HENRY ROYCE INSTITUTE

ROYCE

THE ROYCE HYDROGEN ACCELERATOR

Supporting you to deliver the material innovations needed for the UK to lead the global hydrogen economy

INNOVATOR EDITION

GOVERNMENT SUPPORT FOR THE ROYCE HYDROGEN ACCELERATOR

Department for Science, Innovation & Technology

Materials technologies are transformative, driving innovations in critical technologies and strategic industries. New innovations pervade most societal challenges in achieving net zero.

I welcomed January's publication of the Henry Royce Institute's National Materials Innovation Strategy and its call to drive investment to test, commercialise and deliver material solutions for hydrogen deployment and spur rapid technology translation into commercial applications.

Developing the hydrogen economy will contribute directly to economic growth, one of the UK Government's core national missions, and hydrogen will also be a critical component of our clean energy future. The technology's success hinges on the development of new materials for sustainable hydrogen production, storage, distribution, and use.

I strongly support the Royce Hydrogen Accelerator's objective in driving investment into the material innovations that will support the transition towards a clean energy future.

Lord Vallance
Minister for Science, Innovation, Research and Nuclear

RE-DEFINING MATERIALS TECHNOLOGY TRANSLATION FOR HYDROGEN

The Royce Hydrogen Accelerator is not a traditional accelerator.

Backed by the Henry Royce Institute for advanced materials, it identifies and champions critical materials solutions for the hydrogen supply chain, supporting innovators to scale and introducing them to investors.

Royce has extensively researched the hydrogen industry, uncovering the materials solutions that have the potential to unlock a key component of our future energy system.

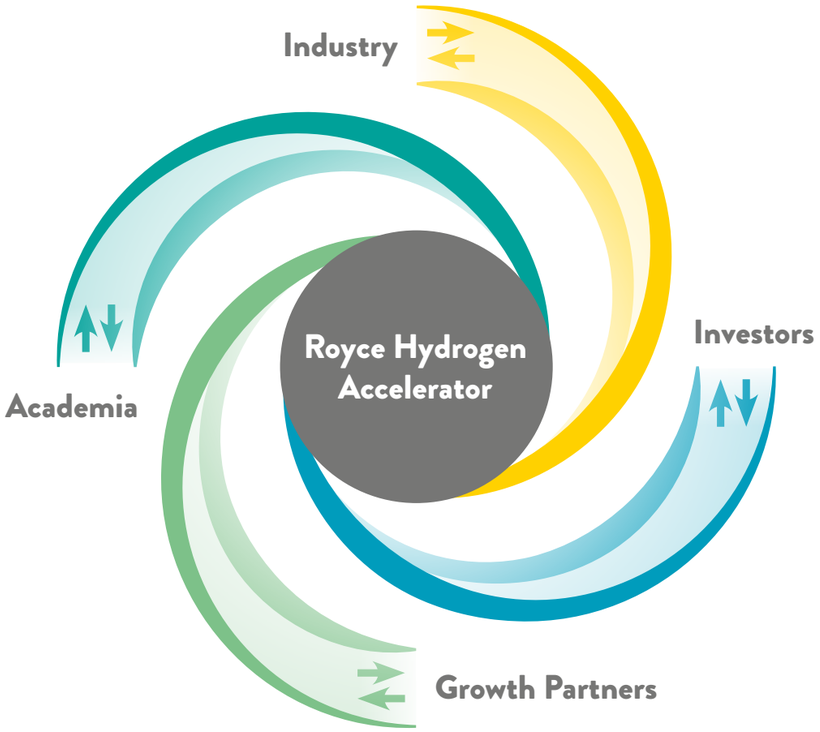
The Royce Hydrogen Accelerator (RHA) is a specialist body, fully focussed on the hydrogen sector. It is specifically designed to address a gap in the market to connect investors with verified innovations that have real potential to deliver a functioning, productive hydrogen economy in the UK and internationally.

A unique offer

The RHA is funded by public money. It is a trusted, neutral source of information and guidance.

At zero cost to you, the accelerator's skilled team of analysts will confirm the technical and market potential of your solution, before connecting you with the community and services that you need to become investment-ready.

The RHA is directly connected with investors who are interested in early opportunities in the hydrogen economy. It will present your solution to these investors, speeding up the process of launching your technology in an end-to-end hydrogen supply chain that enables a low carbon future.



