OFFSHORE ENERGIES UK

ECONOMY & PEOPLE REPORT 2024

Integrated insights into the economic contributions and workforce dynamics of the offshore energy sector

OEUK OFFSHORE ENERGIES UK

An integrating offshore energy industry which safely provides cleaner fuel, power and products for everyone in the UK.

Working together, we are a driving force of the UK's energy security and net zero ambitions. Our innovative companies, people and communities add value to the UK economy.

OEUK.org.uk

ECONOMY & PEOPLE REPORT 2024

Contents

Foreword	4
Report in summary	6
The offshore energy sector and the economy	8
Economic context	9
The offshore energy sector's potential	10
Developing new opportunities for people and the economy	13
Cross sector opportunities	13
Industry actions to attract and retain skilled workers	16
In focus - the contribution of the oil and gas sector	21
Investing in a homegrown energy transition	24
The North Sea Transition Deal	26
Supply chain development	27
Responsible oil and gas investment	29
Offshore wind	32
CCS	35
Hydrogen	39

Foreword

Dave Whitehouse,
Chief Executive Officer
Offshore Energies UK

Our *Economy & People Report* comes at an important time for the country. The choices made this year have the potential to shape our future for decades to come. Our report sets out clear facts and evidence that can help inform those decisions which must lead to a homegrown energy transition.

The opportunities in the UK energy sector to transform how we power our society are inspiring. A homegrown energy transition is one that uses the expertise of our highly skilled workforce to deliver the projects needed for net zero. If we get this right, we can protect and create jobs and provide greater economic contributions in more vibrant energy communities. We can do all of this while producing secure, reliable and sustainable energy.

Our offshore energy sector supports hundreds of thousands of good jobs. We are committed to collaboration between employers, trade unions and industry bodies to ensure high standards and fair and equitable conditions for workers.

This report aims to grow recognition and deepen understanding of the vital role that these skilled people play in the economy, energy security and reaching net zero. Policy makers should be motivated to support them to realise the sectors full potential.

Our people and companies are proud of their contribution, but their potential is at risk. A stable economic environment, fair investment conditions and certainty about the pipeline of future projects are vital to drive progress and positive change.

Creating more jobs, and adding more to the economy, depends on how effectively we can scale up supply chain capacity, manage our oil and gas production and advance offshore wind, carbon capture and storage and hydrogen. These will help transform our industrial and economic future.

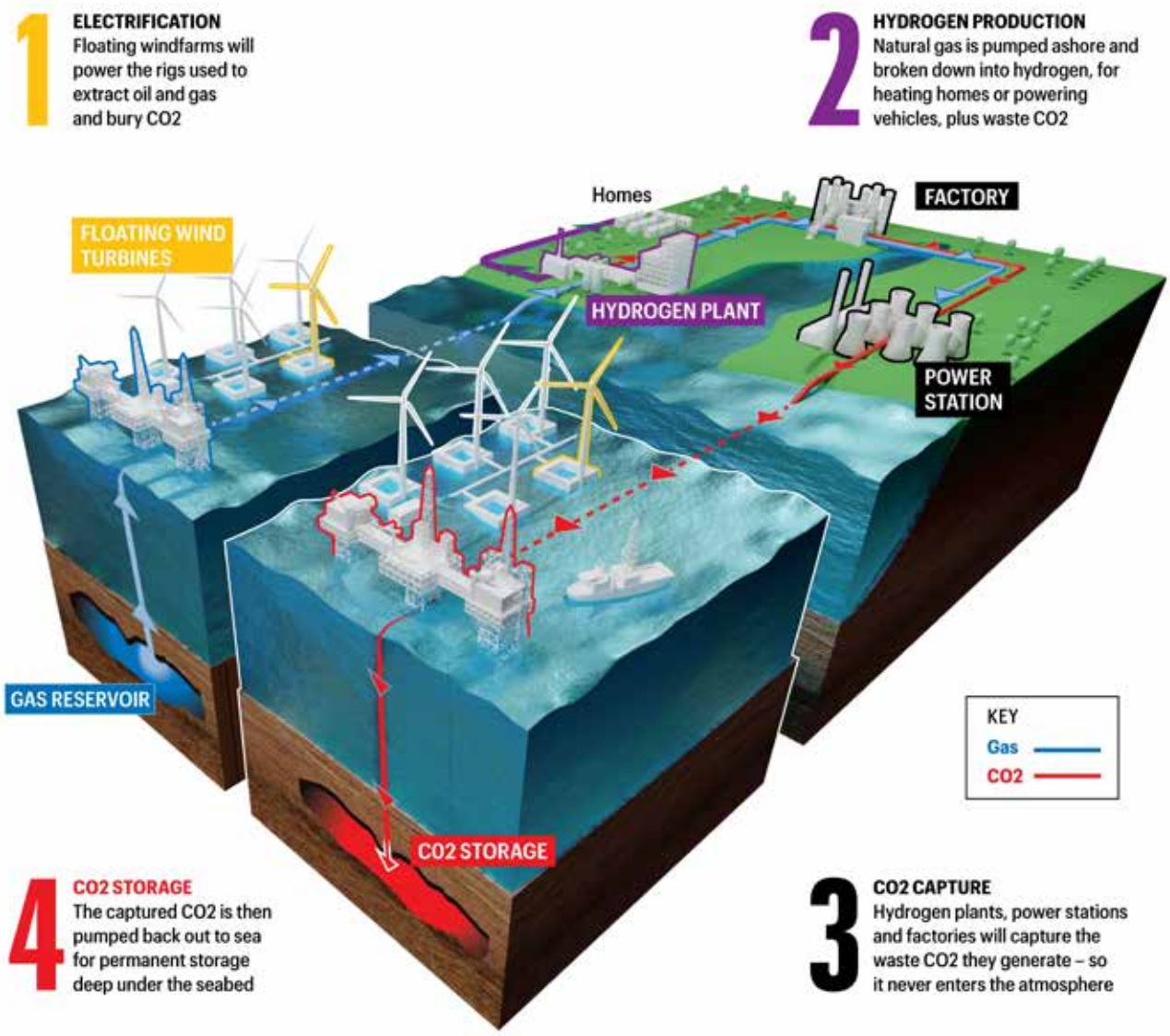
But other parts of the world are moving faster with energy projects than we are, creating a risk that investment, companies and skilled and mobile workers will be lured away. A homegrown energy transition could become an imported one instead, with other countries seizing the opportunities we could have realised here.

