



## 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, and so 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 H<sub>2</sub>O 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 (H<sub>2</sub>FC) 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

### 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. AFC Energy is also working with global partners in the deployment of products for the maritime, ports, data centres and rail industries.

### Wood

Wood is one of the world's leading consulting and engineering companies operating across energy and the built environment with 40,000 professionals, across 60 countries. The Abu Dhabi National Oil Company (ADNOC) in the United Arab Emirates has appointed Wood to carry out the pre-front-end engineering and design (pre-FEED) work on a world-scale 1 million tonne per year blue ammonia facility in Ruwais. It also chose Wood for six additional projects at Ta'ziz.

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