DELIVERINGDECARB

DECEMBER 2024

xoserve

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Welcome to the final DeliveringDecarb newsletter of 2024!

As 2024 draws to a close, we reflect on the strides made towards decarbonising Britain's gas network and look forward to the year ahead. This December edition of DeliveringDecarb shines a spotlight on hydrogen and its crucial role in forging a sustainable energy future.

We bring you insights from industry experts, exploring hydrogen's potential in power generation, the evolving landscape of hydrogen production, and the challenges and opportunities these present. We also delve into DESNZ's response to the Hydrogen to Power consultation, and gain valuable perspectives from Centrica's analysis on integrating hydrogen within the future energy system.

Thank you for your support and engagement throughout 2024. We look forward to continuing our progress towards a decarbonised energy future next year.

Merry Christmas!

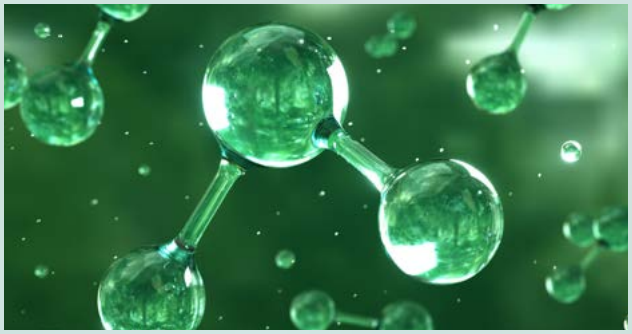
01 Notable news

Fife hydrogen network is complete and will start in 2025

SGN has completed the construction of the world's first domestic hydrogen gas network in Levenmouth, Fife. The 8.4km network will deliver green hydrogen from a 7MW offshore wind turbine to homes in 2025. Residents can participate in a trial, using hydrogen-fueled boilers and cookers.

The project will inform UK low-carbon policy decisions expected in 2026. SGN is training gas engineers to work with hydrogen and partnering with Fife College to create a hydrogen training facility. The Xoserve Decarbonisation Team has also worked closely with the SGN Team to deliver H100.

Discover more about this milestone



University experts give recommendations on tackling key hydrogen policy challenges.

Policy@Manchester, the policy engagement unit of the University of Manchester, has released 'On Hydrogen.' The report provides expert analysis and policy recommendations from university researchers on tackling key hydrogen policy challenges facing the UK.

Baroness Brown of Cambridge warns that 'the hydrogen bubble has burst.' She highlights the need for the UK Government to take 'bold steps to ensure we grow this industry in the UK – it could start by committing to a no regrets investment in a strategic reserve of hydrogen to support our electricity system.'

Key policy recommendations include:

- Expand the Industrial Decarbonisation Challenge competitions to include deployment and cluster plans for small industrial emitters.
- Bring forward the implementation of the carbon border adjustment mechanism from 2027 to 2025.
- Fund research and modelling to compare potential electricity-based vs. hydrogen-based and carbon capture supply chains for decarbonising small industrial emitters.

Read the full publication

01 Notable news

DESNZ published its stocktake on Hydrogen Combustion in Industry and Power

The Department for Energy Security and Net Zero (DESNZ) has published a stocktake report on the development of regulations and standards for 100% hydrogen combustion equipment in industry and power. The report includes responses from the British Standards Institution (BSI), the Institution of Gas Engineers and Managers (IGEM), and the Health and Safety Executive (HSE).

The findings highlight the importance of developing and implementing robust regulations and standards to ensure the safe and efficient use of hydrogen combustion technologies. It also identifies key areas for future work, such as the development of hydrogen-specific standards and the need for further research into the impacts of hydrogen combustion.

The stocktake concludes by providing a series of recommendations on standards, health and safety, and environmental regulations for Government action.

These recommendations include:

- Providing funding to support the development of hydrogen-specific standards.
- Continued and increased strategic collaboration, regular dialogue, and guidance regarding long-term policy objectives to assist organisations in understanding where existing or new standards can support these objectives.
- Supporting research into the impacts of hydrogen combustion.
- Engaging with devolved administrations on potential regulatory changes.

