NNWI
New Nuclear Watch Institute

12 MAY 2025

NON-ELECTRIC APPLICATIONS OF SMRS

CATALYZING CLEAN HYDROGEN PRODUCTION AND BEYOND

PARTNER

Nuclear Hydrogen Initiative

HOST AND SPONSOR

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CONFERENCE

09:00 – 19:00

09:00 Registration

09:45 Opening Welcome
NNWI, Pillsbury and NHI

10:30 Coffee Break

10:45 Panel 1: **Unlocking the Potential of Small Modular Reactors for Hydrogen Generation and Non-Electric Applications**

Moderator: Tim Yeo, Chairman, **New Nuclear Watch Institute**

- Dr. Hirofumi Ohashi, Deputy Director, HTGR Project Management Office, **Japan Atomic Energy Agency (JAEA)**
- James Bowyer, Project Director, **newcleo**
- Mike Crawforth, Strategy & Business Development Manager, **Rolls-Royce SMR**

12:00 Lunch Break

13:00 Panel 2: **Policy Frameworks for Integrating Nuclear Energy in Hydrogen Production and Other Applications**

Moderator: Elina Teplinsky, Partner and Energy Industry Leader, **Pillsbury Winthrop Shaw Pittman LLP;** Leader, **Nuclear Hydrogen Initiative**

- Alasdair Harper, Deputy Director for Advanced Nuclear Policy and Delivery, **Department for Energy Security and Net Zero (DESNZ)**
- Dr. Emma Guthrie, Chief Executive Officer, **Hydrogen Energy Association (HEA)**
- Allan Simpson, Chief Technologist, **Equilibrion**

14:30 Coffee Break

15:00 Panel 3: **Industry Applications and Beyond: Hydrogen, Transport, Heavy Industry Solutions**

Moderator: Vincent Zabielski, Partner, Energy, **Pillsbury Winthrop Shaw Pittman LLP**

- Dr. Justin Salminen, Head of Carbon Processing Plant Concept, **Hycamite**
- Brendan M. Bilton, Co-Founder & Chief Technology Officer, **Element 2**
- Mark Allan, Green Metals & Green Steel Centre Leader, Research & Technology Leadership Team, **Materials Processing Institute**

16:15 Closing Remarks

16:30 Drinks Reception Registration

17:00 Keynote Address
The Rt Hon Lord Hunt of Kings Heath OBE, **Minister of State for Energy Security and Net Zero, Department of Energy Security and Net Zero**

17:15 Drinks Reception

19:00 End

ORGANISER

New Nuclear Watch Institute

NNWI is an industry supported think-tank, focused on the international development of nuclear energy as a means for governments to safeguard their country's long-term sustainable energy needs.

We strongly believe that nuclear power is without which the binding Paris Climate Agreement objectives cannot be achieved and is therefore an essential part of the global solution to the challenge of climate change.

We believe that the right way to secure widespread recognition of the benefits of nuclear energy is to encourage the widest possible and best-informed debate about energy and climate change. This debate should highlight the benefits of nuclear power and its far-reaching applications that go far wider than simply the provision of low carbon electricity to tackle climate change. They include decarbonising transport, heating and industrial applications while continuing bringing high value solutions in agriculture and medicine.

In pursuit of this goal NNWI organises a range of events in the UK, the EU and further afield. Some of these are invitation-only private round-table discussions with industry leaders, policy makers and opinion formers. On other occasions we speak out publicly at conferences, seminars and in the media.

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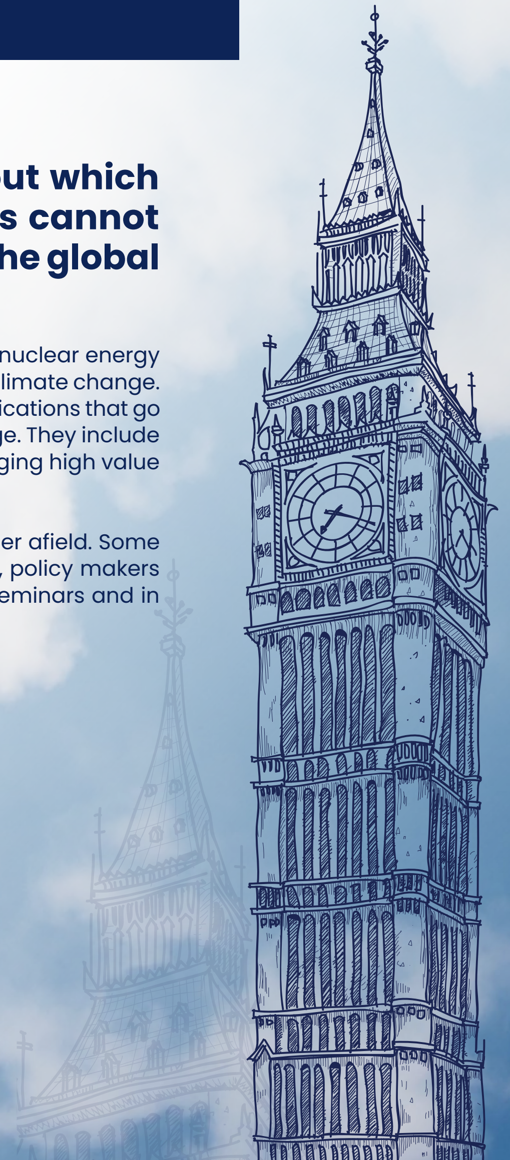

TIM YEO
CHAIRMAN
NNWI

Tim Yeo has a longstanding commitment to the nuclear energy industry dating back three decades to when he was Minister of State for the Environment with responsibility for climate change policy in the UK Government.

He later served in the Shadow Cabinet as Shadow Secretary of State for Trade and Industry before being elected as chairman of the UK Parliament Energy and Climate Change Select Committee.

Tim is Chairman of ElecLink Limited, a subsidiary of Getlink SE, which owns and operates a 1GW electricity interconnector between France and Britain. He is a consultant and former Executive Chairman of Powerhouse Energy Group plc, a listed UK company developing technology to convert plastic waste into hydrogen. Tim is the Honorary Ambassador of Foreign Investment Promotion for South Korea and has worked in China on climate related projects including the design of China's carbon trading markets and on carbon capture utilisation and storage with the UK-China (Guangdong) CCUS Centre.

WELCOME ADDRESS

This is a very exciting time for the nuclear energy industry. International events in the last three years, including the invasion of Ukraine, the volatility of fossil fuel prices, and the growing concerns in an increasing number of countries about energy supply security, have combined to create the most favourable conditions for additional investment in new nuclear energy capacity in this century.

At the same time, the widespread development of small modular reactors will soon start to bring the benefits of nuclear energy to communities that have hitherto been too remotely located or too sparsely populated to enjoy them. This will enable nuclear energy to fulfil its essential role as part of the global response to the challenge of climate change.