Our report sets out the actions our industry is taking to create new pathways and opportunities for our people. It shows the potential for adapting current expertise - and how new entrants to the industry can be part of the solution, driving innovative change to deliver the lower carbon energies of the future.

Much being set out by political parties aligns with what industry needs. It is important that we use that consensus as a platform to move forward.

The UK offshore energy sector has built an industry capable of delivering a secure, skilled, and sustainable future. The path to success builds on our strengths and puts people at the centre of the energy transition.

Skills, sustainability and security. That's what choosing a homegrown energy transition offers. The people in our industry are ready to work with all to deliver it.



Oil & Gas | Hydrogen | CCUS | Offshore Wind

1. Report Summary

Key facts

The transition to net zero emissions offers a big opportunity for the UK economy

- Private sector investment is a catalyst for growth – moving to net zero will need more than £1trillion of investment
- The offshore energy sector is ready to spend £450bn on projects in the next 15 years

- This means 50% more capital expenditure in 2040 than now
- But there is uncertainty. Conditions need to be right to unlock activity
- Large onshore energy and infrastructure projects also require capital and people

Offshore wind is growing but struggling to hit the government target of 50 GW by 2030

- Projects need a faster consenting process and access to the grid. Continued market reform is also important

Oil and gas production is at record lows and set to keep falling

- Decline rates can be halved, supported by a competitive and stable tax regime and continuing licence rounds
- This can be delivered while cutting emissions – already down **24%** since 2018 and in line for 50% by 2030

The first CCS cluster projects are moving toward investment decisions

- But clarity is still needed on long-term government support. Work is needed to create a self-sustaining market

The country is aiming for 10 GW of low-carbon hydrogen production by 2030

- A project pipeline to deliver this is emerging, but business models still need to be confirmed. Stronger links between production, transport and storage are needed, along with support to stimulate demand

154,000 jobs are directly or indirectly related to offshore energy

- 120,000 of these are in oil and gas and more than 80,000 more are induced in communities
- That means oil and gas supports more than 200,000 UK jobs. And their work supports £25bn in economic gross value add (GVA)

OEUK's Industry Manifesto lists what needs to be done to secure the benefits of a homegrown energy transition

The offshore energy sector can contribute more over the decade, but only if more final investment decisions are taken

Supply chain companies have most of the capabilities needed for projects in new areas, but more capacity is needed

- Companies need to have confidence to invest in capacity. This is important for UK jobs and value. More certainty is needed

OEUK is acting to provide pathways not only for workers to move into new projects across the UK but also to attract a diversity of new talent

- There is up to 90% compatibility between existing oil and gas skills and those needed for offshore wind, CCS and hydrogen projects
- Reformed apprenticeships will help encourage new entrants to the sector

2. The offshore energy sector and the economy

Key messages...

- UK economic performance is showing signs of improving after years of relatively low growth. Sustaining and boosting performance is a national priority. The people and companies in the offshore energy sector are developing projects that will support this while providing secure energy supply and lower emissions.

- The industry is acting, and OEUK's Industry Manifesto shows what is needed to help it to achieve its full potential.

- A joined-up and aligned approach across industry and with governments is needed if we want to achieve that opportunity. Policy uncertainty is holding back activity. Time is of the essence.

- Getting things right will lead to more skilled jobs and greater economic success for communities across the country.

- Clear skills development and transfer pathways will allow today's workforce to access these opportunities. Alongside this, work is ongoing to improve the flow of diverse talent into the sector.

Economic context

The UK's transition to net zero emissions offers a huge opportunity to reset and reconfigure the nature of the entire economy, building fresh industrial capability alongside our traditional strengths. But it will require over £1 trillion of private and public investment, and will have impacts on most sectors and every region in the country.

The offshore energy sector's people and companies are developing projects to deliver lower carbon energy supplies and support the decarbonisation of other sectors. This creates new, and protects existing, industrial activity across the country.

Relatively weak growth and high inflation have squeezed living standards in recent years. Gross domestic product (GDP), often measured on a per capita basis, is only just recovering from declines during the pandemic. Growth was 0.1% in 2023, and the UK slipped into a mild recession in the second half of the year before seeing some recovery in early 2024. A growing economy is an important indicator of higher incomes, more jobs and higher productivity. Stimulating economic growth is therefore a key priority for all parties aiming to form the next government.

The benefits of a growing economy need to be felt by communities across the country. The offshore sector's geographic spread and high economic productivity mean it is well placed to support this, but it needs the right investment conditions.

Stakeholders need to understand the impact that policies can have on each sector's contribution to growth. In the case of the offshore energy sector, the right policies can unlock opportunities to create growth and fresh jobs. Equally, it is helpful for people within the industry to be able to confidently articulate what the sector brings, and how their work is important to sustaining and growing this.

What is GDP and why is it important?

Economic performance is generally measured by changes to GDP, which is the value of all the goods and services produced in a country within a specific time frame. When GDP grows it is a sign that the economy is performing well, and vice versa.