Download the full stocktake

OIES published its Electricity, Green Hydrogen, and the Energy Transition report

The Oxford Institute for Energy Studies (OIES) has released a new report exploring the roles of electric power and green hydrogen in achieving the energy transition. The analysis focuses on the European Union (EU) but also draws on experiences from the UK, the US, and other regions.

The key findings of the report include:

- Power generation from renewable wind and solar sources is widely agreed to be the primary means for decarbonising the electric power sector.
- The International Renewable Energy Agency forecasts the use of fossil fuels in total final energy consumption (TFEC) to fall from 63% in 2020 to 12% in 2050 and direct use of electricity to rise from 22% to 51% over the same period.

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- They also forecast renewable sources to account for 91% of direct electricity use in 2050 and for green H2 to rise from negligible amounts in 2020 to about 13% of TFEC in 2050.

Recommendations from the report include:

1. Prioritise electrification for decarbonising end uses wherever feasible.
2. Support policies that encourage competition among all net zero-emission technologies.
3. Develop innovative market models to stimulate demand for green products.
4. Implement robust criteria to ensure that green hydrogen production contributes to expanding renewable energy capacity.
5. Adopt a phased approach to green hydrogen development, starting with pilot projects located near existing industrial users.
6. Develop common certification criteria for green hydrogen to facilitate international trade.
7. Address safety concerns related to green hydrogen.

Download OIES's insights

Biomethane to "gradually replace natural gas in final energy consumption", says report

A new report by Frontier Economics, commissioned by Eurogas, highlights the crucial role of gases in ensuring a secure, affordable, and sustainable energy system for Europe. The report, "Ensuring Resilience in the European Energy Transition: Strategic Use of Gases to Deliver EU Climate Ambition," shows the importance of natural gas, renewable and low-carbon gases in achieving a net zero energy transition by 2050.

The report finds that by 2050 gases will remain crucial in final energy demand. Furthermore, "hydrogen and its derivatives may emerge as the second-largest energy carrier, with biomethane gradually replacing natural gas in final energy consumption." Based on these findings, Eurogas urges European leaders to prioritise rapidly phasing in renewable and low-carbon gases and using existing infrastructure.

Andreas Guth, Secretary General of Eurogas, states that natural gas, renewable and low-carbon gases are "essential to a resilient energy system that not only safeguards Europe's industrial competitiveness and

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stabilises energy prices, but also provides the flexibility needed to adapt to evolving circumstances as we move towards net zero."

Read the full report

Join us in January for our upcoming issue, where we will focus on biomethane.

OEUK believes Scotland's hydrogen export strategy can open doors worth £93 billion

Offshore Energies UK (OEUK) reports that Scotland's new hydrogen export strategy can leverage the nation's industrial strengths and create a £93 billion export opportunity. To achieve this, OEUK emphasises the need for a clear action plan to attract investment and talent. The strategy includes the development of hydrogen transportation and storage infrastructure, as well as the integration of hydrogen into the national gas grid to help launch the hydrogen market.

OEUK emphasises the importance of price support mechanisms, such as contracts for difference, to scale low-carbon hydrogen production. However, these should be 'gradually displaced as businesses turn a profit and invest'. The report from OEUK highlights a substantial opportunity for UK firms, driven by investments outside Europe.

OEUK Director of Sustainability & Policy, Michael Tholen urges policymakers to ensure UK firms 'do not get left behind in the race for this prize' and calls for a modern industrial strategy that provides companies with 'the long-term, globally competitive policies they need to invest across our energy mix and lead the world.'

Read the full story

02 Spotlight on...

This month, two major hydrogen reports were published: one from the UK Government and another from industry, both on hydrogen's role in the energy transition.

DESNZ published its response to the Hydrogen to Power consultation

The Department for Energy Security and Net Zero (DESNZ) has published its response to the consultation on a Hydrogen to Power (H2P) market intervention. Based on the feedback received, the Government is committing to introducing a business model to support H2P deployment.

The business model will be based on a Dispatchable Power Agreement (DPA)-style mechanism, similar to the one already in place for power with carbon capture, usage and storage (CCUS). Plans for Hydrogen to Power were also reiterated in the Government's Clean Power 2030 Action Plan, alongside recognition of the vital role of production and storage in a hydrogen economy.