However, today's conference focuses on the broader potential for SMRs, which goes far beyond low-carbon electricity generation. The International Energy Agency, alongside many other expert bodies, has long been calling for a huge and rapid expansion of worldwide hydrogen production. The challenge has been to find the best way to produce hydrogen cleanly, quickly, and cheaply.

This is where SMRs can make a difference. Our conference will explore how hydrogen production can be advanced and how regulatory and other barriers can be overcome. A lineup of expert speakers from industry and government will inform and stimulate discussion on this important subject.

On behalf of The New Nuclear Watch Institute and our host and sponsor, Pillsbury Winthrop Shaw Pittman LLP, along with our partner, the Nuclear Hydrogen Initiative (NHI), I warmly welcome you to this event.

HOST AND SPONSOR

Pillsbury Winthrop Shaw Pittman LLP (Pillsbury)

Named the Most Innovative Law Firm in North America in the Energy Transition (Financial Times, 2023 and 2024) and ranked among the elite by both Chambers USA and Chambers Global, Pillsbury possesses one of the world's top nuclear energy teams—a trailblazing practice with a track record full of firsts for more than 50 years.

Pillsbury has worked on large-scale nuclear energy projects and related matters and their financings in more than 30 countries on six continents. Today, as one of the world's largest and most preeminent nuclear energy practices, Pillsbury has the deepest and most recognized global nuclear energy team, possessing the specialized knowledge and historical perspective to help clients take full advantage of opportunities in this complex and critically important field.

Pillsbury was also the first AmLaw 100 firm to launch a dedicated Hydrogen Practice. The Pillsbury team also created and maintains The Hydrogen Map, the first public resource tracking the development of hydrogen projects worldwide. Pillsbury's Hydrogen team has a deep understanding of hydrogen-based energy technologies and stands ready to advise clients across all sectors on its vast potential.

pillsbury

Please scan here to access The Hydrogen Map:

VINCENT ZABIELSKI

PARTNER, ENERGY, LONDON

PILLSBURY WINTHROP SHAW PITTMAN LLP (PILLSBURY)

Vincent Zabielski is recognised as one of the Best Lawyers in the United Kingdom for Energy and Natural Resources Law. His practice focuses on international nuclear energy matters, including providing strategic advice related to new-build EPC contracts, power purchase agreements, operation and maintenance, fuel supply chain, liability issues, international treaties, mergers and acquisition, dispute resolution and export controls. He is currently advising a number of entities seeking to deploy Small Modular Reactors (SMRs).

Prior to joining Pillsbury, Vincent was senior nuclear counsel for the UAE nuclear new-build program, where he was responsible for integration of nuclear licensing strategy with the largest-ever public financing of a public works project.

Vincent also served as associate general counsel-nuclear at Public Service Enterprise Group in New Jersey, advising the operators and owners of the Salem/Hope Creek Generating Stations regarding all aspects of nuclear operations. In this role, Vincent was responsible for all commercial contracts and routinely served as the legal interface with regulators. And, prior to becoming a lawyer, Vincent was an engineering manager at a large nuclear facility in the United States. He has particular experience in crafting integrated solutions for new-build projects that leverage his legal, business and engineering experience to deliver maximum value for the client.

PARTNER

Nuclear Hydrogen Initiative (NHI)

Zero-carbon fuels like hydrogen and ammonia present tremendous opportunities to decarbonize our energy system. Nuclear technologies have the potential to produce hydrogen in a clean, efficient manner, and at the potential scale required to drive decarbonization in hard-to-abate energy sectors without the space constraints of other means of hydrogen production.

The mission of the Nuclear Hydrogen Initiative (NHI) is to advance nuclear hydrogen as a critical climate solution within a shared vision of a decarbonized global energy system.

NHI, which is composed of more than 60 participants globally, seeks to achieve the following goals:

- **Raise awareness** of the role nuclear technologies can play in advancing a large-scale zero-carbon energy market.
- **Address technical and regulatory challenges** to facilitate the development of nuclear hydrogen demonstrations across technologies.
- **Engage the financial community** in the development of nuclear hydrogen solutions and innovative structures to finance new projects.
- **Develop and share policies** that advance nuclear hydrogen as a viable climate solution.
- **Catalyze commercial partnerships** to enable nuclear hydrogen demonstrations and projects.

NH Nuclear Hydrogen Initiative

ELINA TEPLINSKY

PARTNER AND ENERGY INDUSTRY LEADER, WASHINGTON, DC & LONDON, PILLSBURY WINTHROP SHAW PITTMAN LLP

LEADER, NUCLEAR HYDROGEN INITIATIVE

Elina Teplinsky, Pillsbury's Global Energy Industry Leader, Hydrogen Practice co-leader and a leading member of the firm's International Nuclear Projects team, focuses on international nuclear energy matters, including advice to U.S. and global clients on transactional and regulatory issues.

Elina is a trusted advisor to nuclear owner-operators, reactor and equipment suppliers, investors, architect-engineering companies and technical consulting firms on complex nuclear transactional and regulatory matters. She is currently advising a number of entities seeking to deploy Small Modular Reactors (SMRs) and frequently serves as lead outside counsel on new build projects, equipment and fuel procurements, M&A transactions and joint ventures in the nuclear sector. She has worked on transactions for more than 30 countries in North and South America, Europe, Turkey and the Middle East, Russia and the former CIS, Asia and Africa.

Elina also advises energy and technology companies on the commercialization of innovative zero-carbon technologies, including advanced nuclear reactors and zero-carbon fuels. Elina is leading the Nuclear Hydrogen Initiative, which comprises of four working groups seeking to catalyze policies, R&D, commercial partnerships and financing for nuclear hydrogen projects. Additionally, Elina advises clients on all aspects of the transactions, including project strategy, structuring and risk allocation; drafting and negotiation of EPC, equipment and fuel supply agreements; mitigation of nuclear liability risk; adherence to multilateral and bilateral treaty requirements; and addressing trade and investments restrictions.

Evening

KEYNOTE ADDRESS

THE RT HON LORD HUNT OF KINGS HEATH OBE

MINISTER OF STATE FOR ENERGY SECURITY AND NET ZERO

DEPARTMENT OF ENERGY SECURITY AND NET ZERO

BIOGRAPHY

Lord Hunt of Kings Heath OBE was appointed Minister of State at the Department of Energy Security and Net Zero on 9 July 2024. The minister is responsible for nuclear, individual planning decisions, and all departmental business in the House of Lords.

EDUCATION

Lord Hunt studied at Leeds University.

CAREER OUTSIDE POLITICS

Lord Hunt was a Member of the General Medical Council from 2008 to 2024 and President of the Royal Society for Public Health from 2010 and 2018.

