



The Hydrogen Energy Association's response to the Department for Energy Security and Net Zero consultation: 'Building the North Sea's Energy Future'.

25th April 2025

Opening remarks

This submission from the Hydrogen Energy Association (Formerly the UK Hydrogen and Fuel Cell Association) is in response to DESNZ's consultation: 'Building the North Sea's Energy Future'. The Hydrogen Energy Association (HEA) is the leading pan-UK trade body in the hydrogen energy sector, with a mission to support the growth of our members and the sector, and to ensure that the right policy framework is in place. Our member companies represent over 200,000 employees globally, with combined revenues of over £400 billion, and cover the entire value chain from raw material sourcing, to supply chain and components, financing, professional services, B2B and consumer facing solutions.

With over 15 years of experience, the HEA is a leader in advocating for and accelerating the transition to Net Zero in the UK through the deployment of hydrogen & fuel cell solutions. We promote and represent our members' interests across the hydrogen space, and campaign for the best policy outcomes for the industry across the full range of applications and opportunities.

Summary:

There is no doubt that establishing world-leading North Sea oil and gas supply chains has been central to the development of the UK economy, and will continue to be for a number of years. Yet as this sector continues to decline amid an increasing focus on Net Zero, the HEA welcomes the government's recognition that transitioning from oil and gas to clean energy presents a significant opportunity for the future of the North Sea industries, as well as the UK economy as a whole.

The hydrogen sector will be a key component of this future growth. Should the UK obtain a 10% share of the hydrogen technology market alone, it could deliver £70bn revenue and £46bn GVA per annum to the UK economy by 2050, as well as 410,000 jobs. Such jobs include engineering,

construction, manufacturing, and service sectors, among others. The supply chain gaps that could limit this opportunity are well recognised, yet the existing skills and resources in the oil and gas sector have the potential to offset this shortage. In doing so, there is a double benefit of keeping existing oil and gas jobs in circulation whilst supporting the UK's ambition of becoming a world-leading hydrogen economy. For this to happen, there must be appropriate mechanisms and processes in place to allow the transition of supply chains.

Question 2: What, if any, additional measures could help the oil and gas workforce to transition into a) clean energy and b) other industrial strategy sectors?

The HEA supports the introduction of various mechanisms to facilitate the opportunities for oil and gas workers, including the Office for Clean Energy Jobs, Energy Skills Passport and the Regional Skills Pilots. These measures will be particularly important for transitioning jobs to the hydrogen sector, in which new technology applications present specialised skill requirements. To prevent hindering the adoption of new hydrogen technology and innovation, it is essential for the specified measures to anticipate the future skill requirements so as to expedite the development of appropriate training solutions in the future. For oil and gas workers transitioning to the hydrogen sector, an understanding of the hydrogen skills 'delta' is necessary to determine what skills, knowledge and behaviours are already embedded and what needs to be taught. Understanding the delta will ensure employees can reach competency at optimum pace, and the unnecessary cost of duplicating training is avoided.

The HEA supports the regional focus of the measures outlined in this consultation to help oil and gas workers transition to clean energy; each geography has its own supply chain context that cannot be generalised under one policy. That said, in order to fulfil the UK's ambition of building a hydrogen economy from scratch and at pace, it is crucial that the hydrogen supply chain is afforded sufficient sector-specific consideration in its own right. There must be a clear and accessible hydrogen skills framework to facilitate oil and gas workers pursuing a career in hydrogen. Working with the Hydrogen Skills Alliance (HSA) to produce a 'Strategic Skills Plan for the UK Hydrogen Economy', the HEA echoes their recommendation for the government to support the establishment of a national Hydrogen Skills Academy.¹ This academy would serve as a network of excellence for aggregating and delivering hydrogen-related skills via regional hubs, ensuring high-quality hydrogen skills can be delivered at a time and place needed by employers. This recommendation complements the aforementioned Regional Skills Pilots with its focus on creating a regional network whilst also allowing for a hydrogen-specific framework. The HEA advocates for the Office for Clean Energy Jobs, Energy Skills Passport and the Regional Skills Pilots to be aligned and interlinked with a Hydrogen Skills Academy.

