Hydrogen Awards

Winners 2024

A word from our headline sponsor: Parker Hannifin

With the rapid growth of the global hydrogen market, in particular the increasing demand for green hydrogen, the next 10 to 20 years will be crucial.

With the industrial change on the horizon necessary to reach and exceed the various global targets required for net zero, Parker Hannifin is in a pivotal position, active worldwide and across the entire hydrogen sector, enabling engineering breakthroughs for a better tomorrow.

It is for this reason that Parker is delighted to be Headline Sponsor to the Hydrogen Awards supporting top performing companies across the sector. With Parker's 60 years of hydrogen experience, our involvement with these Awards reflects our commitment to this vital industry and its key role in the drive to decarbonise, particularly those parts of heavy industry where it is more challenging to offer clean alternatives.

It's clear, looking at the list of Finalists for this second year of the Hydrogen Awards, that there is much hard work, innovation and dedication in play as we all push towards enabling a greener energy future. On behalf of myself and all of my colleagues at Parker Hannifin, congratulations to the Finalists and Winners this year.

Ian Tames
General Manager, Parker Hannifin UK

Headline sponsor

Media partners

Sponsors

Academic excellence sponsor

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Welcome

Concept proven: Growth comes next.

Following our successful proof of concept with the first ever Hydrogen Awards dinner and ceremony in 2023, the Awards team were keen to build on the successes of the inaugural year and ensure that the 2024 Awards dinner was an even bigger and more far-reaching celebration of enterprise, innovation and excellence in the hydrogen industry.

Much of this increase in awareness and reach is no doubt due to our strong suite of media partners to the Awards. The last 12 months have been a very busy time, seeing the team agree further partnerships in addition to H2 View, with the Awards now counting both Emobility Engineering and Engineering Hydrogen Solutions as media partners to the Awards.

For the second year in a row, the Awards recognises the importance of academia in hydrogen with the Academic Excellence in Hydrogen Research and Innovation Gold Award, sponsored by HyDEX. After the initial success of this category in the first year of the Awards, for 2024 it expanded beyond the HyDEX partner universities to include hydrogen-related projects at UK and international universities.

We must also mention that this fitting celebration would certainly not have happened were it not for the generosity of the Awards' Headline Sponsor Parker Hannifin, with Energy Research Accelerator and Luxfer Gas Cylinders as Category Sponsors and Supporting Sponsor HyNet.

Thank you all for your continued support of the Hydrogen Awards.

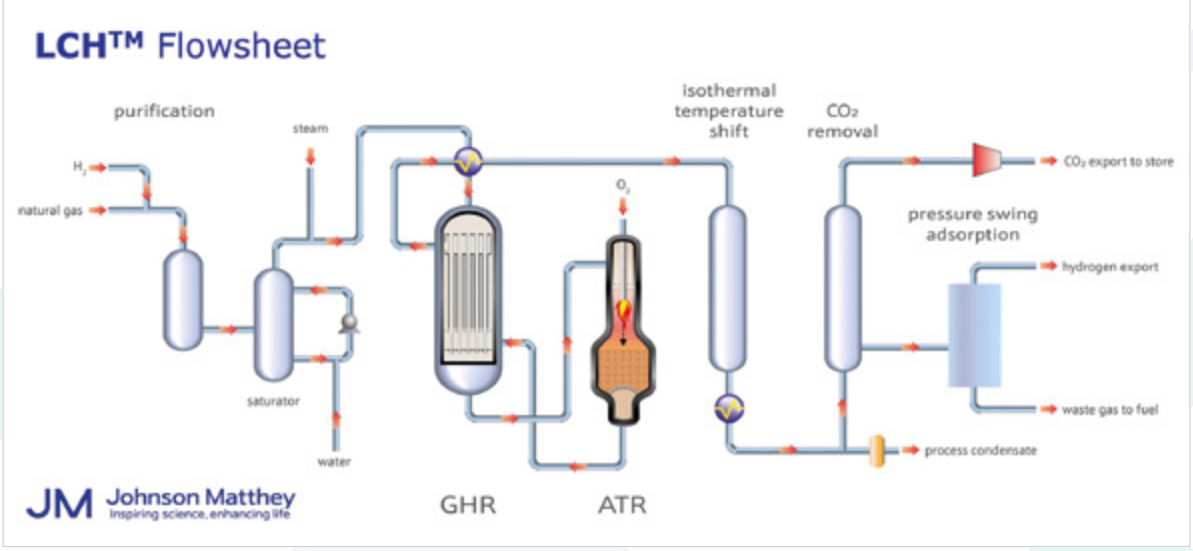
Matt MacNamara
Development Director, Hydrogen Awards