The offshore energy sector's potential

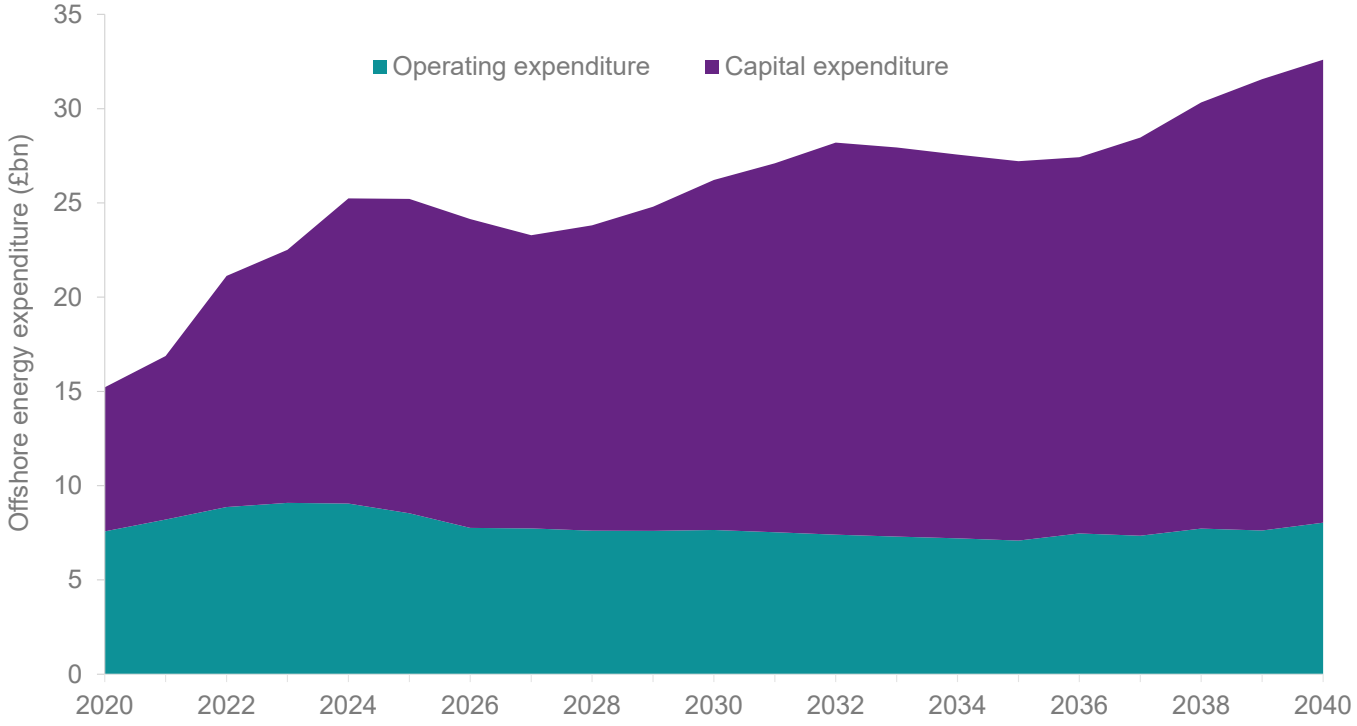
The UK's offshore energy resources will play an important part in shaping the UK's economy and energy system in the decades to come, helping to decarbonise the economy and cutting energy imports while also stimulating economic growth and creating jobs across the skills spectrum.

But achieving this potential will require a step up in offshore energy investment and supply chain capacity. As outlined in OEUK's Business & Supply Chain Outlook, around £450bn could be spent on developing, operating, decommissioning or repurposing infrastructure between 2024 and 2040. Capital and operational expenditure (capex and opex) in offshore wind, carbon capture and storage (CCS) and hydrogen could exceed £300bn by the end of the 2030s. That is twice the remaining spend in oil and gas, including decommissioning.

Overall spending could rise from £25bn/year now to around £32bn/yr during that time. This growth will be driven by capex, which could increase by around 50% compared with today, or almost three times more than in 2020. It could move from being half of the total to around three quarters in the 2030s. Higher capex also means new opportunities, whereas a profile dominated by opex is about maintaining output. This is a significant shift that the sector needs to be ready to deliver.

A full review of the UK's offshore energy sector opportunities may be found in OEUK's *Business & Supply Chain Outlook*, available here