¹ https://cogentskills.com/wp-content/uploads/2025/01/Hydrogen_Skills_Alliance_Plan25_final.pdf

Question 7a - 7g: What potential barriers exist for current oil and gas supply chains

The most affected areas of the oil and gas supply chains will be the upstream processes of exploration and production, which require the most specialised workforce and infrastructure. Unless retraining and reskilling programmes, such as those mentioned in Question 2, are successfully implemented, these areas of the supply chain could see heavy job losses and displacement. Current barriers that will prevent the transition of oil and gas workers to hydrogen include an absence of upskilling and education programmes designed to reduce disparities in training, as well as a general lack of awareness of alternative fields of work. In its Workforce Assessment², the HSA also highlighted issues including competing skills and labour shortages across high-growth sectors, such as civil, control and infrastructure engineers, pipe welders and mechanical and pipe fitters, as well as uncertainty around workforce demand, lack of training provider capacity and lack of regulator expertise at a local level.

At a high level, policy uncertainty is compounding the barriers preventing oil and gas workers transitioning to hydrogen. Employers are reluctant to invest in skills, particularly in those training to competence, such as apprentices, due to continuing uncertainty of demand. Policy shifts and political dynamics create an uncertain foundation both for employees and employers. This uncertainty extends to the industry's future, making long-term planning challenging, particularly when adopting new and innovative technology. There is a critical need for the government to take de-risking measures to unlock anticipatory investment in skills and thereby reduce spiralling wage costs and better manage skilled migration.

In addition to the measures mentioned in Question 2, a way of supporting these particular aspects of the supply chain is to practise localised information dissemination, targeted at informing oil and gas workers of their employment options and opportunities in clean energy industries, of which hydrogen has one of the highest rates of potential transferability. Similarly, oil and gas companies should be informed of the opportunities for pivoting their operations and infrastructure into the hydrogen industry.

The technological and labour expertise of oil and gas companies involved in the North Sea overlaps significantly with the UK's growing base of hydrogen technology supply chain companies, which have world-class scientific foundations and an increasing range of projects. Whether it is process engineering and plant design, high-pressure storage and transportation, pipeline infrastructure, risk management, or instrumentation and control, the oil and gas sector has the world-leading offshore and onshore expertise to support the establishment of an equally competitive hydrogen sector. This expertise, combined with the UK's #7 rank in the Renewable Energy Country Attractiveness Index based on investment and deployment opportunities³, means

² https://cogentskills.com/wp-content/uploads/2025/01/Hydrogen_Skills_Alliance_Plan25_final.pdf

³ <https://www.ey.com/content/dam/ey-unified-site/ey-com/en-gl/insights/energy-resources/documents/ey-recal-62-v9-final.pdf>

the UK's North Sea industries have a perfect opportunity to pivot into one of the fastest-growing clean energy economies in the world.

To allow UK supply chain companies to be competitive in accessing growing clean energy sectors in the North Sea, the government must not only adopt a proactive position to help transition the supply chains of the oil and gas industries but also invest heavily in clean energy industries, including hydrogen, so that there is sufficient market growth to accommodate this transition. The Hydrogen Innovation Initiative (HII), focused on supply chain development through innovation, describes how the UK can capitalise on early mover advantage and assume a sizeable share of the global market.⁴ HII identifies four strategic areas of opportunity that represent the biggest potential for UK industry and will provide export-led, high-growth markets for domestic supply chains. These are the production of hydrogen and conversion into carriers, propulsion systems for transport, industrial hydrogen for feedstock, heat and power, and end-to-end hydrogen storage. If the government fosters sufficient investment into homegrown supply chains, UK companies could obtain as much as 10% share of the global hydrogen technology market, much of which will include investment into North Sea infrastructure and communities.

Coupling the leading offshore clean energy capabilities in the North Sea with hydrogen production and storage would allow the UK to become an exporter of hydrogen. Germany, the Netherlands, and Belgium, all with hydrogen import strategies and limited production capabilities, could be potential export markets. The leading UK port facilities shaped by the oil and gas industries can be developed or retrofitted to become international hydrogen export hubs.

⁴ <https://hydrogeninnovation.co.uk/wp-content/uploads/2024/04/UK-Hydrogen-Innovation-Opportunity.pdf>