Parker is at the forefront of hydrogen innovation offering component and sub-system solutions that meet the complex needs of production, transportation, storage, distribution and end use, enabling rapid and reliable global deployment of green energy solutions.

To find out how we can support your hydrogen needs scan the QR code to visit parker.com/uk/hydrogen

Parker

Outstanding Achievement Gold Award



Gold winner

Johnson Matthey

Achieving zero emissions by 2050 hinges on low-cost, low-carbon, and scalable hydrogen production. Traditional reforming methods fall short of today's carbon intensity targets, leaving a need for innovation.

Johnson Matthey has been a leader in hydrogen activities for decades. The company's experience extends across the hydrogen value chain covering market-leading hydrogen production catalysts and processes, components for hydrogen fuel cells, and new technologies for clean hydrogen production.

It is Johnson Matthey's work and innovation today, coupled with their visions for the future, that make them as a worthy winner of the Hydrogen Awards 2024 Outstanding Achievement Gold Award.

sponsored by

Parker

HyDEX

@HyDEXMidlands

Congratulations to all of the winners and nominees at the Hydrogen Awards 2024

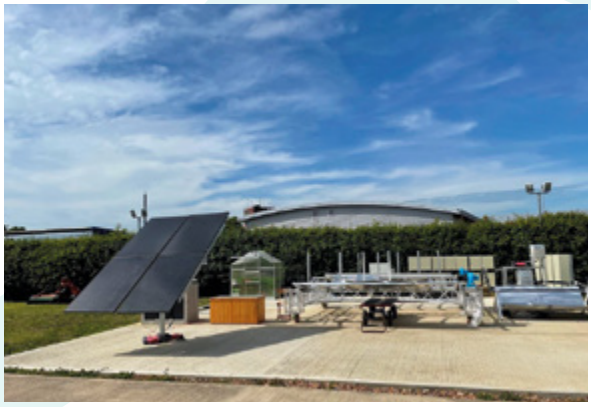
We're helping to accelerate the hydrogen economy in the Midlands by providing world-class research facilities and developing skills for the hydrogen economy.

hydex.ac.uk

Funded by UKRI Research England

Delivered by ERA ENERGY RESEARCH ACCELERATOR

UK Universities' Award for Excellence in Hydrogen Research and Innovation



Gold winner

Cranfield University

Dr Jerry Lou and colleagues at for the direct-coupling control system for green hydrogen production (DCH2)

Producing hydrogen by electrolysis has traditionally required multiple stages of electric power conversion, resulting in significant efficiency losses and high CAPEX. The DCH2 project is developing a novel direct coupling and control power management and architecture for green hydrogen production. The technology is highly efficient, theoretically achieving 99.5% or more of the renewable energy transferred to H2 production, comparing with <90% for the current systems. The judging panel were also impressed with the team's good engagement with industry and a clear development pathway for the technology.