Figure 1
Offshore energy capex and opex outlook

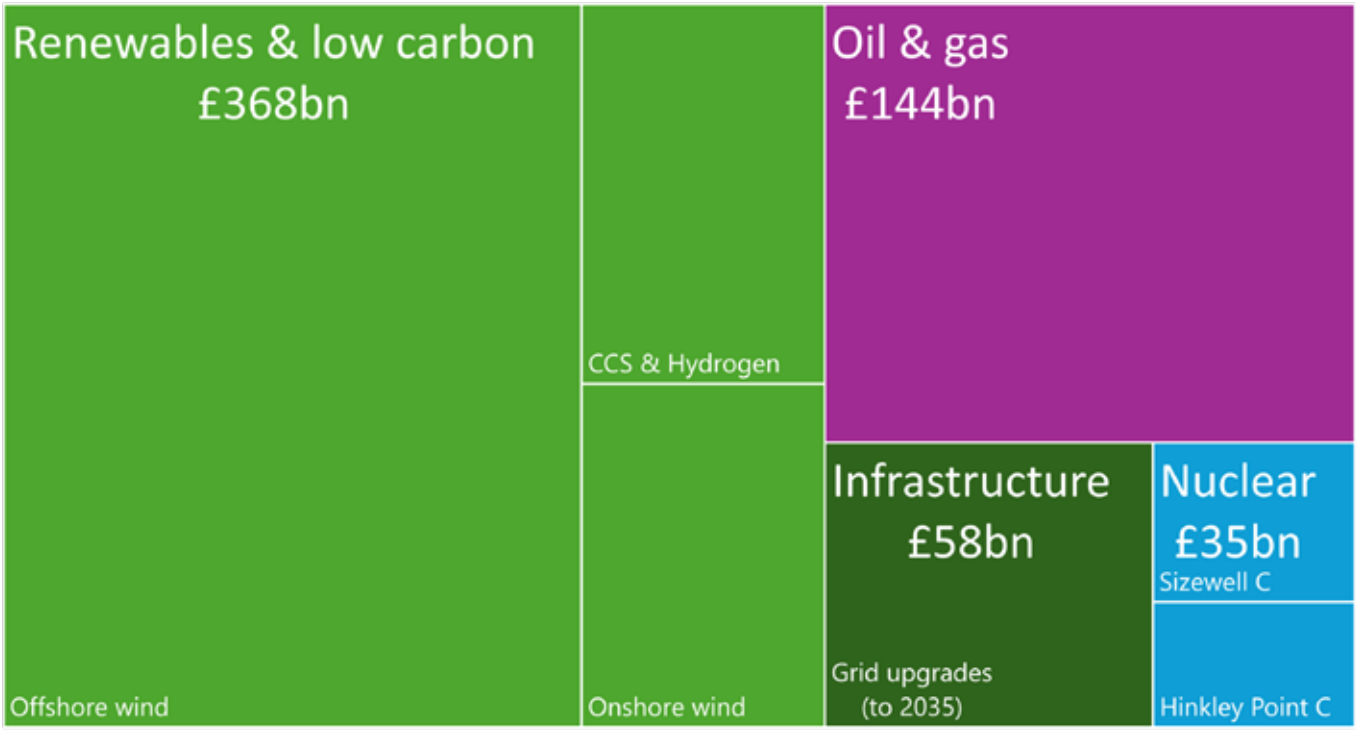


Sources: OEUK, NSTA, Rystad

Offshore developments are just part of a wider expansion of the UK's energy system and infrastructure, with major onshore projects also being progressed.

Over and above the offshore spend, there is an estimated £58bn investment required to upgrade the power grid to meet 2035 decarbonisation targets and onshore wind could see over £50bn of new projects. That is not to mention the additional tens of billions to build or complete nuclear power stations (Hinkley Point C and Sizewell C). More investment in nuclear will emerge, for a combination of extra and replacement plant.

Figure 2
Illustrative UK energy and infrastructure expenditure 2024-2040



Sources: OEUK, Rystad, EDF Energy, National Grid ESO

These are important considerations for supply chain companies and skills, where projects have largely the same requirements. Many onshore industrial sectors have supplied skilled workers for offshore projects, but dynamics are shifting: the onshore labour demand for skilled workers is rising rapidly.

Recognition of the long-term rewarding careers on offer in offshore energy will assist in attracting the workforce needed for the future.

Companies should work together to ensure that workers are deployed in the most effective way, onshore or offshore as the overall talent pool is likely to be limited.

Private sector investment is a fundamental driver of economic growth, but the UK needs to be as competitive as possible and provide long term investment signals. Supply chain companies will not invest without confidence in sustained demand growth and workers need to see how their skills can be deployed in wind, CCS, hydrogen and oil and gas. Emerging areas like geothermal also add opportunities.

Developing new opportunities for people and the economy

Cross sector opportunities

A fair and managed energy transition depends on new opportunities from offshore wind, hydrogen and CCS emerging in sufficient quantities to offset declines in oil and gas.

It is important to understand what will be required to enable output growth across oil and gas and new areas, alongside increased UK supply chain local content.

In its *Delivering our Energy Future* report RGU's Energy Transition Institute estimates that 154,000 jobs are directly or indirectly supported by the offshore energy sector, including oil and gas, offshore wind, hydrogen production and the transport and storage of carbon.[1]

Analysis by Experian for OEUK reinforces that the bulk of these jobs (120,000, or almost 80%) are reliant on oil and gas activity. Induced contributions can also be considered alongside this, with OEUK tracking these roles supported by oil and gas activity. When these are included the oil and gas sector is shown to support almost 206,000 roles.

The UK's oil and gas experience provides a strong foundation to build on. Its workers skills are the same required in new areas, with a 90% transferability rate. Although oil and gas will still need a significant number of people to serve ongoing projects and decommissioning activity, the correct processes and pathways need to be in place to support workers moving into new areas.

What are direct, indirect and induced jobs?

Direct jobs are those which are created by businesses whose activities are primarily focused on energy production and specific supply chain activities.

Indirect jobs are supported by companies in the wider supply chain who rely on demand from energy production projects. They are not officially classed as energy production companies, but their goods and services are critical for the sector. Examples of these include logistics, construction, catering, and professional services.

Induced jobs are those in the wider economy that are only viable because of the direct and indirect contributions. These are particularly important in communities where the energy sector is central to the local economy. Here, the sector's prospects have a significant bearing on the region's economic performance, impacting areas from hospitality, through to transport and retail.

