Building the demand side: Fuel cells in the postal service industry

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FuelCellEurope

2009 General Assembly of the Fuel Cells and Hydrogen Joint Undertaking

Fuel Cell Europe

Royal Mail

Agenda

- Fuel cells in postal services: Case studies
- Royal Mail, PostEurope and FuelCellEurope initiative
- Example of Royal Mail's Hydrogen Strategy:
  - Context
  - Targets and challenges
- Conclusion: Opportunities for enhancing cooperation between the postal and the fuel cell industry

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Fuel cells in the postal industry: Case studies

- **USPS**
  - CHP plant delivered in USPS processing and distribution facility in Anchorage, Alaska
  - USPS operating Hydrogen3 min-vans since 2006
  - USPS operating Chevrolet Equinox since 2008
- **DHL Express Japan:** Daimler F-Cell vehicle operated in very dense area of Tokyo with very frequent stops
- **FedEx Canada**'s facility located at the Toronto International Airport: Hydrogenics fuel cell powered forklift truck
- **Royal Mail** initiated partnership involving CENEX, PostEurope and FuelCellEurope to develop a universal design specification for a HFC Car Derived Van

Royal Mail, PostEurop and FuelCellEurope initiative

- March 2009: Royal Mail, PostEurop and FuelCellEurope joined forces:
  - ❑Working with CENEX for the development of a universal design specification for hydrogen fuel cell postal vans.
  - ❑To engage with OEMs to accelerate the development of hydrogen fuel cells postal van
  - ❑To accelerate a broader adoption by other postal operators
- Summer 2009: FuelCellEurope establishes Customer Application Group Postal Services. Discussions with Poste Italiane, Deutshe Post, La Poste (FR)
- 15 Sept. 2009 : Joint task force established to develop joint project on fuel cell delivery vehicles across Europe
- 22 Oct. 2009: Project concept presented to other postal operators

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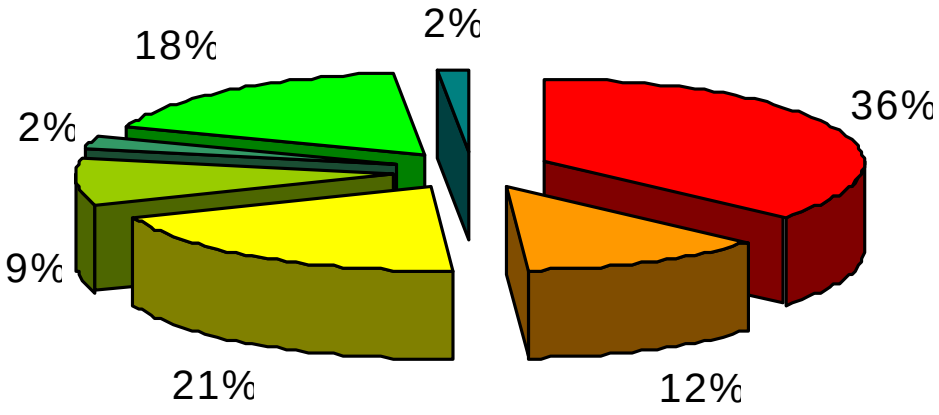
Context – Royal Mail CO2



Scope 1 Business road

Scope 1 Natural gas and oil

Scope 2 Grid electricity

Scope 3 Business air & rail

Scope 3 Personal travel (on business)

Scope 3 Commuting to work

Scope 3 Business mail in privately owned vehicles

360,000 tonnes CO2 from fleet

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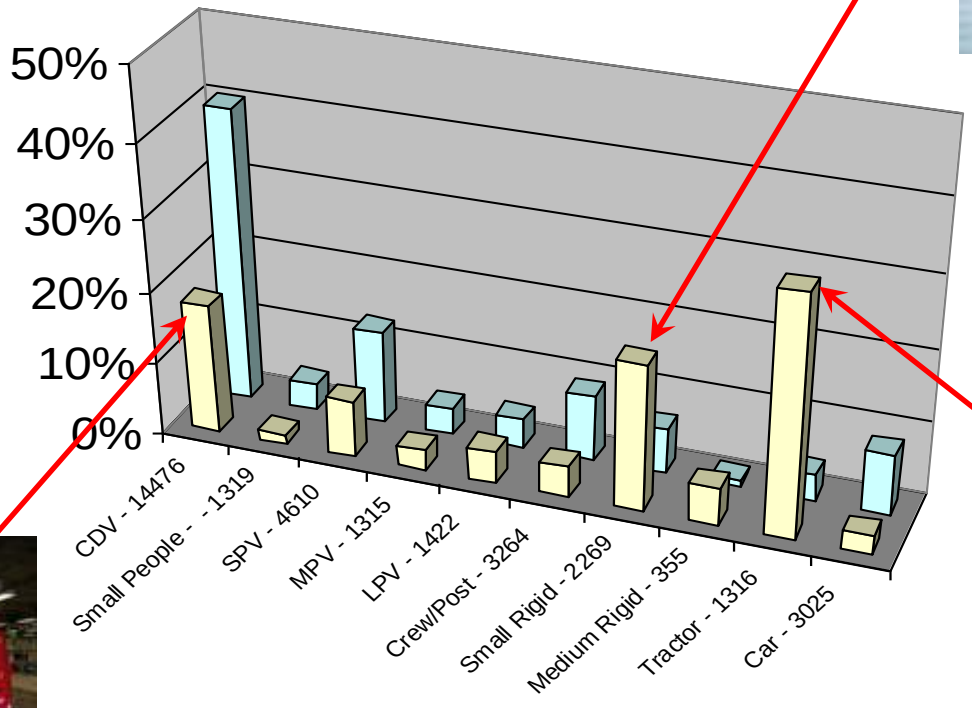
Context – Vehicle CO_2