Finalist nominees

Aston University
The Wolfson Centre for Low Carbon Hydrogen

Birmingham University
High entropy alloys metal hydride heat pumps for decarbonising heat in buildings

Cranfield University
Net-Zero Research Airport

Cranfield University
Novel noble metal-free catalysts for sustainable green hydrogen production from seawater

Loughborough University
Integrated battery-electrolyser

High commendation

Derby University

Dr Stefano Valvano and colleagues for AETHER (Advanced Solutions for Hydrogen Zero Emission Fuel)

A collaboration between the University of Derby and industry, led by Tisics, this transformative technology will underpin the safety and development of low carbon aviation and hydrogen applications. AETHER aims to overcome the challenges faced by conventional materials when storing cryogenic hydrogen for long-service in aircraft, and key partnerships on this project also mean support future development pathways and routes to impact.

sponsored by

International Award for Academic Excellence and International Collaborations in Hydrogen

Gold winner

Loughborough University

Dani Strickland and colleagues for the integrated battery-electrolyser

Loughborough University is the first organisation to undertake to build and operate a lead acid battery-electrolyser which has the potential to be both sustainable and competitive, due to its seamless integration into the lead acid battery recycling chain, abundance of materials and low capital cost. The novel technology has already attracted £12 million and the Loughborough team is progressing towards a high technology readiness level with demonstrators in Malawi, Zambia and the Ivory Coast. Working with global research and industry partners, including the Consortium of Battery Innovation and lead acid battery supplier Monbat with a worldwide presence in over 70 countries, will facilitate major scale up of the battery-electrolyser technology.

sponsored by

HyDEX

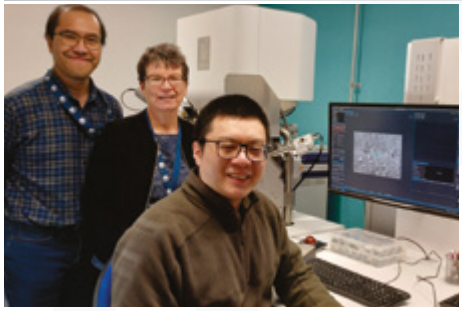
HyDEX Universities' Award for excellence in hydrogen research and innovation

Gold winner

Cranfield University

Dr Adrianus Indrat Aria and colleagues for the novel, noble, metal-free catalysts for sustainable green hydrogen production from seawater

The research focuses on the discovery and development of noble, metal-free electrocatalysts and protective coatings to accelerate the democratisation of green hydrogen. The team's immediate aim is to replace platinum and iridium with sustainable alternatives that offer comparable catalytic activity and durability. An innovative vapour deposition technique for high-throughput screening of various material compositions and characteristics enables rapid performance optimisation.
The judges commended this emerging innovation in partnership with industry, with a clear impact route that has potential to open opportunities for decarbonisation in much needed sectors and geographies.



Finalist nominees

Aston University

The Wolfson Centre for Low Carbon Hydrogen

Birmingham University

High entropy alloys metal hydride heat pumps for decarbonising heat in buildings

Cranfield University

Direct-coupling control system for green hydrogen production (DCH2)

Cranfield University

Net-Zero Research Airport

Loughborough University

Integrated battery-electrolyser

sponsored by

Engineering HYDROGEN Solutions

MSL Media Ltd is proud to publish world-leading industrial trade journals, including Hazardous Engineering Solutions, Engineering Maintenance Solutions, Industrial Director Magazine, and Engineering Hydrogen Solutions.

Each edition of Engineering Hydrogen Solutions, is distributed globally to thousands of engineers, managers, and directors who are responsible for implementing hydrogen technology and innovation. This informative publication features the latest products, services, technology, legislation, news, and case studies related to hydrogen solutions.

Stay up-to-date with the latest developments in the industry by subscribing to Engineering Hydrogen Solutions today!

