image of an international 21st century energy city and to lead a leaner, cleaner industrial revolution.

Hydrogen technology and transport will play a large part in that vision and the council and its partners have a strong role to play in realising that vision.” Leader of Aberdeen City Council, Councillor Barney Crockett, May 2013



“It’s great to see Aberdeen is giving hydrogen the green light. A hydrogen strategy for the city will accelerate growth in the hydrogen energy and fuel cell market” Ed Davey, UK Secretary of State for Energy and Climate Change, at All Energy Conference, Aberdeen, May 2013.

Why hydrogen?

air around carbon cell commercial domestic economic economy efficiency
electricity energy fuel gas heat
hydrogen industry manufacture market natural network
power produce production quality quantity renewables
scotland scottish sector security significant simply storage stored
system technology transport used vehicles world

The Telegraph

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EDF paid £3 million to shut down Scottish wind farm

One of the Big Six energy companies has been paid nearly £3 million to shut down the turbines of a new wind farm because the National Grid did not want its electricity, the Daily Telegraph can disclose.

Wind farms paid £30m to shut down during high winds

Energy minister Michael Fallon orders wind farms to cut compensation charges as figures show they are paid millions for turbines to stand still in stormy weather



The Fallago Rig wind farm has attracted nearly £3 million of constraint payments in only six months Photo: Alamy

Sustainable Economic Growth

- The energy city – Leading a low carbon economy
- Initiating hydrogen infrastructure in Scotland
- Diversify existing energy industry - supply chain
- Transferable skills –Oil & Gas
- Increase renewable energy penetration



