Hydrogen Corridor 2020

An Innovative Transport Initiative in North East Scotland
aka

HyLand Express Route 1 – HyLANDER I

Endorsed by
Why Hydrogen?

- Hydrogen is the stuff of the universe
- It won’t run out ..... ever
- The seas around us are full of it
- Hydrogen can be produced by electrolysis of water using surplus renewable energy
- In HFCVs, the only emission is clean water
- In H-ICEs, tailpipe emissions are near-zero
- Pound for pound, H2 has 3 times the energy density of diesel – 143MJ/kg vs 46.4MJ/kg
Scottish Govt Targets

EU: 20% renewable energy by 2020
UK/Scotland: GHG emissions reduction 80% by 2050

Scotland -
• 20% renewable energy by 2020
• 50% renewable electricity by 2020 (8GW)
• 11% renewable heat by 2020
• 10% green transport fuel by 2020
HyFuture 2008 report ..... 

- It is anticipated that the majority of hydrogen generated will be used in the transportation sector which is one of the highest contributors to CO$_2$ emissions and poor air quality.

- Actions that encourage large-scale installation of renewables and demand for low carbon transport will support the commercialisation of renewable hydrogen.
HyFuture key points

- transportation sector
- one of highest contributors to CO$_2$ emissions
- poor air quality

- large-scale installation of renewables
  +
- demand for low carbon transport
  =
- commercialisation of renewable hydrogen
HyLANDER 1

- Aberdeen to Inverness via Peterhead
- Total distance 150 miles each way
- Early mover project to stimulate investment in hydrogen / fuel cell transport
- 3 hydrogen refuelling stations – Aberdeen, Peterhead, Inverness
- Commercial fleet operators will lead transition
- Stagecoach / FirstGroup / Royal Mail
- Integral part of UK HyNet
UK HyNet

5 active regions with different, local projects and activities:

• Scotland
• NE England
• E & W Midlands
• S Wales
• London
15.09.09 Scotland’s Hydrogen Future conference
HyLANDER 1 partners

- Aberdeenshire Council
- Aberdeen City Council
- Highland Council
- SHFCA
- Stagecoach Bluebird
- FirstGroup
- Royal Mail
- StatOil Hydro
- Air Products
- BOC Linde
- University of St Andrews
- University of B’ham
- FuelCellEurope
- CENEX
- Microcab
- Proton Motor GmbH
- Alexander Dennis
- H2 Logic
- TUV NEL
- Intelligent Energy
## Applications

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Public transport – City buses

Main benefits
For passengers:
No emissions
Very low noise level
  internally and externally
Low vibrations
Smooth acceleration, no gear shifting

For bus operators:
50% more efficient operation
  than comparable Diesel-powered bus
Brake energy recovery
Low-maintenance electric drive technology with
48kW fuel cell
Commercial vehicles
Royal Mail H-ICE post vans
Commercial Vehicles
Royal Mail Fuel Cell post van

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Municipal / Utility vehicles / Leisure
Versatility ...
Refuelling – no big deal
Refuelling at Birmingham Uni

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Hydrogen from renewables
Hydrogen from renewables

Hydrogen can be produced from any renewable resource, eg. wind, solar, marine, bio-wastes

A message for the renewables industry ......
The Future is Hydrogen
Thank you for listening

Tom Read

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