Who we are

Our team includes commercial and technical experts, all committed to advancing hydrogen materials solutions.

We know the hydrogen market and can connect your innovation with the right technologies, platforms, and partners to optimise its potential.

Scouts

First points of contact sourcing early technologies.

Analysts

Deep technical expertise and the tools to verify the market potential of a solution

Technology Advisory Group

Further expertise for de-risking and shaping investment opportunities.

Investor Group

A wide range of investors with different interests and capabilities.

Eligibility

We are open to helping any potential hydrogen technology solution.

- The RHA spans the full hydrogen value chain, from production, storage and distribution, to end use and monitoring.
- We have a wide definition of materials, and use Royce's extensive connections in the UK research base to access the expertise needed to confirm and advance any materials solution.
- Your solution can be at any level of maturity. We will connect you with the community, partners, funds or services that you need to become investment-ready.
- The RHA caters to all commercial routes, not just spin-outs, working to introduce new technology solutions to the market on a pathway that suits you.

Get in touch with the RHA to find out more about how we can help you to accelerate the commercialisation of your solution.

Email hydrogen@royce.ac.uk

THE RHA'S SERVICES

The RHA is a gateway to becoming investment-ready.

It offers a suite of critical services that prepare commercial opportunities to transition from public funding to private investment, complementing existing provision and accelerating progress.

Our agile support services are here to help you when and where you need them.

The hydrogen supply chain is complex, but the RHA has an unparalleled understanding of it.

We will help you to navigate the optimum addressable market for your material solution by connecting you with the partners, platforms, technologies or commercial models that your solution needs.

Core offer
Example interventions

Business plan
Customers
Technical Assesssment
Tech development
Scale up
Business skills
Supply chain
Prototyping & Testing
Mentors
Proof of concept
Access
Partners
Funding
Lab facilities
Pitching events
Community
Personnel
Funding investment
Incorporation
Demonstrator
Knowledge forums

DRIVING INNOVATION IN THE UK

Hydrogen offers a genuine pathway towards decarbonisation, and a strong UK hydrogen industry will build national energy resilience, deliver green jobs, and ensure that future emissions targets can be met.

Hydrogen supply chains will be key to the future energy system, given hydrogen's ability to act as both an energy source and storage mechanism. Significant progress is already being made towards the adoption of hydrogen worldwide, but the UK needs to act now to capitalise on its particular strengths and ensure it becomes a key player in the industry's future.

The UK has unique structural advantages that can drive the development of its hydrogen industry:

Research & Development

The UK is home to globally-leading R&D capabilities and has a long-standing history of research excellence. It hosts world-class universities, has robust IP legislation, and a highly-skilled workforce which can be leveraged for the development and deployment of hydrogen technologies.

Renewable energy

The UK has access to significant renewable energy resources. The seas around Britain are already home to the world's largest offshore wind farms. An abundance of renewable energy is crucial for the sustainable production of green hydrogen through electrolysis.

Infrastructure

The infrastructure for the large-scale refining and chemical production processes required for hydrogen production already exists in the UK, much of which is concentrated in coastal industrial centres, such as in the North East.

Policy

The government policy landscape of the UK is also well-prepared for the future role of hydrogen. 'The UK Hydrogen Strategy' targets the installation of 10GW of low-carbon hydrogen production capacity by 2030.

Industry

The UK is already home to key players across the hydrogen supply chain, spanning the full range from SMEs to global industry leaders, including bp, INEOS, Rolls-Royce, Johnson Matthey, National Gas, AFC Energy, Ceres Power and ITM.

Strengthening the existing ecosystem

The UK Government has made significant investment in hydrogen research and the RHA has been carefully designed to complement and strengthen this established ecosystem.

Our support fills the gap between fundamental research support and funding for technologies already proven at scale. We are partnered with these initiatives to signpost innovators to the collaborators they need for their technology to succeed.

RESEARCH

DEVELOPMENT

DEPLOYMENT

The UK has a strong experimental research infrastructure, underpinning early-stage hydrogen technologies. Research programmes of this kind are normally EPSRC-funded and university-led.

- **UK-HyRES** (the UK Hub for Research Challenges in Hydrogen and Alternative Liquid Fuels) is investigating the fundamental challenges hydrogen poses to infrastructure protection and monitoring requirements.
- **HI-ACT** is examining the challenges of integrating hydrogen into the overall energy system.

The RHA supports this ecosystem from within, bolstering the UK's ability to pull hydrogen-related materials solutions through to market.