Hydrogen Awards

The First Gas Awards

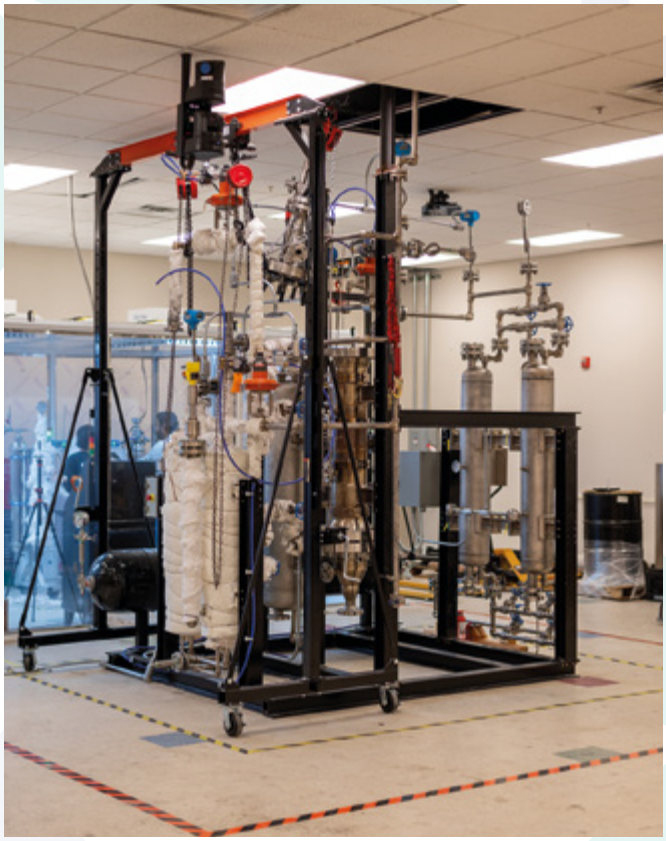
www.engineeringhydrogensolutions.com

Start-up Hydrogen Sector Company

Winner

GenHydro

GenHydro produces low-cost emissions-free hydrogen, enabling a multiple industry transition to clean energy and production. The company has introduced novel hydrogen production technology that utilizes scrap aluminum to produce zero emissions hydrogen and high-quality heat for the generation of clean electricity using steam, having the capability to solve a global problem for hydrogen production. The goal is to be a part of the global transition to emissions-free energy. What this means is that using GenHydro's technology provides a method for existing industries to keep doing what they do best, while also moving towards emissions-free production.



GH
GENHYDRO

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Engineering Solutions
HYDROGEN

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GAS CYLINDERS

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Giving you more **hydrogen storage solutions**

At Luxfer Gas Cylinders we supply hydrogen gas cylinders globally. In Europe we design and manufacture hydrogen fuel storage systems for all major forms of transportation across the world. We also provide gas distribution solutions via our virtual pipeline systems **– so whatever you need us for, we're ready to go.**

www.luxfercylinders.com

Automotive (cars, bikes, pick-ups and vans)

Winner

GeoPura

An alternative use for hydrogen, supporting EV charging infrastructure as the demand on the grid increases or where grid is unable to support, GeoPura is enabling the MOD transition to EV's. The Defence Support organisation have launched the first of three hydrogen-fuelled charging facilities to power Front-Line Command electric fleet vehicles as it transitions to zero-emissions by 2027. Starting with RAF Leeming, the HPUs will also be trialled at the Navy's HMNB DEVONPORT and the Army's Merville Barracks and can be co-located with a HRS to support the introduction of hydrogen vehicles, benefiting from a shared hydrogen supply on site.

GeoPura

Finalists

First Hydrogen
Toyota Motor Manufacturing UK

Automotive (trucks, buses and coaches)

Winner

HVS

HVS proudly presents SEMAS (System Energy Management using Adaptive Simulation), an innovative propriety system which integrates the powertrain sub-systems into a functional Fuel Cell Electric Hydrogen Vehicle (FCEHV). It is a "whole system" approach to vehicle energy management aimed at achieving lowest life cycle operating and maintenance costs for hybrid vehicles powered by fuel cell electric powertrains. It delivers extended life of the Hydrogen Fuel Cell and the energy storage sub-systems, optimises the operation of the powertrain under all loads and duty cycles to deliver increased fuel efficiency and extend the vehicle range (reducing operational costs).

