

# HYDROGEN LONDON

A GLOBAL CENTRE FOR  
HYDROGEN AND  
FUEL CELL VEHICLE  
ACTIVITY

**MAYOR OF LONDON**

# Hydrogen London is...

HYDROGEN  
LONDON

Delivering solutions for a clean and sustainable London while securing jobs, investment, growth and environmental benefits. Ensuring London is a global centre for the development, deployment and use of hydrogen and fuel cell technologies.



MAYOR OF LONDON



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LONDON

AIR  
PRODUCTS

AURIGA energy

Heathrow  
Making every journey better

Camden

Transport  
for London

arcola  
energy

HYUNDAI  
NEW THINKING.  
NEW POSSIBILITIES.

cella

ALSET  
HYDROGEN MOBILITY

UK HFCFA

TOYOTA

elementenergy

EES  
Euro Energy  
Solutions Ltd

FUEL CELL  
SYSTEMS®

Imperial College  
London

University of  
Hertfordshire  
UH

Intelligent  
Energy

ITM POWER  
Energy Storage | Clean Fuel

Logan Energy limited  
hydrogen technologies

METROPOLITAN  
POLICE  
Working together for a safer London

UCL ENERGY  
INSTITUTE

riversimple

RP&P  
Energy Services Ltd

LowC<sup>VP</sup>  
Low Carbon Vehicle Partnership

neohe™

Department  
of Energy &  
Climate Change

London South Bank  
University

Institute for Sustainability

(MICRO:CAB)®

Southwark  
Council

MAYOR OF LONDON



## Mayor of London supporting policy

- 60% carbon reduction target by 2025.
- Mayor's London Plan – Support and encourage the widespread use of innovative energy technologies.
- Low Emission Zone and proposed Ultra Low Emission Zone.
- New Ultra Low Emission Vehicle Discount.
- Congestion charge discount.
- 1,000 GLA Group LEVs delivering London's services by 2016.
- Taxi and Private Hire Age Standards.
- Zero emission taxi by 2018.



## What has been achieved so far



FCHJU co-funded project facilitating the commercialisation of hydrogen transport in London and Copenhagen.



### Deployment to date:

- One publicly accessible refuelling station in west London near Heathrow Airport
- Five operational taxis (2500 miles covered and 111 journeys during Olympics and Paralympics)
- Upgrade to the Heathrow refuelling station from 350 to 700 bar



### Next steps:

- Deployment of Hyundai ix35 vehicles deployment





## What has been achieved so far

Clean Hydrogen In European Cities Project integrating FCH buses in daily public transport operations and bus routes.

It is the first time a whole route has been fully operated by Hydrogen powered buses in the UK with 8 buses running on the RV1 route in London.



# CH<sub>2</sub>IC



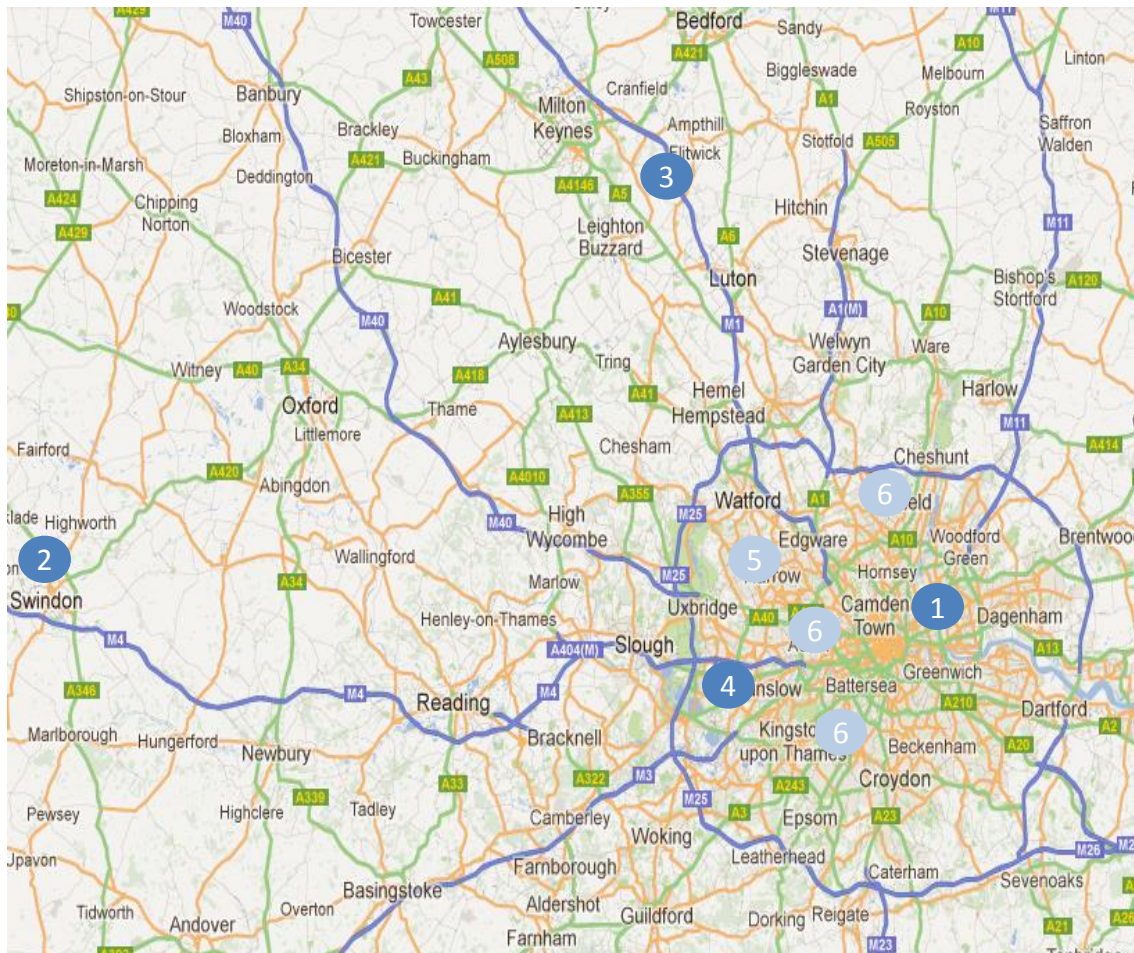
Aiming to deliver a publicly-accessible network of hydrogen refuelling stations in London:

- One new 700 bar publicly accessible refuelling station
- A number of Hyundai ix35 vehicles
- A number of vans deployed by Revolve Technologies and operated by Commercial Group



## A Strategic Network of Hydrogen Refuelling Infrastructure in the Capital

Taking the necessary steps to ensure that London's refuelling infrastructure is sufficiently well developed to enable the commercial launch of FCEVs from 2015.



Key:		
	Existing HRS	Planned facility
1	Temple Mills Bus station	350 bar, 320kgH <sub>2</sub> /day
2	Swindon HRS (Honda)	700 bar
3	Millbrook	700 bar, SAE J2601
4	Hatton Cross, Heathrow	700 bar, SAE J2601 (from 2013)
5	LHNE station in Hendon/Sainsbury's	700 bar, SAE J2601
6	Three new stations by 2015/16 (illustrative)	Green H <sub>2</sub> supply



London Schools Hydrogen Challenge



LONDON SCHOOLS  
HYDROGEN CHALLENGE

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**THE RACE IS ON**



HYDROGEN  
LONDON

SUPPORTED BY  
MAYOR OF LONDON





## Collaborations



UK H<sub>2</sub> Mobility

- Collaborative project evaluating the potential for hydrogen FCEVs to provide environmental and economic benefits to the UK.

Bringing together industrial participants, three UK Government Departments (OLEV, DfT, BiS), the Devolved Administrations and the GLA to develop a business case and strategic plan for the commercial roll-out of the technology from 2015.



Representing the UK Hydrogen and Fuel Cell Industry

- UK Hydrogen and Fuel Cell Association acts on behalf of its members to accelerate the commercialization of fuel cell and hydrogen energy technologies. Provides a respected and authoritative point of contact and a clear, informed and up-to-date view on research, development and demonstration.

## Collaborations



GREATER MANCHESTER  
HYDROGEN PARTNERSHIP

- Hydrogen London Partnership's activities have been an example for other areas across the UK with Manchester creating a partnership based on the Hydrogen London Partnership model.



- A lot of London's projects have been possible through successful funding applications. The GLA is currently coordinating the HyFIVE project and we aim to build on existing successes as well as continue our fruitful collaboration with the FCHJU.



# Hydrogen For Innovative Vehicles

- **15 EU Partners**
- **110 Vehicles**
- **6 Refuelling Stations**

## **INTRODUCTION**

### **Hydrogen For Innovative Vehicles (HyFIVE)**

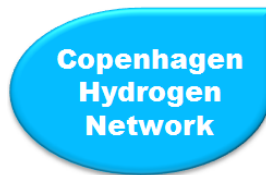
- ❑ Bringing together 15 partners across Europe.
- ❑ Moving key regions in Europe from a demonstration to a market initiation phase through the deployment of advanced Fuel Cell Electric Vehicles (FCEVs).