[1] www.rgueti.com/wp-content/uploads/2024/05/63968-Delivering-Our-Energy-Future.pdf

Figure 3
Offshore energy direct and indirect workforce, 2023

Sources: RGU, Experian

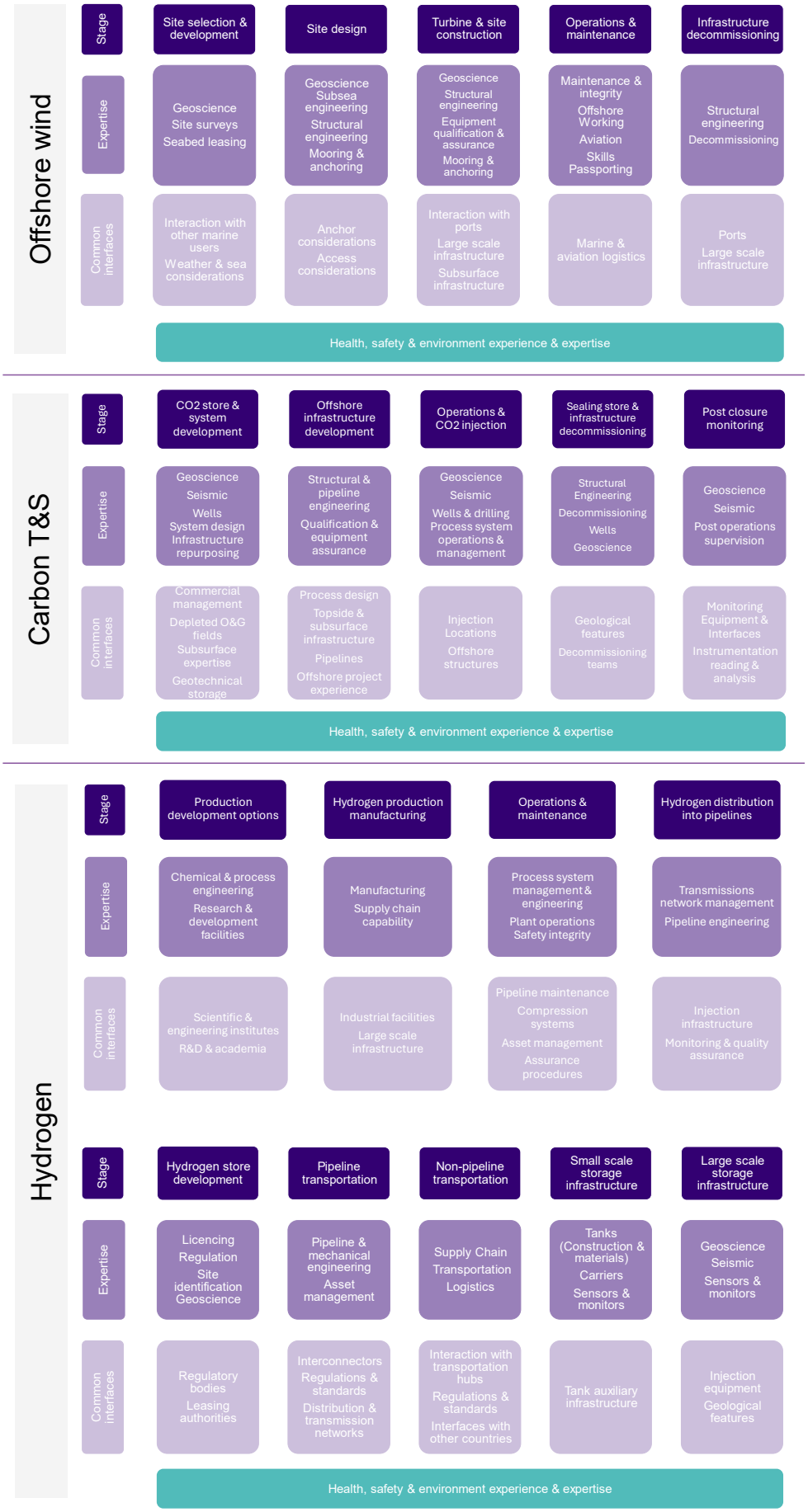
RGU's analysis shows that the number of jobs may grow throughout the remainder of the decade, as long as oil and gas activity is well managed and there are more offshore wind, CCS and hydrogen projects. A coherent strategy is also needed for a competitive UK supply chain to win and execute the work. But only a narrow pathway leads to opportunity growth. It is oil, gas and offshore wind that will have the largest influence this decade, with over 90% (some £160bn) of potential offshore energy spend by 2030.

If the UK falls short on its targets for offshore wind as now looks likely and if oil and gas production falls faster, the offshore energy sector could support only 130,000 jobs, directly or indirectly by 2030. But through renewed investment to help achieve its potential, its job footprint could grow by almost 50% in the same time frame (225,000 jobs). This means that there is a range in outcomes of between 130,000 and 225,000 direct and indirect jobs in 2030, compared with 154,000 now.

OEUK's Industry Manifesto[2] outlines the key actions and recommendations that will help protect and nurture high-value jobs across the UK. These centre on investment in people and skills alongside a centralised framework and infrastructure to transition skills, with localised solutions. This will help ensure that communities and individuals have the support they need to realise new opportunities.

[2] oeuk.org.uk/manifesto/

Figure 4
Transferring oil and gas skills to CCS, hydrogen and offshore wind



Industry actions to attract and retain skilled workers

OEUK is working closely with industry partners on a range of initiatives to develop clear pathways for a diversity of talent to join the offshore sector, and to retain and continue to develop those skilled workers who are already in the industry.

Alongside this the sector is firm in its commitment to safety. It has shown clear leadership and collaboration in this with the commitment of companies, industry bodies, and trade unions, through a range of initiatives.

Key policy recommendations linked to this are included in OEUK's Industry Manifesto.

The industry recognises that positive industrial relations can improve business outcomes and employee wellbeing. Where unions have a significant presence, collective agreements provide an important mechanism for constructive dialogue on issues affecting the workforce and employers.

The Energy Services Agreement (ESA) is a framework for setting minimum employment standards within the energy sector. It encompasses guidelines on wages, working conditions, and holiday entitlements, aiming to ensure fair treatment and equitable conditions for employees amidst the industry's transition towards net zero.

OEUK has recently published a Workforce Charter[3] to promote employee engagement and well-being, on and offshore, unionised and non-unionised. This encompasses fair and sustainable employment practices and inclusive workplaces. Developed with industry, the charter seeks to address the key levers of engagement, including development opportunities, security, employee voice and leadership.