He was the first chief executive of the NHS Confederation from 1996 to 1997 and director of the National Association of Health Authorities and Trusts (NAHAT) from its formation in 1990.

In 1993 he was awarded an OBE for services to the NHS.

POLITICAL CAREER

- Lord Hunt was Deputy Leader of the House of Lords and joint Minister of State for the Department of Energy and Climate Change and the Department for Environment, Food and Rural Affairs between 2008 and 2010.
- He previously served as a minister in the Department of Health and as Parliamentary Under-Secretary of State in the Ministry of Justice and the Department for Work and Pensions.
- **HE HELD SEVERAL POSTS WHILE IN OPPOSITION, INCLUDING:**
  - Shadow Spokesperson (Home Affairs), 2010 to 2012
  - Shadow Deputy Leader of the House of Lords, 2010 to 2017
  - Shadow Spokesperson (Health), 2012 to 2017
  - Shadow Spokesperson (Education), 2017 to 2018
  - Shadow Spokesperson (Cabinet Office), 2017 to 2018
  - Shadow Spokesperson (Health and Social Care), 2018

Advanced Nuclear Technologies: A Key to Unlocking Clean Energy and Decarbonising Hard-to-Abate Sectors

Nuclear energy is a central pillar in the UK's strategy to become a clean energy superpower.

Reaching this goal means achieving clean power by 2030, and accelerating to net zero across the economy, so that we can have a clean, secure energy supply. To get there, it is clear that advanced nuclear technologies (ANTs), such as Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs), will play a major role.

These cutting-edge technologies offer a transformative opportunity to provide clean energy directly to energy-intensive industries, whether that's our traditional heavy industry and manufacturing sectors, or in entirely new industries such as the production of low-carbon hydrogen and synthetic fuels.

With their compact size, modular construction, and lower capital costs, ANTs offer a flexible and scalable solution to meet the UK's ambitious decarbonisation targets. They can also provide both heat and power to energy-intensive industries, such as chemicals and cement plants, which are some of the most challenging sectors to decarbonise.

Hydrogen, another critical enabler of a low-carbon economy, is one area where ANTs could be particularly impactful. The high-temperature heat produced by SMRs and AMRs could enable more efficient hydrogen production, for example through solid-oxide electrolysis. It's a promising future pathway to low-cost, low-carbon hydrogen production.

Our low-carbon hydrogen sector is growing rapidly, backed by strong government policy frameworks such as our Hydrogen Production Business Model and Low Carbon Hydrogen Standard. These frameworks are already driving private investment into hydrogen projects, with funding allocations and support for green hydrogen projects announced. Notably, the inclusion of nuclear hydrogen as an eligible production route further opens the door for ANTs to play a role.

However, ANT deployment will depend on more than just technology readiness. It also requires clear, coordinated policy frameworks that can address the regulatory and financial challenges associated with nuclear energy. That is why the UK government's ongoing work on regulation of this area is so vital. The Nuclear Regulatory Taskforce, and the development of new planning frameworks that provide more flexible deployment of SMRs, AMRs and large-scale nuclear projects, are shaping the environment that will encourage investment in and delivery of ANTs.

Looking ahead, ANTs are also being explored for other high-potential applications, such as the production of Sustainable Aviation Fuel (SAF). To cut emissions from flying, the UK government is requiring aviation fuel suppliers to provide more low-carbon fuel through its SAF Mandate – and fuel made using nuclear power is eligible under this policy. ANTs are also being explored as a power source for the data centres that will be the engine of the Artificial Intelligence era. The UK government sees the potential of advanced nuclear to power these growing industries with reliable, low-carbon energy.

It's clear that ANTs offer enormous opportunities for our energy transition. That is why the Government is committed to supporting its deployment. With their potential to provide clean, reliable energy to key strategic industries, coupled with strong government support and policy frameworks, ANTs could be instrumental in achieving our energy security and net zero goals. This technology doesn't just unlock decarbonisation – it unlocks job creation and growth that could shape our economy for decades to come.

PANEL

Unlocking the Potential of Small Modular Reactors for Hydrogen Generation and Non-Electric Applications

01

Moderator

TIM YEO
CHAIRMAN

NNWI

DR. HIROFUMI OHASHI
DEPUTY DIRECTOR, HTGR PROJECT MANAGEMENT OFFICE

JAPAN ATOMIC ENERGY AGENCY (JAEA)

Dr. Hirofumi Ohashi is Deputy Director, HTGR Project Management Office, Japan Atomic Energy Agency (JAEA). He has been in charge of the High Temperature Gas-cooled Reactor (HTGR) project at JAEA for about 25 years. His R&D experience spans the fields of HTGR design and safety analysis, connection technology between nuclear reactors and heat utilization facilities, and hydrogen production using high-temperature heat.

He is currently on secondment to the United Kingdom National Nuclear Laboratory (UKNNL) as a project manager for the UK-Japan collaboration on HTGR, with the goal of developing and deploying an HTGR demonstrator in the UK to contribute to Net Zero.

JAMES BOWYER
PROJECT DIRECTOR

NEWCLEO

James Bowyer is the Project Director at newcleo responsible for the Deployment of newcleo's 200MW Lead cooled Faster Reactor (LFR200). He has 25 years of industry experience, the last ten of which he has spent operating at a senior level on nuclear new build programmes, both in the development phase and in preparing for operations in the UK and internationally.

James is highly experienced at the front-end development of nuclear new build programmes including acting as the Group Head of Programme Delivery for the Rolls Royce SMR programme, leadership of the Programme Development Partner team for Bradwell B, as well as taking a secondment to NuGen as their Head of Project Management. James also brings in Operational Readiness through his work as the Programme Manager responsible for the programme of work to establish the operator and licensee for Barakah Unit 1 in the UAE.

MIKE CRAWFORTH
STRATEGY & BUSINESS DEVELOPMENT MANAGER

ROLLS-ROYCE SMR

Mike Crawforth is the Strategy & Business Development Manager for Rolls-Royce SMR, utilising a wealth of experience in the nuclear industry to help meet the twin challenges of decarbonisation and energy security.

Specialising in technology introduction programmes, Mike has worked across the breadth of the nuclear industry. Now with Rolls-Royce SMR, Mike is working with utilities, energy users and policy makers to develop new scalable models to deploy nuclear solutions into the industrial energy ecosystems of tomorrow, driving down the system costs of the energy transition.

Panel 01

ARTICLES

Decarbonisation Unleashed: How SMRs Are Shaping the Energy Transition Landscape

by Tim Yeo, Chairman, New Nuclear Watch Institute

In the evolving narrative of energy transition and decarbonisation, Small Modular Reactors (SMRs) are emerging as significant players, offering innovative non-electric applications that extend far beyond traditional energy generation. The versatility of SMRs has sparked interest, particularly in their potential to support sustainable hydrogen production and various industrial processes. This is a pivotal moment in our journey towards a low-carbon economy.