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Targets

Carbon neutral London by 2012

Including 50% CO_2 Tailpipe Reduction

Carbon neutral business wide by 2015

50% CO2 Reduction

making red vans green • making red vans green •

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What's Next - 2012 Target

- Carbon Neutral – 50% of 2004/05 emissions
- Target 2012 2015
- Vehicles 2,100 24,000
  - 'as is' 413 2171
  - Low Co2 556 1107
  - Hybrid/CBG 229 12288
  - Electric 884 8669

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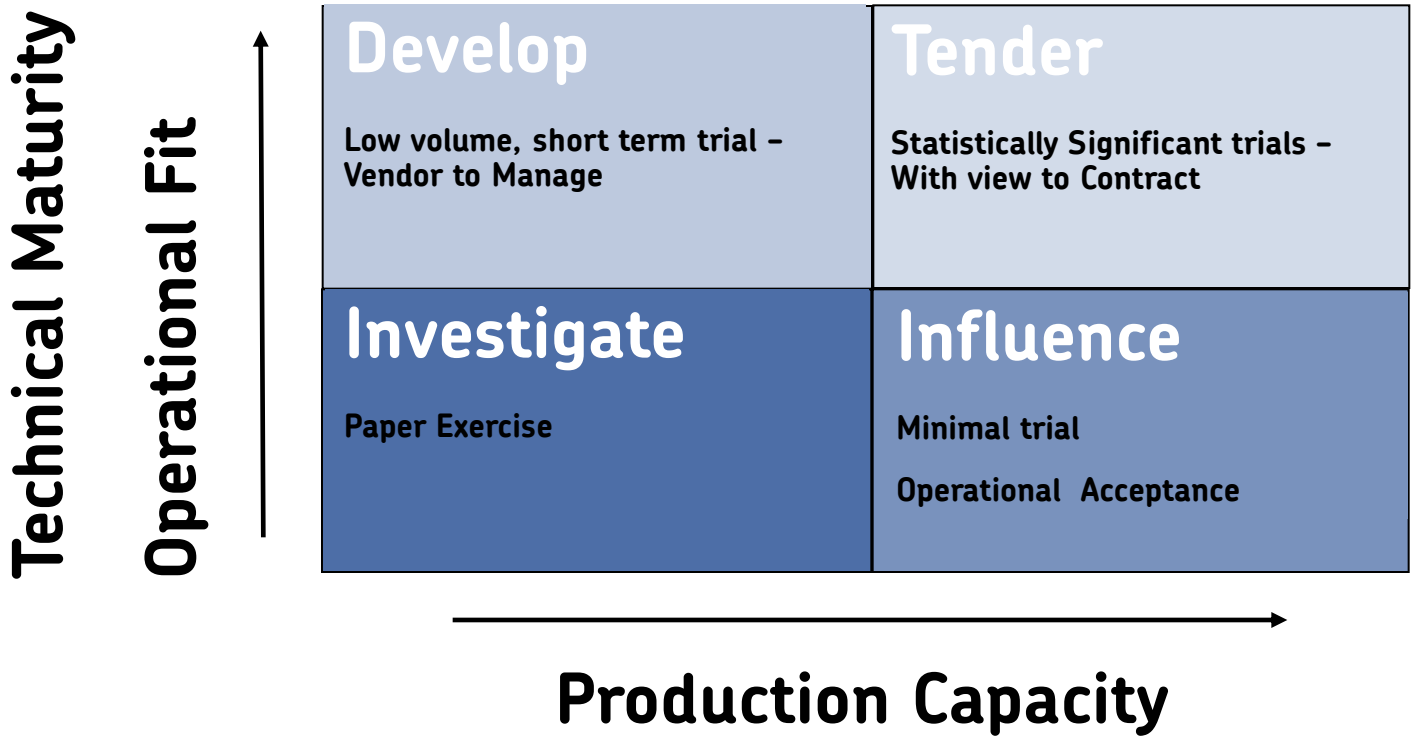
h2 ? - Product Evaluation



