



Racing through the desert thanks to hydrogen >>>



Why is hydrogen so important in the shift to green energy?

Hydrogen is the lightest and most abundant element on the planet but is not easily available as a gas, so it needs to be produced using different resources and processes. As almost all production of hydrogen today is from high-carbon sources (known as grey or brown hydrogen), the aim is to use new technologies to produce 'clean hydrogen'. Blue hydrogen uses carbon capture technology to capture up to 90% of emissions. Green hydrogen is produced by the electrolysis of water, breaking H₂O into its components of hydrogen and oxygen using renewable energy sources, resulting in zero-carbon hydrogen.

UK expertise in hydrogen

- The UK is within the top ten countries globally for hydrogen technology patent rates.
- UK hydrogen companies have world-leading fuel cell, hydrogen production and material technologies. 196 companies in the UK work on Hydrogen Fuel Cell (H₂FC) technologies.
- Over 66% of UK hydrogen companies already export hydrogen-ready technology to the growing global market, including fuel cell technology, methane reforming, green hydrogen production and project life cycle capability.

UK companies exporting hydrogen expertise to the Middle East

Atkins

Atkins is supporting an investment company in Abu Dhabi in its hydrogen for fuels programme to produce green hydrogen from a solar-powered electrolyser. The green hydrogen can then be used as fuel for ground mobility (cars and buses) and for fuel-cell maritime vessels. It can be further processed to produce synthetic kerosene (sustainable aviation fuel). Atkins has also been appointed as a technical advisor to a leading energy company to develop large-scale green hydrogen and derivative plants in the United Arab Emirates. Atkins' role will cover the pre-feasibility, conceptual design and development phases for a number of projects.

AFC Energy

AFC Energy Plc is a leading provider of hydrogen fuel cell power systems to generate clean energy in support of the global energy transition. Based in the UK, the company's scalable systems provide off-grid, zero-emission power that is already being deployed for rapid electric vehicle charging and the replacement of diesel generators for temporary power applications. This includes charging all of the cars for the inaugural Extreme E racing season that held its first-ever race in the Saudi Arabian desert in April 2021. AFC Energy is also working with global partners in the deployment of products for the maritime, ports, data centres and rail industries.

Learn more about UK renewable energy solutions for your business.

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