SMRs exhibit unique characteristics. Their compact designs enable their deployment in diverse environments, catering to isolated and sparsely populated regions, and to industries facing energy constraints. This flexibility gives them advantages as both providers of electricity and facilitators of heat and hydrogen. By integrating SMRs into industrial processes, opportunities for substantial reductions in carbon emissions can be unlocked across multiple sectors, including manufacturing, transportation, and others even further afield.

Nuclear hydrogen production stands out as a particularly noteworthy non-electric application. The process employs the heat generated by SMRs to produce hydrogen through advanced methods like high-temperature electrolysis and thermochemical water splitting. This hydrogen can serve as a clean energy carrier, essential for decarbonising sectors that depend heavily on fossil fuels. By replacing conventional fossil fuel sources, greenhouse gas emissions can be substantially mitigated while still maintaining a stable supply of energy.

Despite its promise, however, the trend towards adopting SMRs as a cornerstone in the decarbonisation strategy faces challenges. One major obstacle is the variability in hydrogen production pathways and the economic feasibility of scaling up these technologies. Transitioning to nuclear-powered hydrogen requires significant investment. It must therefore offer value for money compared to existing alternatives. To reduce the current reliance on hydrocarbons, whose market prices fluctuate, there must be a clear economic incentive for industries to shift towards nuclear solutions.

Public perception also poses a challenge to the wider integration of SMRs. Too often safety concerns surrounding nuclear technology dominate the debate, overshadowing the potential benefits. It's therefore crucial for stakeholders to engage with communities, transparently and directly addressing the issues of safety, waste management and environmental impact that are associated with SMR deployment. Building trust through education and active communication must be a top priority as we push for wider acceptance of this energy source.

Additionally, a flexible regulatory framework needs to be established to facilitate the effective integration of SMRs into the energy landscape. Current regulations are predominantly designed for conventional reactors. This highlights the need for tailored guidelines to address the unique characteristics of SMRs and their applications.

In summary, while SMRs present an exciting new frontier in the energy sector with their potential for clean hydrogen and other non-electric applications, their integration needs to be handled with care. Industry stakeholders, policymakers, and the public must collaborate to overcome economic, regulatory, and acceptance barriers. The path to a decarbonised future can no longer be delayed. Immediate action is required to exploit the vast potential of SMRs in shaping a resilient and sustainable energy ecosystem.

Clean Hydrogen and Process Heat Production by HTGR Under UK-Japan Collaboration

by Dr. Hirofumi Ohashi, Deputy Director, HTGR Project Management Office, Japan Atomic Energy Agency (JAEA)

Achieving net zero requires the decarbonisation of hard-to-abate sectors, such as transportation and industrial sectors. Decarbonisation in these sectors necessitates a stable supply of high-temperature heat and hydrogen from non-fossil resources.

Due to the challenges of renewable energy instability, the utilisation of High Temperature Gas-cooled Reactor (HTGRs) is key to providing a stable and large-scale supply of high-temperature heat and hydrogen.

Japan Atomic Energy Agency (JAEA) has been developing HTGR technology for more than 50 years. In the 1990s, JAEA constructed an HTGR test reactor at Oarai in Japan. The HTTR (High Temperature Engineering Test Reactor), which continues to operate today, successfully achieved a reactor-outlet coolant temperature of 950°C in 2004 and it is still the highest temperature achieved in the world using this technology. JAEA has also conducted safety demonstration tests such as a "Loss of Forced Cooling Test" using the HTTR to demonstrate the inherent safety features of HTGRs. JAEA is now planning to demonstrate hydrogen production using heat from HTTR in 2028. On 27th March 2025, JAEA submitted an application to the Nuclear Regulation Authority of Japan for changes to reactor installation to connect a hydrogen production facility to the HTTR.

The Japanese government is also conducting an HTGR demonstrator development project in Japan, aiming for large-scale hydrogen production using HTGR technology, with a view to commercialisation.

Regarding HTGR fuel, Nuclear Fuel Industries, Ltd. (NFI) holds manufacturing technologies which are the highest quality in the world, and have already been used to produce the fuel for the HTTR. A key strength of Japan's HTGR technology lies in the existence of the HTTR as a proven technology.

The UK government is currently promoting the development of an HTGR demonstrator and HTGR fuel as part of the AMR RD&D Programme Phase-B and the UK Coated Particle Fuel (CPF) – Step 1 Programme. The United Kingdom National Nuclear Laboratory Limited (UKNNL), in collaboration with JAEA, has been selected for both Phase-B and Step 1.

As part of UK-Japan collaboration in AMR RD&D, JAEA is currently providing both design information for the HTGR demonstrator and fuel manufacturing technology. The UK is capitalising on Japan's significant new investment in the HTGR demonstrator development and more than 50 years' experience and investment in the HTTR development. This collaboration significantly reduces the development investment and associated risks for the HTGR demonstrator and HTGR fuel development in the UK.

The UK has extensive experience in long-term operations of a fleet of commercial Advanced Gas-cooled Reactors (AGRs). These reactors possess technologies in common with HTGRs. HTGRs are the optimal choice from the perspective of utilising EDF knowledge and personnel following the shutdown of the AGRs in the next few years.

The UK-Japan collaboration, combining Japan's expertise in HTGR technology with the UK's extensive experience in AGR operation, enables the early deployment of HTGRs in both the UK and Japan, contributing to the decarbonization in both countries.

Unlocking the Potential of SMRs and AMRs for Hydrogen and Sustainable Aviation Fuel in the UK - the key opportunities and challenges

by James Bowyer, Project Director, newcleo

As the UK moves toward its net-zero goals, hydrogen and sustainable aviation fuel (SAF) are emerging as essential solutions for decarbonising hard-to-abate sectors like heavy industry and aviation. The government has ambitious aims through its Hydrogen Strategy to deliver 10 GW of low-carbon hydrogen by 2030, with at least 5 GW coming from electrolysis. Simultaneously, the Jet Zero Strategy sets an ambitious target of 10% SAF blending in aviation fuel by 2030 and net-zero aviation by 2050.

Meeting these targets requires vast amounts of stable, clean, and dispatchable energy. While renewable sources like offshore wind and solar will contribute significantly, their intermittency poses challenges for production processes that need stable 24/7 power. This is where Small and Advanced Modular Reactors (SMRs and AMRs) offer a unique solution with their ability to provide reliable, 24/7 low-carbon baseload power, ideally suited for current electrolysis technologies like proton exchange membrane (PEM) and alkaline electrolysers. Their smaller size, modular design, and siting flexibility make them ideal for integration into industrial clusters and ports, reducing transmission losses and infrastructure costs. Unlike traditional large nuclear plants, SMRs/AMRs are faster and cheaper to deploy and allow a phased rollout aligned with demand easing funding pressures.