### **Hydrogen For Innovative Vehicles (HyFIVE) Aims**

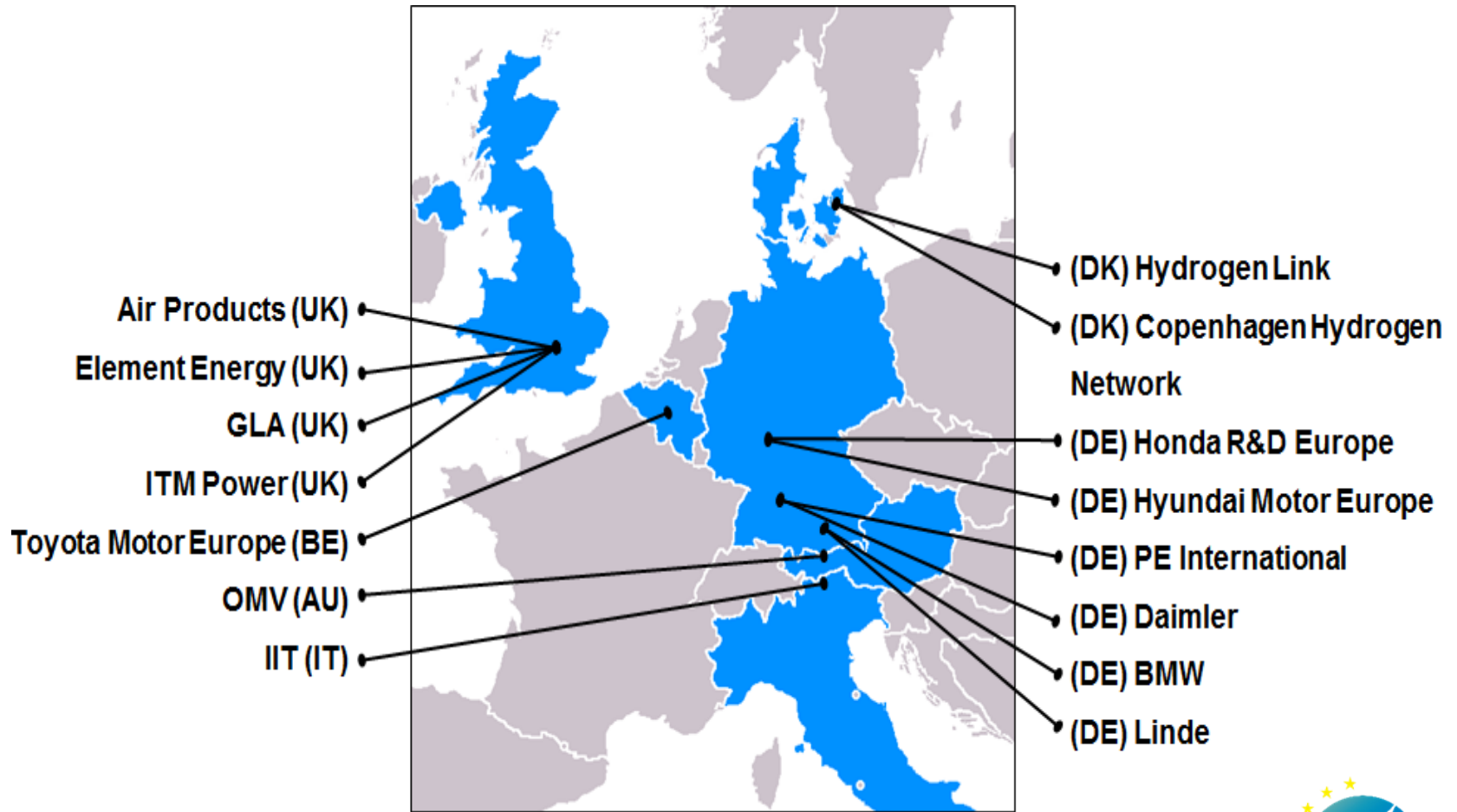
- ❑ Deploy up to 110 fuel cell electric vehicles (FCEVs) from the five global automotive companies who are leading in their commercialisation (BMW, Daimler, Honda, Hyundai and Toyota).
- ❑ Deploy 6 new stations and linking them with 12 existing stations supplied by Air Products, Copenhagen Hydrogen Network, ITM Power, Linde and OMV.