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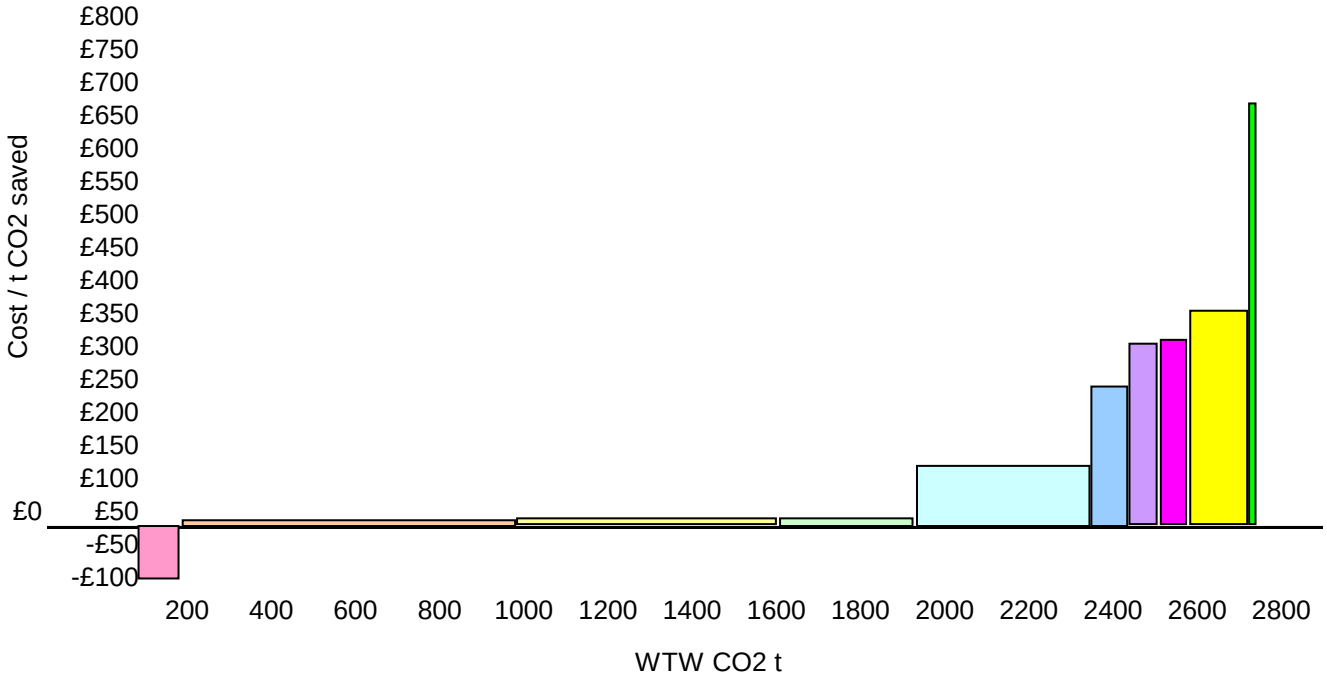
h2 ? - MAC Curve

		t CO2	£ / t CO2
Trailer Aero Kit		71	-111
LGV Tractor Methane	†	898	£1
LGV Rigid Methane	†	611	£3
LGV 7.5t Methane	†	317	£18
LGV 7.5t Hybrid		404	£96
LGV 7.5t e		47	£221
CDV Methane		76	£274
CDV e		60	£280
LGV Rigid Hybrid		147	£327
CDV Hybrid - Full		11	£651

† Technology not yet in production

Vehicle Technology MAC Curve - WTW



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Challenges

- Infrastructure
- Reliability
- Availability
- Cost

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Conclusion:
Opportunities for enhancing cooperation between the postal and the fuel cell industry

- **Energy efficiency and carbon mitigation at core of the postal industry's future**
- **Collective needs of the postal industry are huge in terms of delivering vehicles, material handling equipment and back-up power.**
- **Most equipments and vehicle fleets operate in a finite environment requiring a lesser capital intensive hydrogen infrastructure to start.**
- **Dr Martin Blake, the Royal Mail's Head of Sustainability stated**

  "We clearly see hydrogen fuel cell technology as the future means of small and medium vehicle propulsion in the not too distant future, it is now just a question of seeing which one of the major motor manufacturers can bring such fuel cell commercial vehicles to market in large numbers and reasonable prices first".

- **Major OEM and leading fuel cell players should engage in this kind of initiative: join forces together with us and make sure companies such as Royal Mail get the necessary level of support they deserve !**

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