Beyond electricity, AMRs can provide high-temperature steam (500–700°C), like newcleo's Lead Fast Reactor, enabling High-Temperature Electrolysis (HTE) via Solid Oxide Electrolysis Cells (SOEC), which can be up to 30% more efficient. These high temperatures also support energy-intensive SAF synthesis methods like Fischer-Tropsch and future AMR designs may even facilitate direct thermochemical hydrogen production, further enhancing system efficiency.

Deploying SMRs and AMRs does not come without its challenges, these are capital-intensive projects that require long-term policy commitment and investment frameworks. The UK's Nuclear Energy Financing Act, which enables the Regulated Asset Base (RAB) model, is a step forward. Similar models tailored to hydrogen integration, alongside Contracts for Difference (CfDs) and long-term offtake agreements, could unlock private investment. Institutions like the UK Infrastructure Bank and inclusion of nuclear-derived hydrogen in green taxonomies would further boost investor confidence.

Co-generation deployment opportunities should be focused in the UK's industrial clusters, such as Teesside, the Humber, South Wales and key areas of the Midlands, where hydrogen and SAF projects are already emerging. Freeports and decommissioned fossil fuel sites offer additional potential. Whilst even areas like Aberdeen and Grangemouth, despite nuclear hesitance in Scotland, may benefit from strategic SMR/AMR placement near offshore energy hubs. newcleo in particular welcomes the recent planning reform as part of the Government's Plan for Change, which helps to clear a path for SMRs and AMRs to be located at such industrial sites outside the previously designated locations detailed in EN6.

However, regulatory and policy gaps remain. Nuclear-derived hydrogen is not yet recognised under the UK's hydrogen certification scheme, potentially excluding it from government support mechanisms. Greater regulatory coordination is needed to enable integrated SMR/AMR-hydrogen projects and streamline approvals. Whilst the UK's supply chain stands ready to support SMR/AMR deployment and hydrogen production there is a huge investment is needed to scale up capability and skills requiring strong government-industry collaboration.

Unlocking the potential of SMRs and AMRs is no longer just a technological question, it's a strategic imperative. With decisive policy, smart investment, and integrated planning, the UK could be a leader in the nuclear-powered hydrogen ecosystem that supplies decarbonised fuels for aviation, shipping, and industry, creates export-oriented fuel corridors, and offers grid-independent, resilient clean energy hubs.

Harnessing the Power of Rolls-Royce SMR for Industrial Decarbonisation

by Mike Crawforth, Strategy & Business Development Manager, Rolls-Royce SMR

Rolls-Royce Small Modular Reactor (RR SMR) represents a promising avenue for hydrogen generation and other non-electric applications. The Rolls-Royce SMR is designed to produce 1358 MW of thermal energy at around 300°C. The effective use of this high-grade thermal output, combined with the production of continuous, clean electricity enables the credible decarbonisation of a wide range of industrial applications including hydrogen production and its derivatives.

One of the most promising non-electric applications of SMRs is the production of clean hydrogen, seen as a key component in the transition to a low-carbon economy. Rolls-Royce SMRs can be coupled with a electrolysers to produce hydrogen efficiently. The continuous and reliable heat and electricity provided by SMRs ensures efficient electrolysis, particularly via Solid Oxide technology, making clean hydrogen production viable and cost-effective.

An overlooked benefit of nuclear hydrogen production is the ability to introduce significant system flexibility into a grid, this will be crucial for integrating renewable energy sources whilst maintaining grid stability. The Rolls-Royce SMRs offers inherent flexibility with an ability to quickly ramp power up or down, however a much more effective solution is the integration of adaptive hydrogen production in response to grid demands. Through flexible operation an SMR-Hydrogen system can support the grid when energy is in demand and electricity prices are high, whilst producing valuable clean hydrogen when energy is abundant in the system. A study completed by ULC Energy in the Netherlands along with Topsoe, McDermott, Kyos and Rolls-Royce SMR found that such an operational mode could improve profitability by up to 50% whilst contributing to grid stabilisation and still delivering 60% of the baseload hydrogen demand.

Hydrogen derivatives like Sustainable Aviation Fuel (SAF) and ammonia play a crucial role in addressing the challenges of decarbonisation. SAF, biogenic or synthetic, produced using energy generated from SMRs, can significantly reduce the carbon footprint of the aviation industry and ensure long term fuel security. Similarly, ammonia, which can be synthesised using hydrogen and nitrogen, serves as a versatile energy carrier being a potential fuel for shipping and other heavy industries. The production of clean hydrogen and ammonia at an affordable cost provides the only alternative to the continued use of natural gas in a range of industrial processes, including fertiliser production for agricultural use. The production of hydrogen and its derivatives using SMRs provides a sustainable and truly scalable solution for expanding to meet net zero ambitions.

The path to a decarbonised future can no longer be delayed. Immediate action is required to exploit the vast potential of SMRs in shaping a resilient and sustainable energy ecosystem.

Tim Yeo, NNWI

PANEL 02

Policy Frameworks for Integrating Nuclear Energy in Hydrogen Production and Other Applications

Moderator

ELINA TEPLINSKY
PARTNER AND ENERGY INDUSTRY LEADER, PILLSBURY WINTHROP SHAW PITTMAN LLP; LEADER
NUCLEAR HYDROGEN INITIATIVE

ALASDAIR HARPER
DEPUTY DIRECTOR FOR ADVANCED NUCLEAR POLICY AND DELIVERY
DEPARTMENT FOR ENERGY SECURITY AND NET ZERO

Alasdair Harper is Deputy Director for Advanced Nuclear Policy and Delivery in the UK Government's Department for Energy Security and Net Zero (DESNZ). Leading a multi-disciplinary team of technical, regulatory and nuclear industry experts, Alasdair is responsible for developing the policy frameworks and initiatives needed to commercialise small and advanced modular reactors in the UK.

This includes responsibility for the Future Nuclear Enabling Fund. Alasdair has more than 20 years' experience of energy and climate-change policy making in Government, working on nuclear policy issues since 2015.

DR. EMMA GUTHRIE
CHIEF EXECUTIVE OFFICER
HYDROGEN ENERGY ASSOCIATION (HEA)

With over 100 members, the HEA is the voice of the UK hydrogen sector, dedicated to supporting stakeholders across the entire value chain. The HEA is a leader in advocating for hydrogen to deliver clean growth, energy resilience and net zero.

Dr. Emma Guthrie is a distinguished leader in the hydrogen sector, with extensive experience in advancing hydrogen technologies and infrastructure. Her career includes 15 years at Air Products where she held a range of positions, including UK Business Development Manager for Hydrogen Energy. In this role she spearheaded the deployment of hydrogen fuel cell vehicles and infrastructure, through the coordination of multi-stakeholder demonstration projects. Emma also spent nine years at speciality chemical distributor IMCD Group in a variety of commercial roles.