Carbon Reduction

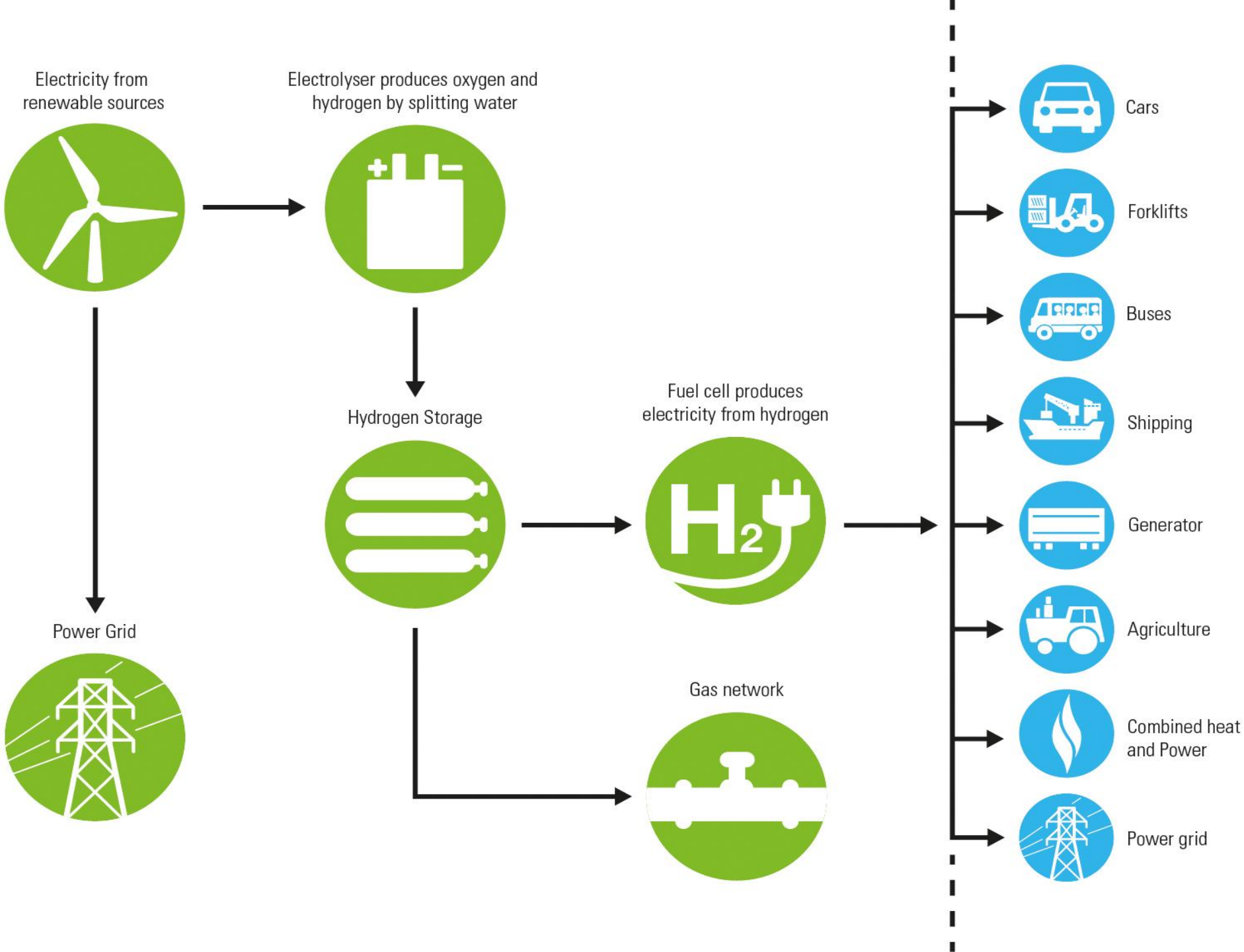


20% CO₂ reduction by 2020



42% ghg reduction by 2020







The Aberdeen Hydrogen Bus Project

Emma Watt

City Development Executive

Aberdeen City Council, Scotland, UK



- Project Overview
- The Funders & Partners
- The Buses
- The infrastructure – re-fuelling & maintenance
- Project operations - learning from the project, data collation, technology feasibility

Project Overview

- Operate 10 hydrogen fuel cell buses over a 3 year project period in Aberdeen
- Build a state of the art hydrogen production & re-fuelling station using cutting edge technology
- Prepare a maintenance facility where the buses can be serviced & maintained
- Use hydrogen storage as a means of managing electrical grid constraints

Project Funding

- £19 million budget
- Contributions from:
 - Fuel Cell & Hydrogen Joint Undertaking (Hytransit & Highvlocity projects)
 - Technology Strategy Board
 - Aberdeen City Council
 - First
 - Stagecoach
 - Scottish Government
 - Scottish Enterprise
 - Scottish Hydro Electric Power Distribution
 - Scotland Gas Network