Developing, retaining skilled workers

When it comes to decarbonisation, the UK has a huge advantage, being able to draw on the experience and skills of the people already in the sector. But while a new workforce does not need to be developed from scratch, more work is needed to ensure that people can access cross-sectoral opportunities.

Joined-up thinking

Efforts in the skills landscape are fragmented with many companies and bodies working on common areas related to policy reform, raising local content and addressing current and future skills challenges.

OEUK commissioned an independent study to help find a way through this landscape, and aid greater collaboration and limit duplication to increase the value of existing efforts.

The full findings will be published by OEUK this summer, including a matrix of the initiatives, their organisational scope, funding sources and governance. It shows a highly complex landscape with many stakeholders, influenced by policy and funding dynamics, across the UK: 170 skills initiatives in 114 different organisations.

Many are cross-sector, working to impact floating wind, fixed wind, oil and gas, hydrogen and CCS. They found that policy uncertainty, the lack of clear pathways to employment, and fragmented approaches to skills development are all key challenges.

[3] oeuk.org.uk/wp-content/uploads/2024/05/OEUK-Workforce-Charter.pdf

Skills Passport

The easier it is for workers to move between oil, gas, wind, and other areas, the better it will be for industry and the transition. Over the past year OEUK, RenewableUK, the Offshore Petroleum Industry Training Organisation (OPITO) and the Global Wind Organisation (GWO) have been working on a new initiative, a skills passport. The passport will show the basic level of technical competence required.

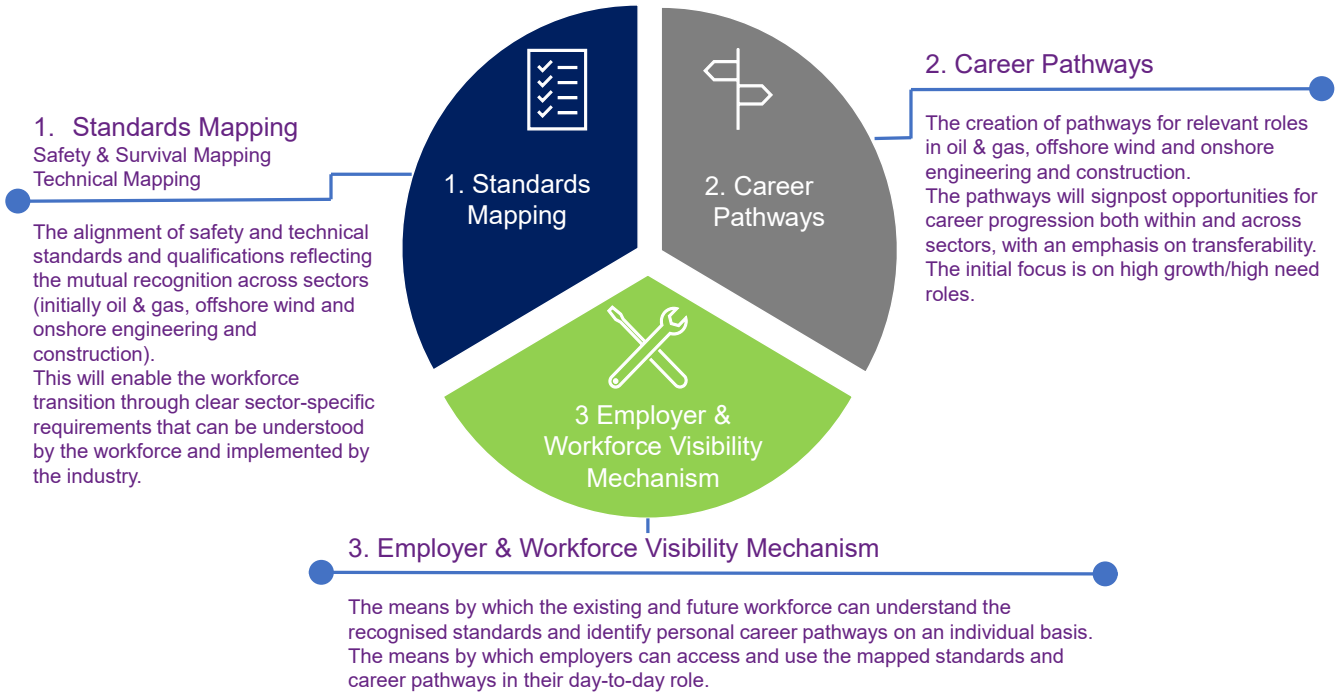
A uniform approach is very useful to workers and employers alike and can raise awareness of opportunities from the transfer of skills, improved efficiency and increased safety. They have been aided by a cross-section of oil, gas and offshore wind energy sector employers alongside government, trade unions, the Engineering Construction Industry Training Board (ECITB) and trade and skills bodies.

The passport will show both workers and employers how an employee's skills and qualifications can be applied equally across all the sectors. It has three components, with a digital solution being developed to bring them together:

- Alignment of qualifications, safety and technical standards;
- Career pathways for relevant roles; and
- Mapping standards.

GWO and OPITO are working on career pathways in offshore wind which will be finalised later this year. This will help workers to identify the further qualifications they need to apply for roles across the integrated sector.

Figure 5
Components of the offshore skills passport



Sources: EY, OEUK, RenewableUK, OPITO

Connected Competence

The industry-led Connected Competence programme, enabled by the ECITB and endorsed by the offshore operating companies, is a clear example of the commitment to the workforce's safety, skills and transferability.

OEUK has been working with the Connected Competence Council and ECITB to establish a client signatory forum. First rolled out in 2017, it defines a common base level of competence across sectors, boosting efficiency, productivity and safety.