ALLAN SIMPSON
CHIEF TECHNOLOGIST
EQUILIBRION

Allan Simpson is Chief Technologist at Equilibrion, a strategic and technical consultancy and project development company, supporting businesses across the full nuclear to end user value chain. With a background in nuclear physics, Allan has been a leader in the development of non-electric applications for nuclear energy in the UK, establishing a research programme on the topic in 2020. He has led multiple projects that define the opportunity for nuclear energy to have a greater impact on the energy transition, including most recently the SHyNE project.

Allan brings experience in technology development, research and engineering covering nuclear energy applications (including hydrogen and synthetic fuels), nuclear physics, software and modelling, nuclear medicine and nuclear data. He is an established leader in the definition and execution of technical programmes to progress the role of nuclear energy in decarbonisation of transport, industry and heat. He builds and maintains stakeholder relationships across the entire value chain required for the nuclear sector to fulfil its role in a future energy system.

Panel 02

ARTICLES

Nuclear Energy as an Enabler of the Hydrogen Economy

by Elina Teplinsky, Partner and Energy Industry Leader, Washington, DC & London, Pillsbury Winthrop Shaw Pittman LLP; Leader, Nuclear Hydrogen Initiative

As governments and private sector leaders consider solutions to decarbonize the global energy matrix in order to address climate change, hydrogen has increasingly emerged as one promising pathway to net-zero emissions. The world's most abundant element is an energy carrier that can be used not only to store energy, but also to decarbonize hard-to-abate energy sectors, such as transportation, power, industry, and buildings.

As of today, more than 50 countries and the European Union (EU) have issued hydrogen roadmaps and/or strategies. For hydrogen to fulfill its enormous decarbonization potential, its production process must also account for the environmental impact of its energy sources. Today, most hydrogen is produced through steam methane reforming or coal gasification, which results in considerable unfavorable emissions. The carbon impact of hydrogen production from fossil fuels can be mitigated through carbon capture, utilization and storage technologies which are continuing to advance. However, a parallel pathway for hydrogen production from zero-carbon sources is paramount to achieving the element's true decarbonization potential. The production of hydrogen through water electrolysis – where electricity is used to decompose water into oxygen and hydrogen gas – has emerged as one of those pathways. When the required electricity can be produced from clean energy sources.

Among clean energy sources, nuclear energy presents a particularly powerful hydrogen production source, adding benefits not available from any other energy source. Nuclear plants are zero-carbon, operate at capacity factors above 90%, and require minimal land resources compared to renewable energy. Nuclear plants can also produce heat, not just electricity. For that reason, they can be paired with a more efficient high-temperature steam electrolyzer (HTSE), which uses less electricity per kilo of hydrogen produced. Advanced reactors that operate at very high temperatures can produce hydrogen thermochemically, without the use of electrolyzers. The unique characteristics of nuclear energy allow it to pair with these low-cost, high efficiency production processes which facilitate nuclear hydrogen production's economic competitiveness. In this way, nuclear energy can be a catalyst for a clean hydrogen market.

Recognizing the value that nuclear energy can bring to hydrogen production, many endeavors and pilot projects have emerged to pave the way for large scale nuclear hydrogen production. Some of these initiatives are included in national hydrogen visions, plans, and strategies, as is the case in the United Kingdom, Canada, and the United States. Countries like France, while not expressly referring to nuclear energy in their hydrogen plans, have defined clean hydrogen production in a technology agnostic way, allowing the inclusion of nuclear energy in clean hydrogen pathway strategies.

Hence, it is important for stakeholders and decision makers to consider the inclusion of SMRs and advanced reactors as an active part of the clean energy mix in hydrogen strategies, policies, and roadmap development.

The Role of Nuclear Energy in Advancing the UK's Hydrogen Strategy

by Dr. Emma Guthrie, Chief Executive Officer, Hydrogen Energy Association (HEA)

In the UK, hydrogen policy and strategy are developed across several government departments, with the Department for Energy Security and Net Zero (DESNZ) playing a leading role.

In 2024, DESNZ launched a consultation on Alternative Routes to Market for New Nuclear Projects, to which the Hydrogen Energy Association (HEA) submitted a response.

As the UK's leading trade association for the hydrogen sector, the HEA is well positioned to contribute to such consultations. With over 15 years of experience, the HEA is dedicated to accelerating the development of the hydrogen economy. It promotes and represents the interests of its 100+ members across the hydrogen value chain and advocates for policies that support the sector's growth across all applications and opportunities.

In our response, the HEA highlighted a significant shift in the government's nuclear objectives, aiming to deploy more nuclear power over the next three decades than has been built in the past seventy years. This shift presents a major opportunity for Nuclear-Enabled Hydrogen (NEH) - hydrogen produced using heat and electricity from nuclear power. NEH offers the potential for large-scale hydrogen production, which can support the decarbonisation of the UK's hard-to-abate sectors.

The HEA also noted that advanced nuclear would be a valuable energy source for hydrogen production. We acknowledged the range of different applications associated with NEH and that the government's Low Carbon Hydrogen Standard (LCHS) includes NEH as part of its alternative production pathways. On an energy system scale, using nuclear as an energy source for hydrogen could offer several levels of energy security through strong supplier relations, domestic processing capability, and the long-term storage of fuel. Furthermore, specific aspects of advanced nuclear technology, in terms of operating cost, scale, location, and technology compatibility would be beneficial for hydrogen production.

Since that time, the UK government has published an updated Hydrogen Strategy (December 2024), setting an ambitious target of 10 GW of low-carbon hydrogen production capacity by 2030, with at least half coming from electrolytic (green) hydrogen. Within this strategy, nuclear energy is recognised as a key contributor—particularly through the use of Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs), which can supply both heat and electricity for hydrogen production.

Despite geopolitical challenges affecting the Net Zero narrative, the UK government remains committed to its Clean Power Mission, in which hydrogen is identified as a key enabler. The recent publication of the HAR2 shortlist underscores the government's support for flagship projects that will drive the rollout of low-carbon hydrogen across the UK.

As intermittent renewable energy continues to play a major role in the Clean Power Mission, nuclear power will be essential in providing a stable baseload for hydrogen production. It will also support hydrogen supply for industrial decarbonisation. The HEA looks forward to the forthcoming UK Hydrogen Strategy update, anticipated for the second half of 2025, and strongly advocates for a central role for Nuclear-Enabled Hydrogen within it.