It's not constrained by traditional funding boundaries and enables materials innovation across the entire TRL spectrum to support hydrogen deployment.

A wide array of commercial hydrogen demonstrators and industrial innovation projects in the UK support the introduction of new technologies to the fast-evolving hydrogen landscape.

- **The Hydrogen Innovation Initiative** (HII) promotes industry-led innovation across the generation, distribution and consumption of hydrogen.
- **HyNet** – the UK's leading industrial decarbonisation project – is seeking pathways to net zero for hard-to-abate sectors including fuels, heating, and flexible power generation.
- **The Carbon Trust Clean Hydrogen Innovation Programme** (CHIP) is working with industry to accelerate green hydrogen deployment by reducing production costs of electrolyser components.

A SHORTCUT TO INVESTMENT

"The Royce Hydrogen Accelerator has been a great partner to HICO in helping us spot promising hydrogen startups. Their sector knowledge and early-stage insights add real value to our pipeline and help us build confidence in the teams we engage with."

HICO

Christopher Hartnell
CEO and MD, HICO

NEXT STEPS

Whether you're working on early-stage research or already seeking investment, getting in touch with the RHA will help you to access the support you need.

The RHA's scouts are available to discuss your technology and its market potential. We'll act as an independent champion for your valuable materials research, building on our sector expertise and support from UK Government.

Even if you have not yet started your commercialisation journey, you can access the benefits of our community connections and we look forward to hearing about your research.

Get in touch with the RHA to have your research included in our accelerator.

Contact the RHA by emailing hydrogen@royce.ac.uk

For more information, head to www.royce.ac.uk/collaborate/hydrogen-accelerator/

RHA LEADERSHIP

The RHA board comprises a mix of sector leaders in industry, finance, academia, and government.

Professor Robert Sorrell
RHA CEO

Robert is the chair of the NPL Science and Technology Advisory Committee (STAC) as well as a non-executive Director on the NPL Board. He chairs the Campaign for Science and Engineering (CaSE) and is a Strategic Advisor to the National Centre for Universities and Business (NCUB). He also chairs the UK Research Partnership Investment Fund.

Prior to that he held various senior technology roles at bp, joining them in 1987 from Durham University. He served as bp's senior technology policy advisor for the UK and EU, and his final role at bp was as the Technology Vice President for Research & Innovation for its global Formulated Products (Fuels and Lubricants) Technology.

Robert has a chemistry degree from the University of London's Queen Elizabeth College and earned his PhD from St John's College, University of Cambridge. He is a fellow of the Royal Society of Chemistry.

Jack Boyer OBE
RHA Chair

Jack is Chair of the Board at the University of Bristol, is on the Board of Bristol Innovations and previously chaired the technology transfer office of the University of Southampton. He is a former board member of the Henry Royce Institute, Deputy Chair of the Advanced Materials Leadership Council (BEIS), a Council Member of the Engineering and Physical Sciences Research Council (EPSRC) and of the Innovate UK Energy Catalyst.

His career includes the spin-out and/or transition to IPO of Ilika plc (advanced materials), Elcogen plc (hydrogen fuel cells) and Seeing Machines plc (artificial intelligence). He has been the CEO of TCG AG (engineering) and an M&A banker at Goldman Sachs. He is currently the Senior Independent Director of TT Electronics plc, a NED at Ricardo plc and at the Department for Education.

He holds degrees from Stanford University (BA), the London School of Economics (MSc) and Insead (MBA). In 2015, Jack was awarded an OBE in the Queen's Honours for services to Science and Engineering.

HENRY ROYCE INSTITUTE

The Henry Royce Institute was established to ensure the UK can exploit its world-leading expertise in advanced materials and accelerate innovation from discovery to application. With over £200 million of facilities in dedicated state-of-the art laboratories, Royce is ensuring that academics and industry in the UK's materials community have access to world-class research capabilities, infrastructure, expertise, and skills development.

ROYCE.AC.UK

Urban Foresight

Urban Foresight is a multidisciplinary innovation practice dedicated to accelerating the next generation of technologies, services and policy frameworks for places. We work with ambitious organisations around the world on projects that improve lives, protect the environment and boost local economies.

URBANFORESIGHT.COM

For further information contact:
hydrogen@royce.ac.uk

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UKRI Engineering and Physical Sciences Research Council

NOVEMBER 2025