As the workforce continues to grow and develop new skills, Connected Competence means competence records remain with the individual and are accessible online. The output from the Connected Competence process will be recognised and integrated into the Energy Skills Passport, allowing for a seamless transfer between companies and energy sectors.

Skills Summit

A cross energy sector skills summit is planned for Q1 2025. It will provide an opportunity for stakeholders to come together to identify collaboration opportunities, agree where action is needed and consider the UK government's Green Jobs Plan, expected this year.

Diversity and inclusion offshore

The sector is committed to setting the gold standard for diversity and inclusion (D&I). The 2023 Employee D&I survey highlighted that the index, introduced in OEUK's *Building the Baseline* report[4], has seen a modest increase from 7.1 to 7.3 over the past three years. The results and recommendations from the survey will help create a roadmap for future D&I initiatives and guide efforts for a more inclusive and resilient sector.

OEUK's 2022 employer survey of industry demographics was more sophisticated than previous studies. It provided a series of new benchmarks for comparison with other sectors and hence for measuring progress. Furthermore, collecting and reporting data – and acting on it – can help companies with their social reporting obligations under environmental, social and governance (ESG) legislation which can directly influence the perception of a company and its ability to access finance. It is also increasingly used as a marker within contracting practices.

Following the survey, OEUK is developing a toolkit, 'Inclusive Insights: Unveiling the Power of D&I data', designed to equip organisations with the knowledge needed to collect the data and to drive improvement. This will be published in summer.

Attracting people to the sector

The sector needs a steady inflow of talent if it is to reach its potential. It is important that people want to join the sector, whether as apprentices or returners in the case of more experienced people. OEUK is collaborating on a range of projects that will enable career paths across the energy sector, and it is also working to integrate energy into the education curriculum for pupils from a much earlier stage.

Vocational pathways

Meeting the demand for technical trades will require a different approach from the promotion of vocational pathways. Several barriers have led to a decline in the number of apprentices recruited which include limited resources for businesses, concerns about training quality, the impact of the pandemic, lack of awareness and signposting and financial obstacles. Engineering UK has published a Five-Point Plan[5] to grow engineering and technology apprenticeships:

- Ensure that the secondary school system is fit for the future and technical and academic pathways are equally valued.
- Provide better support for young people throughout their apprenticeships.

[4] stories.oeuk.org.uk/building-a-baseline/index.html

[5] www.engineeringuk.com/research-policy/fit-for-the-future-growing-and-sustaining-engineering-and-technology-apprenticeships-for-young-people/fit-for-the-future/

- Ensure long-term funding for apprenticeships at all levels and greater equity between vocational and academic.

- Enable more SMEs to play an active role in apprenticeships.

- Encourage employers to play their part in growing and sustaining apprenticeships for the future.

OEUK is calling for the apprenticeship levy to be reformed so that skills gaps can be addressed effectively.

Energy apprenticeship schemes

Despite a significant interest in careers within the energy sector among young people in Aberdeenshire schools, a gap has been identified in the education system's provision of key employability skills.

OEUK members have supported the pilot of an Energy Foundation Pathway. This will be a joint partnership with the energy sector and will be integrated into the mainstream school curriculum once approved as a Foundation Apprenticeship Level 5. The aim is to provide young people with the requisite skills and knowledge, with a focus on the development of meta skills, including focussing, adapting, communicating, collaborating, leading creativity and critical thinking.

This initiative is alongside the energy sector's existing apprenticeship programme - APTUS (previously OGTAP), meaning to adapt, to adjust and to be prepared. The programme is jointly managed by OPITO and ECITB. No experience is necessary and applicants from all backgrounds are welcome. More than 2,000 apprenticeships have been completed since its launch in 1999.

ECITB Work Ready Programme and scholarship

The Work Ready Programme is designed to tackle industry skills shortages and help individuals to find work. It is a collaborative and co-funded partnership between ECITB, employers, trainers, the Department of Work and Pensions (DWP) and local partners. Learners are guaranteed jobs once selected for training, subject to successfully completing the programme and displaying the requisite behaviours.

The programme is designed to recruit from hard-to-reach demographics such as those not in employment, education or training, ex-offenders and former armed forces members.

It has two main pathways: the trainee maintenance operative and the industrial services operative.

Both pathways have additional commonality to ensure transferability of workers between sites nationally. The pathway can last up to 16 weeks, when the learners undertake full-time training and assessment in the centre, interspersed with work placements and site visits.

The 'ECITB Scholarship' was designed to ensure the engineering construction industry had a sustained pipeline of talent to prevent further shrinkage of the skills pool. The first candidates enrolled on the energy transfer pathway in 2021 and were followed by the new wind turbine and industrial welding pathways.

Employers will no longer have to employ a learner: they can undertake some of the necessary components of an Apprentice Standard/Framework in an approved centre without having to register on an actual apprenticeship scheme with an employer. ECITB scholars will not be able to compete against skilled and competent workers until they have had an 'improvership' phase with an employer. This may be either through an apprenticeship or as a direct site hire.

To date, over 500 scholars have registered on the programme in Great Britain with many progressing into industry as direct hires or apprentices. There are 12 active centres and employer engagement is strong. The scheme has been acknowledged as a form of accelerated apprenticeship in 'flexible apprenticeships in construction'.[6]

[6] www.citb.co.uk/media/jqfbiesq/20210426_-csdg-cleared-flexible-apprenticeships-manual-construction-_final.pdf

People of Energy

Meet some of the people who are giving us reasons to be hopeful about our future.

A trained clinical psychologist turned oil and gas sales professional, Shabnum Hanif recently took on the role of Director of Clinical Psychology at Integrity HSE, combining her industry knowledge and psychological background to combat mental health issues in the onshore and offshore industry.

"I get my own energy from helping people, so my advice to anyone looking to join the industry would be to follow your passion."