Policy Frameworks for Integrating Nuclear Energy in Hydrogen Production and Other Applications

by Allan Simpson, Chief Technologist, Equilibrion

Nuclear energy has been a reliable generator of electricity for grids around the world for nearly 70 years, yet only around a quarter of society's energy demand is drawn through electricity. The energy transition requires a range of low-carbon energy vectors, and hydrogen can play an important role in decarbonising a number of key energy users including industrial heat, domestic and commercial space heating and production of synthetic hydrocarbons.

Policy frameworks to support the development of these solutions have been maturing worldwide as part of the global Net Zero transition. Leading policies, including those developed in the UK, provide an enabling framework for low-carbon hydrogen production from a range of technologies, including nuclear energy.

At Equilibrion, we work at the interface between nuclear energy and energy demanders, developing projects that build on these enabling frameworks to bring forward new nuclear development, including Small Modular Reactors (SMR) deployment. Lower investment costs and consideration of a flexible role from early on in their design process means SMRs are well suited to this emerging use as part of a global Net Zero transition.

A greater fleet of SMRs can drive significant cost reductions through economies of scale and learning-by-doing. However, delivering on the opportunity requires a careful balance of demand and supply – the investment case for new nuclear will only be achievable where there is a long-term commitment from energy users that can underpin high upfront investment costs.

The Equilibrion team is developing multiple models for how this can be achieved with a range of nuclear technologies, including for the production of hydrogen and synthetic fuels. Our work shows the vital importance of government implementing enabling policy and support mechanisms across both nuclear and end user policies to deliver this vision. For example, the UK's Sustainable Aviation Fuel (SAF) mandate explicitly recognises the role of nuclear heat and electricity as a feedstock for synthetic fuels. Our Eq.flight SAF solution builds on this enabling policy by delivering a solution optimised to use a nuclear energy input, reducing lifecycle carbon emissions of aviation fuel by over 90%.

Mixed use systems, which combine electricity generation with non-electric applications, potentially offer a lower risk deployment profile. These systems can enhance grid stability, provide backup power, and support the integration of renewable energy sources. The Scaling Hydrogen with Nuclear Energy (SHyNE) project aims to demonstrate how this could underpin a future hydrogen economy in the UK through strategic deployment of localised energy production.

Growth of nuclear energy for non-electric applications will require an expansion of sites, and the UK's updated National Policy Statement for Nuclear Energy Generation (EN-7) will be a key enabler for this. By placing the onus for identification and assessment of new sites on developers, the policy provides a more expansive approach to siting and allows for strategic siting nearer to key energy offtakers, potentially overcoming grid constraints.

At Equilibrion, we believe that UK policy frameworks provide a ready opportunity to accelerate the development of new nuclear for non-electric applications and underpin the role of nuclear energy within the future energy system. By setting high standards and pursuing aggressive deployment targets, the industry can position itself as a leader in the global energy transition.

PANEL

Industry Applications and Beyond: Hydrogen, Transport, Heavy Industry Solutions

Moderator

VINCENT ZABIELSKI
PARTNER, NERGY
PILLSBURY WINTHROP SHAW PITTMAN LLP

03

DR. JUSTIN SALMINEN
HEAD OF CARBON PROCESSING PLANT CONCEPT
HYCAMITE

Dr. Justin Salminen is currently the Head of Carbon Processing Plant Concept at Hycamite TCD Technology Ltd since 2024. He has worked with renewable technologies, biomass processing, hydrogen, recycling, extractive metallurgy, critical raw materials, pyro- and hydrometallurgy, lithium-ion batteries, CO_2 - and waste mitigation in companies such as VTT, Outotec (now Metso), and Boliden. Justin has been an adviser for the EU Commission on Raw Material Matters and Co-Chair of the Sustainability Committee in Eurometaux.

Justin graduated from Helsinki University of Technology (Now Aalto University) from Laboratory of Physical Chemistry and Electrochemistry. Master's and Licentiate's thesis were carried out while working at VTT Nuclear Technology. Doctoral thesis was finalized in 2004. After that he was invited to University of California and Lawrence Berkeley National Laboratory, California, USA as Postdoctoral Research Fellow, supervised by Prof. John M. Prausnitz and Prof. John Newman. Justin has been involved 53 peer reviewed papers, guided over 20 Master's - and several PhD thesis.

BRENDAN M. BILTON
CO-FOUNDER & CHIEF TECHNOLOGY OFFICER
ELEMENT 2

Brendan M. Bilton is a qualified Metallurgist and Materials Scientist who has spent over 25 years in the renewable energy sector. In that time, he has been able to raise over £50 million for start-up companies and spinouts from larger organisations. He is a co-inventor on 3 published fuel cell patents and has been active in the fuel cell and hydrogen sector for over 20 years. During that time, he has been the CEO of several hydrogen technology companies and was a founder member of the EU funded Fuel Cells and Hydrogen Joint Undertaking (FCH JU). In June 2020 Brendan co-founded Element 2 Ltd, which is now actively rolling out a UK network of hydrogen refuelling stations.

Brendan was an original member of the Advisory Board for the University of Manchester National Graphene Centre and is currently a member of the Parliamentary Group for Energy Studies (PGES).

MARK ALLAN
GREEN METALS & GREEN STEEL CENTRE LEADER, RESEARCH & TECHNOLOGY LEADERSHIP TEAM
MATERIALS PROCESSING INSTITUTE

Mark Allan MSc BSc MIMMM leads the Materials Processing Institute's Green Metals team and the flagship Green Steel Centre, which works internationally with the steel industry and supply chain, to develop and perfect technologies, materials, processes, and knowledge to decarbonise iron and steel. A Materials Chemist and Renewable Energy Engineer, his experience is in multi-disciplinary industrial and community research and organizational leadership, in the UK and abroad.

His team recently delivered the Primary Steelmaking Options Review for the UK Department of Business and Trade's emerging Steel Strategy.

Panel 03

ARTICLES

Opportunities for Non-Electric Applications of Small Modular Reactors (SMRs)

by Vincent Zabielski, Partner, Energy, Pillsbury Winthrop Shaw Pittman LLP

SMRs represent a significant innovation in nuclear technology, offering flexibility, enhanced safety, and scalability. While much attention has been paid to their use for electricity generation, some of the most promising opportunities lie in non-electric applications, where their compact design and consistent thermal output provide distinct advantages. These opportunities are particularly relevant for industries and regions seeking low-carbon alternatives for heat and fuel-intensive processes.

1. Industrial Process Heat

A major opportunity for SMRs lies in providing high-temperature process heat for energy-intensive industries such as petrochemicals, cement and steel. These sectors require heat in the range of 300°C to over 800°C — temperatures that advanced SMR designs (e.g., high-temperature gas-cooled reactors or molten salt reactors) can reliably provide. Nuclear heat can replace fossil fuel-based combustion, significantly reducing industrial carbon emissions. Because of the enhanced safety parameters of SMRs, they can be co-located at industrial sites and supply electricity and heat directly to energy-intensive industries. One example of a project in this space is the deployment of X-energy's Xe-100 reactors at the Dow Chemical's Seadrift operations site in Texas, a major industrial facility that manufactures plastics and other chemicals.

