

UK Hydrogen and Fuel Cell Association's

Products and Services Matrix



UK HFCFA

		Anglo American	Air Products	Ames Goldsmith Ceimig	Baker Botts (UK) LLP	BayoTech	BOC	BP	Clean Power Hydrogen Group Ltd	COFTEC	Diffusion Alloys	Elgar Middleton	HIROC	Ingersol Rand	ITM Power	Johnson Matthey	JRE Precision Limited / H2 Technology	Kiwa Ltd	Logan Energy	Low Dee	Luxfer Gas Cylinders	Marubeni Europower	NanoSUN	Net Zero Energy Development	Northern Valve & Fitting Company Ltd	Petrofac Services	Powerhouse Energy Group, PLC	Proium Green Solutions	Reynolds Logistics Ltd	Siemens Financial Services	Swagelok Manchester	TFP Hydrogen Products	Technical Fibre Products Ltd	TP Group plc	ULEMCo Ltd	University of Ulster				
Hydrogen Production	Electrolysis	•	•		•		•	•	•		•	•			•		•	•								•		•				•	•							
	SMR		•		•	•	•	•			•					•	•	•								•		•					•							
	Biomass and biogas reforming		•		•	•					•						•	•								•						•								
	Hydrogen from waste		•		•	•					•						•									•	•								•					
	Solar thermal				•																					•														
	Other hydrogen production		•		•			•	•		•		•			•	•					•				•						•								
Fuel handling	Hydrogen in the gas grid				•		•					•	•	•		•	•								•		•				•									
	Fuel systems		•		•			•						•			•	•	•		•					•						•								
	Fuel processing		•		•			•						•			•	•	•							•						•				•				
	Tube trailers and storage tanks		•		•		•	•				•		•	•		•	•	•		•					•					•				•					
Refuelling infrastructure	On-site/permanent		•		•		•	•		•		•	•	•		•	•	•		•					•		•				•									
	Mobile		•		•		•			•		•	•			•	•	•		•									•			•								
Control and equipment	Control systems				•									•			•	•	•						•						•				•					
	Test/sensor equipment and facilities				•												•	•	•		•				•						•				•					
	Electrical systems				•														•						•										•					
Investment	Venture capital	•			•																•																			
	Project investment and other funding	•			•		•														•						•			•										
Stationary Applications	Domestic CHP				•											•	•															•								
	Commercial CHP				•												•	•	•													•				•				
	Industrial and large-scale CHP				•			•									•	•	•							•					•				•					
	Off-grid solutions		•		•			•									•	•	•		•						•					•				•				
	Hydrogen combustion for industrial applications				•		•	•									•	•									•					•								
	Uninterruptible Power Supplies (UPS)				•			•											•		•										•				•					
	Dedicated power generation				•			•									•	•	•		•			•		•														
	Large permanent APUs				•												•	•						•																
Transport Applications	HGVs	•			•		•						•	•			•			•		•	•						•			•	•		•	•	•			
	Materials handling vehicles				•		•						•	•			•			•		•	•								•		•	•		•	•	•		
	Automotive/FCEV design				•		•						•	•			•			•		•	•								•		•	•		•	•	•		

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Transport Applications <i>continued</i>	Automotive/FCEV engine modelling			•		•		•					•			•																					
	Autonomous vehicles (land, water, air)												•			•				•														•			
	Ships												•			•				•			•										•	•			
	Trains												•			•	•			•			•											•	•	•	
	Buses												•	•		•	•			•			•	•									•	•	•	•	
Sector Support Functions	Project management						•		•								•	•						•										•	•		
	Feasibility studies	•	•				•	•							•		•	•						•										•	•		
	Technical services						•	•							•		•	•					•	•										•	•		
	Legal services				•																																
	Professional services								•								•																				
	R&D and education																•	•		•																•	
	Health and safety																	•		•				•										•	•		
Studies	Market analysis	•																						•		•											
	Socio-economic study	•															•							•		•											
	Techno-economic study	•															•	•						•		•								•			
Misc.	Drones															•				•		•														•	
	Integrated energy systems	•			•			•					•			•	•	•		•				•	•	•								•			
	Energy storage				•		•	•					•			•	•	•		•			•		•		•							•	•		
	Prototyping															•		•		•														•	•		
	Portable power applications				•											•				•														•			
	Materials/components/coatings			•															•														•	•			
	Power to gas				•								•	•	•	•	•	•						•		•							•				
	Integration with renewables				•		•	•					•	•	•	•	•	•						•		•							•	•			
Additional Notes <i>Please see Page 4</i>		•	•	•			•	•				•		•	•	•		•				•	•			•											