HYDROGEN VEHICLE SYSTEMS

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LUXFER
GAS CYLINDERS

HyNet

MAKING NET ZERO HAPPEN

We are in the midst of a climate emergency. We must urgently reduce the amount of carbon dioxide we emit – all the way down to net zero.

HyNet is an unmissable opportunity.

HyNet is an infrastructure project developed by a group of organisations who have come together to collaborate in reducing carbon dioxide emissions from industry.

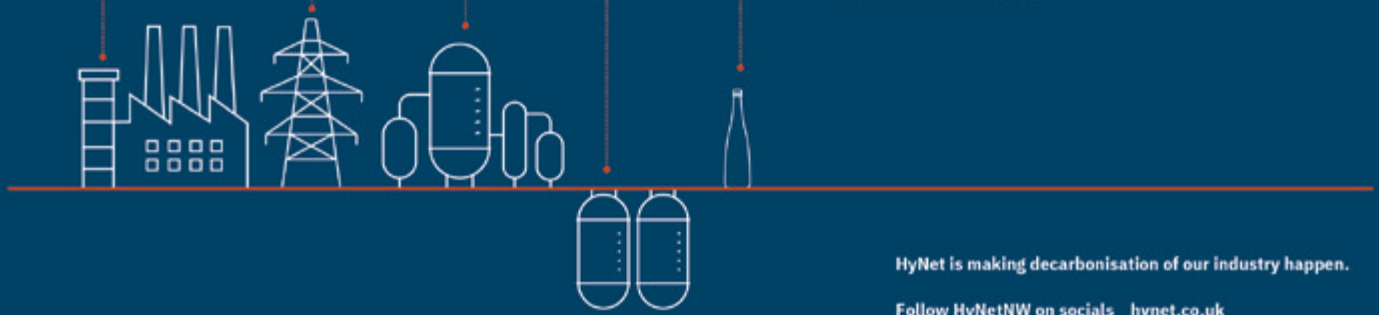
Reduce carbon dioxide emissions
by up to 10 million tonnes each year across the North West and North Wales

Create a source of locally-produced low carbon fuel
helping the UK's own energy security

Jobs & skills
grow a new skills base, safeguard existing jobs & create new roles

Draw in investment
attract inward investment

Create low carbon products
enable industry to manufacture low carbon versions of vital products we use every day



HyNet is making decarbonisation of our industry happen.

Follow HyNetNW on socials hynet.co.uk

Large Project and System Solutions (including utilities and on- and off-grid applications)