The next step is to create a detailed design of the H2P business model, which will require further engagement with stakeholders. The Government plans to release a market engagement document in Spring 2025 outlining its approach to designing the business model.

For the key highlights, read our latest blog

Or download the full response

Centrica explores how the UK could design the future energy system

Centrica and FTI Consulting explore the potential role of hydrogen in the UK's transition to net zero in a new report. Developing a whole-systems approach to explore pathways to Net Zero emphasises that while 'technological advances and reductions in the cost of renewables mean that electrification is likely to deliver the lion's share of change,' hydrogen could play a vital role in decarbonising specific sectors and ensuring the resilience of the energy system.

It also highlights the importance of a whole-systems approach to analyse the energy system, considering the interdependencies between hydrogen, electricity, and natural gas.

Some of the key insights from the report include:

- Hydrogen electricity generation is likely to

02 Spotlight on...

be the only way to cost-effectively replace the balancing role currently fulfilled by unabated gas generation within a secure, decarbonised and renewables-dominated electricity system.

- The value of hydrogen in both production and consumption will differ in Britain across locations and periods.
- The development of a hydrogen transport network, and sufficient large-scale storage facilities, will be necessary to establish a hydrogen market.
- The build-out of flexible green hydrogen production would complement the expansion of renewable generation capacity, serving as a value-enhancing off-taker during times of excess renewable production.

Access the full report

The UK Government has reaffirmed its commitment to low-carbon hydrogen as a cornerstone of its clean energy transition

Key developments include:

- Hydrogen Production Scaling Up: New funding of £21.7 billion is enabling projects through the Hydrogen Allocation Rounds and Carbon Capture, Utilisation, and Storage (CCUS) Cluster Sequencing.
- Low Carbon Hydrogen Standards: Updates to the certification scheme will ensure robust greenhouse gas thresholds for hydrogen production.
- Infrastructure Expansion: Progress on hydrogen transport and storage business models, aiming to operationalize key infrastructure by 2030.
- Blending Insights: Strategic consultations on blending hydrogen into existing gas networks are planned for 2025.

These initiatives underscore the UK's leadership in hydrogen innovation and integration across industries and infrastructure.

Read the full report

03 Policy milestones

Here are key Government Energy policy/regulatory milestones:

- **2024** - Future systems operator NESO appointed
- **2024** - Health and safety case expected on hydrogen blending
- **2025** - Energy Bill expected to complete
- **2025** - Smart meter rollout
- **2025** - Hydrogen blending in domestic networks (at the earliest)
- **2025** - H100 trial to commence
- **2025** - New business models for hydrogen transport and storage infrastructure designed
- **2025** - Hydrogen certification scheme introduced
- **2025** - Target for reaching 1GW electrolytic hydrogen production capacity and price competitive annual allocation rounds
- **2026** - Final policy decision on whether hydrogen will support domestic heating
- **2026** - MHHS (Marketwide Half Hourly Settlement) begins
- **2030** - New target for creating up to 10GW low carbon hydrogen production
- **2030** - Hydrogen town trial to commence
- **2030** - UK Clean Power target

04 Dates for your diary

We have loved seeing you at our Hydrogen Information Sharing Groups this year! We wish you a Merry Christmas and look forward to welcoming you back in the New Year, with our first forums of 2025 scheduled for February.

To join, please email:
decarbonisation@xoserve.com

05 Keeping in touch

If you've found any of the topics in this month's newsletter particularly interesting, please get in touch or share your comments on LinkedIn, tagging @Xoserve.

You can also delve deeper into decarbonisation with our Decarb Discussions podcast, which covers topics from different industry perspectives. To get involved and have your voice heard on our podcast channel, please get in touch.

To help you stay ahead of the curve, we've created the Decarbonisation Knowledge Centre, for the latest news, exciting new projects, and important policy updates. We're confident you'll find a wealth of valuable resources on decarbonisation. If you'd like to suggest any ideas, please contact:

decarbonisation@xoserve.com