ABERDEEN
CITY COUNCIL



The Scottish
Government



BALLARD



Scottish Enterprise



VANHOOL



TRANSPORT
SCOTLAND
The Scottish Government



fuel cells & hydrogen for sustainability

Technology Strategy Board
Driving Innovation

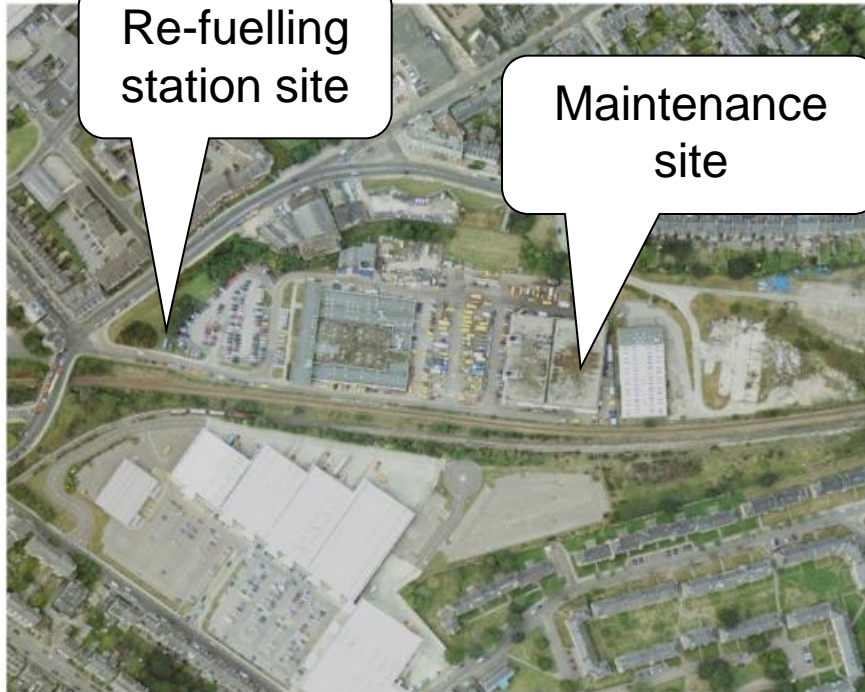


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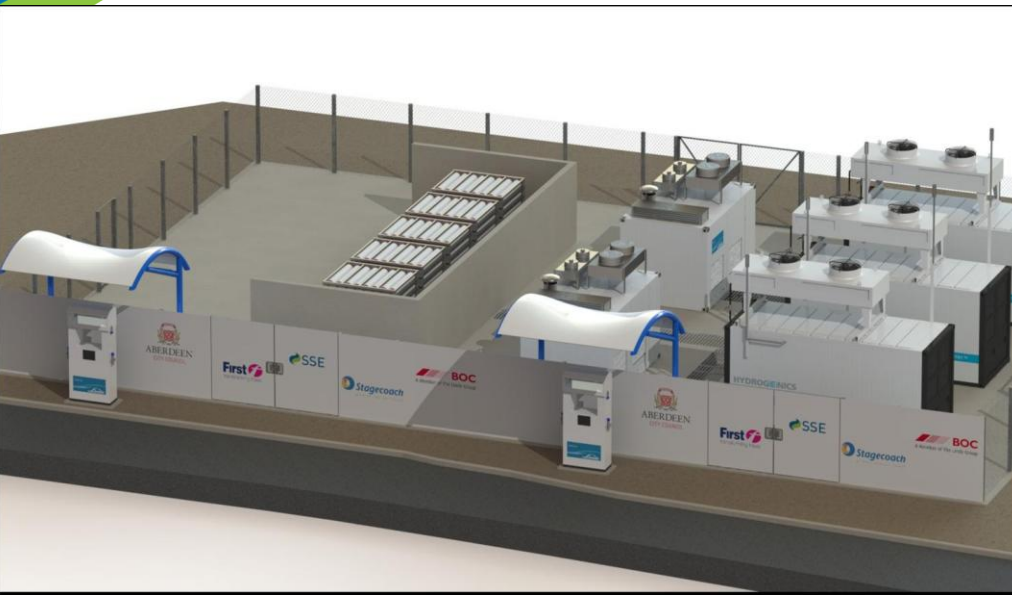
Infrastructure



Kittybrewster:

- Council owned site
- Currently used for Council waste & fleet vehicles
- 24 hour security
- City centre location
- Accessible
- Meets bus operator & BOC requirements

Refuelling station



The project today

- Tenders for civil contractor (re-fuelling) and structural & electrical contractor (maintenance)
- Operational planning
- Health & Safety
- Marketing & Communications

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What next?

- Aberdeen Hydrogen Bus Project delivery
- Strategy (Aberdeen & Scotland) – Action Plans
 - Supply Chain Development
 - Green H₂ Production
 - 2nd Refuelling Station (700 bar)
 - Further roll-out of FCEVs, Car Club, Fleet (e.g. two HICE transit vans arriving 2014)
 - Raising Awareness, Schools Hydrogen Challenge
- Large Scale Bus Commercialisation Study

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