Finalists

GenHydro

Giancarlo Zema Design Group

HiiROC

Winner

GeoPura

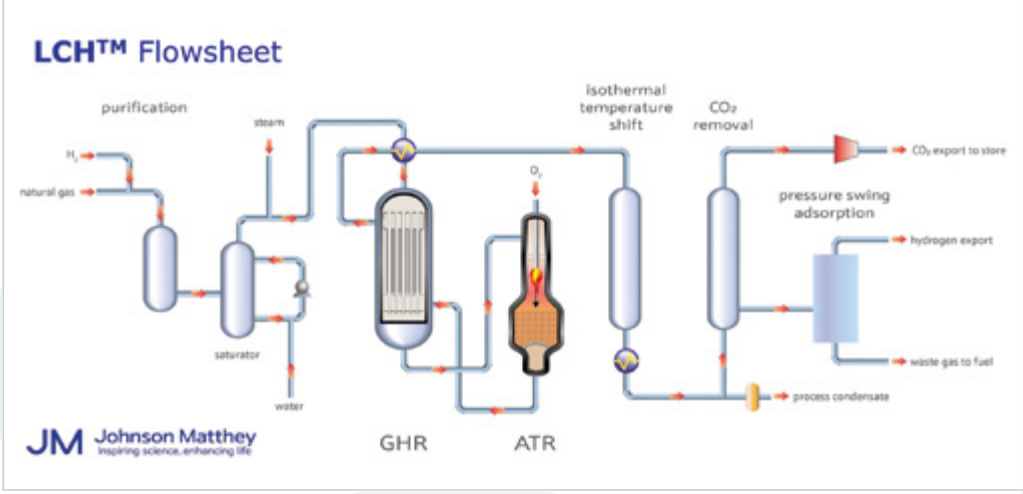
The 2023 BMW PGA Championship on the DP World Tour was the first-ever major sports TV production powered entirely by green hydrogen. Collaborating with European Tour Productions, IMG Media and FTVS, two GeoPura HPUs supplied zero-emission electricity to the broadcast compound powering the production and live global coverage direct to the world feed. Used in place of high polluting diesel generators to power the broadcast compound, the HPUs were also used to recharge the electric vehicles and golf buggies used by the production teams. It's estimated that the HPUs, hydrogen powered generators, saved a total of 16.4 Tonnes of CO_2 compared to the 2022 tournament.

GeoPura™

presented by

HyNet

Production



Winner

Johnson Matthey

Achieving zero emissions by 2050 hinges on low-cost, low-carbon, and scalable hydrogen production. Traditional reforming methods fall short of today's carbon intensity targets, leaving a need for innovation. JM's LCH™ GHR + ATR technology is more than a process flowsheet; it's the blueprint for a low-carbon future, offering: Exceptional CO2 capture rates (99%) and the lowest possible carbon intensity; Highest process efficiency and lowest LCoH commercially available today; Total carbon intensity well below the UK clean hydrogen standard, future-proofing plants. Selection for large-scale projects, including H2H Saltend and HyNet, underscores its transformative potential for hydrogen production.

Finalists

Bayotech
Dubai Electricity Water Authority
GenHydro
Ohmium International

Installation, Service and Maintenance

Winner

Hydrogenscape with Giancarlo Zema Design Group

The dream of all time, to get around with environmentally friendly vehicles that emit simple water vapor as a waste element, which recharge from nature and in a natural way. From today, the dream becomes reality, thanks to HydrogenForest, the first environmentally sustainable charging stations for hydrogen vehicles. Large tree-like structures growing inside urban forests of Paulownia, the plant that absorbs the most CO2 in the world, about ten times the CO2 of ordinary trees. Tall modular structures with laminated wood ribs measuring 7 meters in height and 20 meters in diameter accommodate hydrogen dispensers at the base and on the stems of the beautiful canopies of vertical greenery.