# GREATER LONDON AUTHORITY



## CONSORTIUM



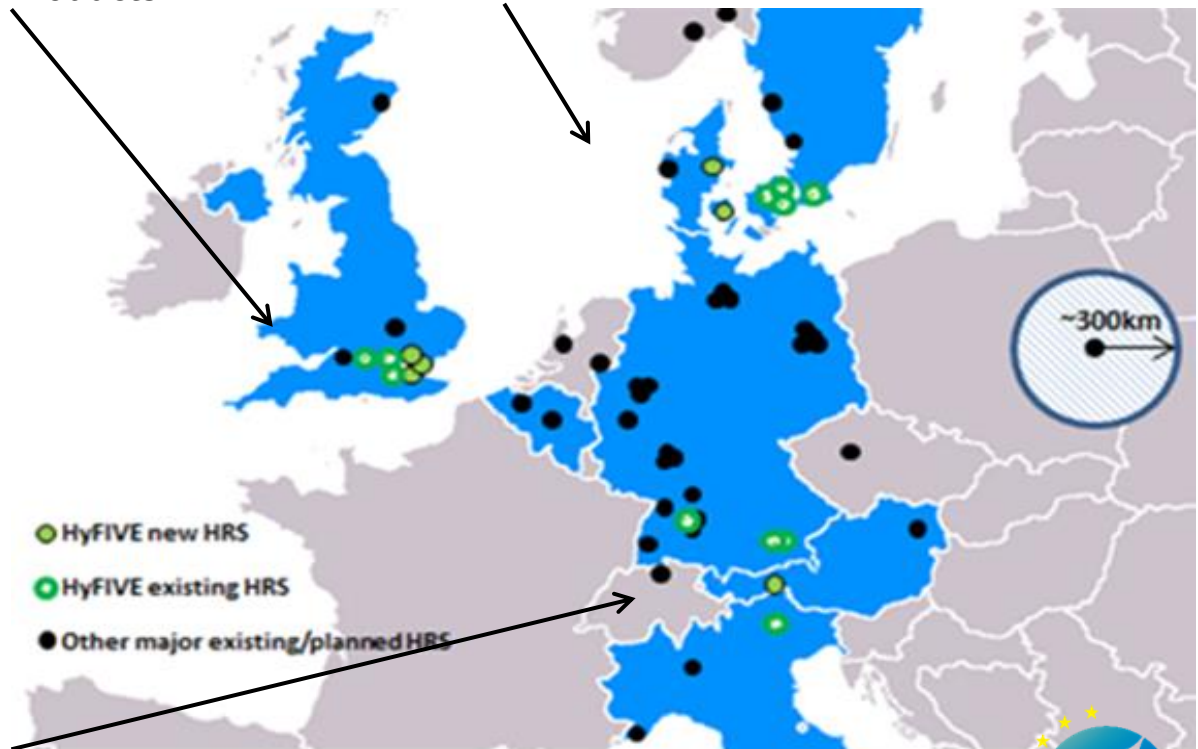


# REFUELLING INFRASTRUCTURE



**London Cluster:**  
ITM Power  
Air Products

**Copenhagen Cluster:**  
CHN (Copenhagen Hydrogen Network)



**Southern Cluster:**  
LINDE  
OMV

# VEHICLE DEPLOYMENT



DAIMLER

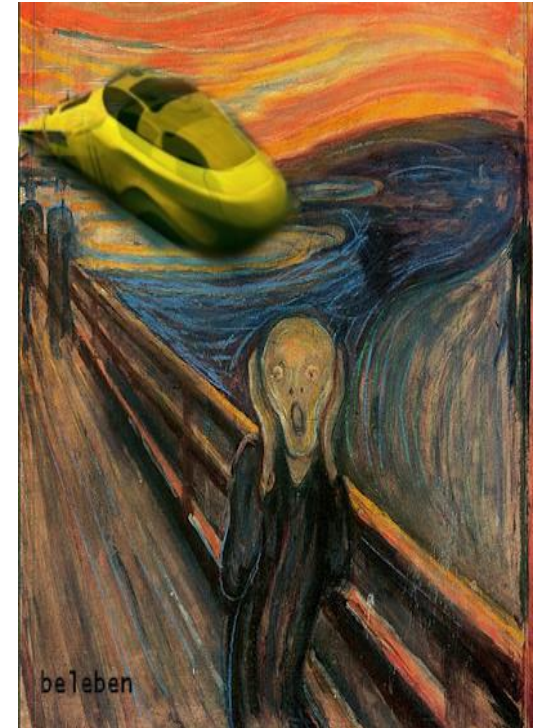
**HONDA**  
The Power of Dreams



**TOYOTA**









## Simona Webb

Project Coordinator  
Hydrogen for Innovative Vehicles (HyFIVE)

**Tel:** +44 (0)20 7983 4878

**Mobile:** +44 (0)7769 281971

**Email:** [Simona.Webb@london.gov.uk](mailto:Simona.Webb@london.gov.uk)

[www.hyfive.eu](http://www.hyfive.eu)