Additional Notes

Air Products	All services associated with the design, engineering, production, and supply of industrial gases.
Ames Goldsmith Ceimig	Raw material/Component for PEM electrolyser & Fuel Cell
Baker Botts	Please note we can help all marked with an X with regards to legal services only.
Clean Power Hydrogen Group Ltd's	Membrane-Free Water Electrolysis
COFTEC	Water – RO and Demineralisation treatment and supply
Ingersoll Rand	Hydrogen compression
Johnson Matthey	Hydrogen production catalysts, plating salts for bi-polar plates, membrane electrode assemblies for hydrogen fuel cells, catalyst coated membranes for PEM electrolysers and new technologies for Low Carbon Hydrogen production. Other hydrogen production - ATR + LCH (GHR+ATR)
JRE Precision Limited / H2 Technology	Gas and Hydraulic Components including regulators, valves, filters, manifolds and special application.
Kiwa	Feasibility and FEED studies; analysis of supply and demand matching; optimisation of green electricity use for electrolysis; optimisation of storage capacity for demand / supply.
Low Dee	PEM fuel cell membranes
Northern Valve & Fitting Company Ltd	NVFCL can supply the infrastructure to assist wherever hydrogen is stored and transported; valves, fittings, tube, filters, check valves, PRV's etc. Please ask for details.
Petrofac Services	Operations and maintenance services Maintenance management systems Concept design Front-end engineering design EPC
Reynolds Logistics	Logistics

Swagelok Manchester	<p>Our services include:</p> <ul style="list-style-type: none"> • Custom built assemblies, panels and frameworks - unique fabrications such as filling, distribution, priority, control panels, tubing manifolds, enclosures and components specific to your fluid system needs • Equipment and orbital welding services • On site evaluation and advisory services • Application engineering design support • Training and education <p>Our products include:</p> <ul style="list-style-type: none"> • Swagelok tube fittings and tubing up to 400bar • Flange adapters • FK series medium-pressure fittings and tubing up to 700 bar • FKB series medium-pressure ball valves up to 700 bar • All metal hoses • Pipe fittings • Assembly-by-torque (AbT) fittings • VCO® O-ring face seal fittings • VCR® metal gasket face seal fittings • AFS & SK Ball Valves • Pressure gauges and transducers
Technical Fibre Products Ltd	<p>Technical Fibre Products produce wet-laid nonwoven fabrics from advanced fibres. Fabrics made from carbon fibre are widely used as the base material for gas diffusion layers used in fuel cells and electrolysers.</p>
University of Ulster	<p>HGVs / Materials handling vehicles / Automotive / FCEV design:</p> <ul style="list-style-type: none"> • Licensing of breakthrough safety technology of explosion free in a fire TPRD-less tanks for different applications <p>Ships / Trains / Buses:</p> <ul style="list-style-type: none"> • Hydrogen safety engineering • Licensing of breakthrough safety technology of explosion free in a fire TPRD-less tanks for different applications <p>R&D and education / H&S:</p> <ul style="list-style-type: none"> • Research to close knowledge gaps and address technological bottlenecks in hydrogen safety • Consultancy by hydrogen safety engineering of inherently safer hydrogen systems and infrastructure • Licensing of breakthrough safety technology of explosion free in a fire TPRD-less tanks for different applications • Short courses on hydrogen safety tailored for customer needs • Postgraduate Certificate in Professional Development (Hydrogen Safety) by distance learning: <ul style="list-style-type: none"> ○ Module ENE821 Principle of Hydrogen Safety, ○ Module ENE825 Hydrogen Safety Technologies <p>Drones / Energy storage / Prototyping:</p> <ul style="list-style-type: none"> • Licensing of breakthrough safety technology of explosion free in a fire TPRD-less tanks for different applications