HYDROGENSCAPE
SMART HYDROGEN INFRASTRUCTURE

Marketing and Communications

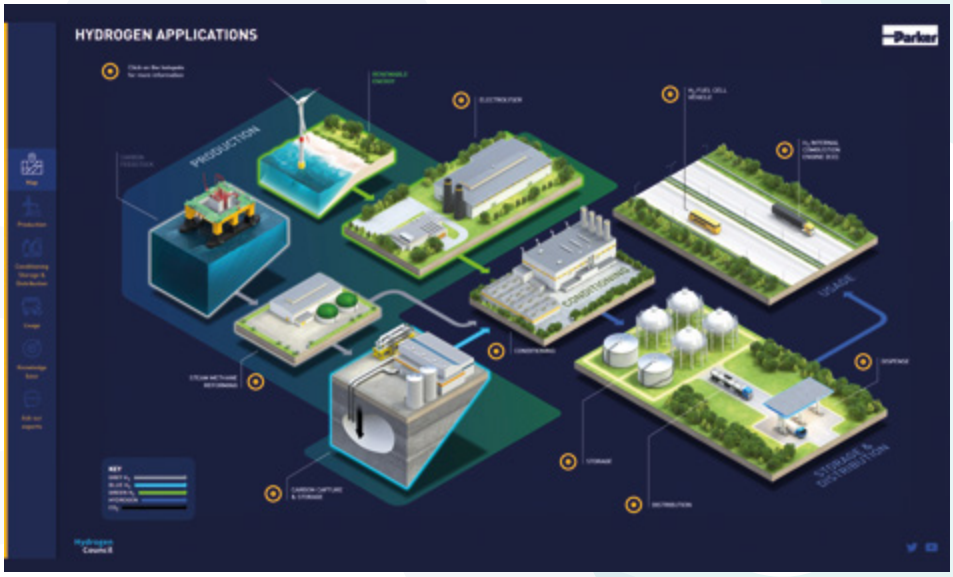
Winner

Parker Hannifin UK

Available from Parker though, this educational piece of marketing and communication tool show the full H2 and CCUS value chain. Not just the 'capital equipment' as many in the industry will know of. For example, in an explanation of a project they may speak of an 'electrolyser' or 'HRS' but no deeper. Parker Hannifin's online Hydrogen Application Index goes very granular showing what really goes into such capital equipment, products used or what can be adopted. It can be used for system overview understanding, technology learning, options available and how it works.

Finalist

HVS



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Research Initiative

Winner

Energy Safety Research Institute

The aims of the Reducing Industrial Carbon Emissions (RICE) project were to provide the UK's first example of green hydrogen generation as an alternative to natural gas combustion to reduce carbon emissions in the cement industry, install and operate a pilot electrolyzer for minimum of 3 years, ensure integration within the industrial process, and demonstrate reliability, determine maintenance costs and return-on-investment. The project achieved each of these outcomes by jumping from TRL5 to TRL9, while additional potential adopters were able to interface with the unit and engage with the end user to ascertain if it was right for adoption.

RICE
Reducing Industrial Carbon Emissions
Lleihau Allyriadau Carbon Diwydiannol

Finalist

Mattiq

Recruitment, Training and Development

Winner

Gexcon

Gexcon actively addresses the need for hydrogen safety. Statistics reveal that accidents often result from a lack of hazard awareness and understanding of the unique properties of hydrogen, in designing, building, or operating hydrogen facilities.
Gexcon, in partnership with the IChemE, have successfully developed and delivered 10 awareness-level and 12 advanced hydrogen safety courses.
These programmes offered both to the public and as in-company training, were conducted entirely online, ensuring accessibility.
Feedback from participants indicates the exceptional quality of these courses.

GEXCON

Legal, Financial, Professional and Consultancy Services

Winner

IKM Consulting

On behalf of their client, GreenPower Hydrogen, IKM Consulting formed a multi-disciplinary design team and demonstrated the feasibility of a green hydrogen production, storage and dispensing facility on the west coast of Scotland.
IKM Consulting is an engineering consultant with more than 25 years' experience whose workload is predominantly in high-hazard environments. They are innovators with the capacity to rigorously test their solutions prior to implementation, as well as being capable of supporting innovative and less often seen development types.

Main judging panel

Rik Adams
Innovation Delivery Director, Advanced Propulsion Centre

Jon Hunt
Senior Manager Hydrogen Transformation, Toyota

Dr Michaela Kendall
CEO, Adelan

Harsh Pershad
Technical Director, Heat and Energy Decarbonisation, Ricardo

Ben Richardson
UK&I Lead Stationary Fuel Cells, Bosch

Mark Ridley
Sustainable Solutions Manager, Briggs Equipment

Dr Cedric Rouaud
Chief Powertrain Engineer, Hyvia

Judging panel for the Academic Excellence in Hydrogen Research and Innovation

Dr Sharon George
Keele University, Principal Investigator of HyDEX

Philip Sharman
Managing director of Evenlode Associates, ex Chair of the Energy Research Accelerator's Industrial Advisory Board

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