2. Hydrogen Production

Hydrogen is a cornerstone of the global energy transition, particularly in hard-to-abate sectors like aviation, shipping, and heavy industry. SMRs offer a low-carbon and consistent source of both electricity and heat, making them ideal for clean hydrogen production. Using SMRs in conjunction with electrolysis (especially high-temperature electrolysis) enhances efficiency and reduces the cost of hydrogen compared to conventional methods. This has particular potential in regions with limited renewable energy capacity or land availability, where nuclear can ensure a stable hydrogen supply.

3. Desalination of Seawater

Water scarcity is a growing concern, especially in arid regions such as the Middle East and parts of Africa and Asia. SMRs can be integrated with multi-effect distillation (MED) or reverse osmosis (RO) desalination technologies to provide both the electricity and thermal energy required. The advantage of SMRs in this application is their ability to operate in off-grid or remote locations with high reliability, making them ideal for coastal communities or industrial hubs where freshwater access is limited.

There are real-world examples—both historical and current—of nuclear energy being used for desalination. In India, the Kalpakkam Nuclear Desalination Plant near the Madras Atomic Power Station in Tamil Nadu provides ~6,300 cubic meters/day (~1.7 million gallons/day) with a hybrid system using Multi-Stage Flash (MSF) and RO desalination. The Plant supplies potable water for both the power station and surrounding areas.

4. District Heating and Combined Heat and Power (CHP)

In colder climates or urban centers with centralized heating networks, SMRs can provide district heating by supplying consistent thermal energy to buildings and homes. When configured for Combined Heat and Power (CHP), SMRs can simultaneously generate electricity and heat, maximizing fuel utilization. This application is particularly relevant in regions such as Northern and Eastern Europe that have large district heating networks.

Hycamite Process for Low-Carbon Hydrogen and Graphite

by Dr. Justin Salminen, Head of Carbon Processing Plant Concept, Hycamite

Hycamite splits methane to produce low-carbon hydrogen and industrial-quality solid carbon allotropes. It is based on the thermo-catalytic decomposition (TCD) of methane molecules with our proprietary catalytic process and heat. The novel methane-splitting technology requires less energy than hydrogen production by electrolysis and enables local production of the critical material, graphite.

The source for hydrogen can be biomethane, methane from natural gas, or synthetic methane. As a cutting-edge carbon capture, utilization, and storage (CCUS) technology, Hycamite's solution enables the creation of carbon sinks when using biomethane.

Based on years of research at the University of Oulu, Hycamite independently develops industrial-quality carbon suitable for demanding carbon applications, such as Li-ion batteries, tires, conductive polymers, and other graphite and carbon fibre applications.

Hycamite was founded in 2020 and is a privately owned company headquartered in Kokkola, Finland. It recently built its first industrial-scale facility in Kokkola Industrial Park (KIP). The plant has a nominal annual capacity of two kilotons of hydrogen and six kilotons of carbon products. In March 2025, the European Commission selected Hycamite as a Strategic Project under the Critical Raw Materials Act (CRMA).

Element 2 Ltd: Pioneers of Low Carbon Hydrogen Refuelling

by Brendan M. Bilton, Co-Founder & Chief Technology Officer, Element 2

Element 2 Ltd is driven by a vision to create a cleaner, more sustainable future. The mission is to accelerate the adoption of hydrogen as a primary fuel source for vehicles where battery electric powertrains are not fit for purpose.

At the heart of Element 2 Ltd's business model is the development and deployment of hydrogen refuelling stations, using off-the shelf solutions, proven in other markets. These stations are strategically located to support the roll out of hydrogen powered vehicles, with a focus on heavy duty trucks, buses and light commercial vehicles. Element 2 Ltd aims to overcome one of the major barriers to the widespread adoption of hydrogen-powered transportation.

The other principle barrier for hydrogen vehicles is the cost and availability of low carbon hydrogen in the UK. Use of constrained solar of wind is a solution but for a reliable, continuous source of hydrogen nuclear or hydro offer better solutions. Distribution is an added expense as a 40 ft tube trailer with the maximum 44 T capacity in the UK can only utilise 1,000kg of hydrogen. Therefore, a distributed network of hydrogen supply reduces logistics cost and improves network resilience. SMR's linked to large electrolysers and distributed across the UK would provide a solution to this problem.

Strategic Partnerships

To amplify their impact, Element 2 Ltd has forged strategic partnerships with various stakeholders, including governments, automotive manufacturers, and energy companies. These collaborations are crucial in expanding the hydrogen refuelling network and promoting the benefits of hydrogen as a clean energy source.

Element 2 has also partnered with a leading fuel card provider, Radius Group, to provide a retail settlement process using existing fuel cards. This will allow for fleet operators to keep their existing diesel fuel cards and use them for hydrogen dispensing. A new programme of "50 in 5" is being launched later this month, to have at least 50 hydrogen refuelling stations in operation by 2030.

Supporting Transition to a Hydrogen Economy

Element 2 Ltd is not just a company but a catalyst for change. Their efforts support the broader transition to a hydrogen economy, where hydrogen plays a pivotal role in various sectors, from transportation to industry. By laying the groundwork for a robust hydrogen refuelling infrastructure, they are enabling a future where clean energy is the norm rather than the exception.

Future Growth and Expansion

Looking ahead, Element 2 Ltd has ambitious plans for growth and expansion. They aim to significantly increase the number of hydrogen refuelling stations across key regions, ensuring comprehensive coverage and accessibility. This expansion is aligned with global efforts to reduce reliance on fossil fuels and embrace renewable energy sources.

In conclusion, Element 2 Ltd is a trailblazer in the hydrogen refuelling sector. Their innovative solutions, strategic partnerships, and unwavering commitment to sustainability position them as leaders in the transition to a greener future. As hydrogen technology continues to evolve and gain traction, Element 2 Ltd will undoubtedly play a vital role in shaping the energy landscape of tomorrow.

Presentation Teaser

Mark Allan, Green Metals & Green Steel Centre Leader, Research & Technology Leadership Team, Materials Processing Institute

> ***"Fossil-free iron and steel are starting to break through as materials of choice for responsible procurement in a sustainable economy; however, a step change in energy supply is needed both to extract iron from iron ore and to blend it with recycled steel and process it into high-performance products. The production of next-generation alloys for nuclear energy and hydrogen infrastructure also requires a step change in production scale."***

Mark offers a perspective from MPI's Green Steel Centre and Advanced Materials Development Centre, where both sides of the picture are being brought closer to commercial reality.

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