Edmund Lau (24), originally from Yorkshire, recently graduated with an MEng Chemical Engineering degree from The University of Edinburgh. After completing a 6-month placement at Shell on electrification, he is now pursuing a career in the oil and gas industry as a Graduate Process Engineer at Katoni Engineering, based in Aberdeen.

"For someone looking to join the industry, my advice would be to get engaged early on, by keeping up to date with current affairs, attending talks, and networking as much as possible."

With an extensive career in the energy sector, Debbi Blackwood's current role sees her as Head of Regulation, Compliance and Cyber Security at Aberdeen-based Engineering Consultancy and engineering, procurement and construction (EPC) firm, Katoni Engineering. She currently supports clients across the oil and gas, renewables and nuclear industries to meet evolving regulatory demands.

" It's an incredibly exciting time to be in our industry, and for someone looking to join, I would say always keep your eyes and mind open to new ideas, ways of working and opportunities to do better."

Dr. Lawrence Wilcox is an engineering specialist, research scientist and visiting professor with more than 15 years of combined work experience in the energy industry and academia. He currently works as a Postdoctoral Research Fellow at the National Decommissioning Centre researching the decarbonisation of offshore energy.

"I feel very positive about the energy industry's future. It will be very inclusive with a plethora of energy sources to utilise -- thereby increasing the size of the industry, driving innovation and lowering costs as technology improves for renewable and non-renewable sources."

Kathryn Brown is a Senior Consultant working in DNV's Asset Data Analytics team in Loughborough. Her role focuses on data analytics for a variety of assets to aid in the prioritisation and strategy of replacement, refurbishment, and inspection of assets. She has experience in mathematics and fire and explosion engineering.

"I would encourage those who are considering joining the energy industry to be inquisitive and assertive. Don't be afraid to speak up, you might be the person that has an idea that changes the world!"

learn how our industry continues to deliver the everyday essentials we all depend upon, and how it continues to support jobs and the economy.

In focus - the contribution from the oil and gas sector

Of all the types of offshore energy production, it is the oil and gas industry whose impact on the economy is the best understood, owing to its relative scale and maturity. As well as fuel supplies, its output strengthens the economy in three main ways: employment, direct taxation and gross value added (GVA).

The contribution from the sector is far wider than just from companies who produce oil and gas. Around 90% of the direct and indirect employment supported by its activity sits within supply chain companies. This makes the sector an important part of regional economies.

The sector has also paid almost £450bn (real terms) in net production taxes since 1970. This includes £15bn in the last two years – equal to 9% of total UK corporate tax payments. The Office of Budgetary Responsibility estimates a further £15bn will be paid between 2024 and 2029.

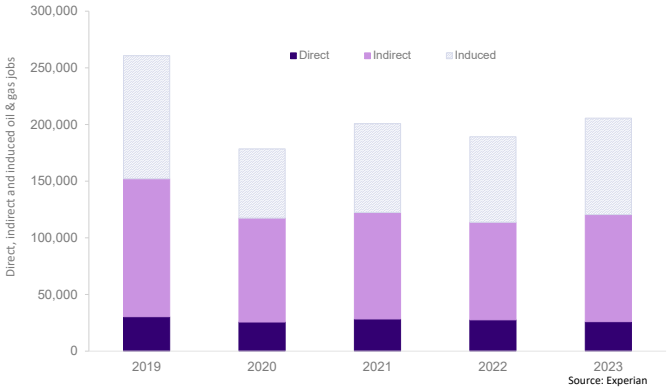
OEUK has worked with independent economic consultancy, Experian, to estimate the direct, indirect and induced employment and GVA contribution that the oil and gas industry makes nationwide. The total is estimated at £25bn of GVA in 2023 alone, and just under 206,000 jobs.

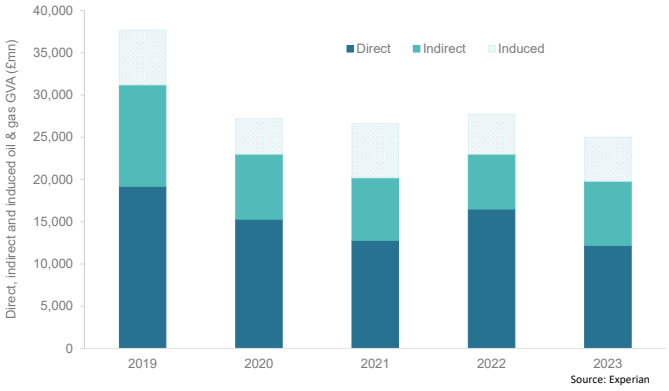
The sector supports around 1% of the value of the UK economy and 1 in every 160 of its jobs. This contribution is significantly higher

A full methodology of the process Experian undertakes when estimating the economic and employment impact of oil and gas production is available here.

Figure 6
Estimates of UK economic value and jobs supported by oil and gas activity within the UK in 2023

2023	Jobs	GVA
Direct impact	26,000	£12.2bn
Indirect impact	94,500	£7.6bn
Induced impact	85,100	£5.2bn
Total impact	205,600	£25bn





What is GVA?

Gross value add (GVA) provides an outline of the value of a sector, taking into account the returns from the goods and services in comparison to their costs. It gives a measure of the contribution of specific sectors to the overall economy and is used to adjust economy wide levels of GDP.

in certain parts of the UK. For example, in Scotland the industry is estimated to support around 1 in 30 jobs.[7]

Direct and indirect contributions depend on the level and nature of investment and activity and how much is captured by the UK supply chain. The induced jobs depend on factors including wider spending patterns of the people who are directly and indirectly supported by the sector. Official data, upon which the modelling is based, is often also subsequently revised. These factors mean that the estimates can fluctuate.[8]

Although oil and gas production and investment will continue to decline, the rate can be effectively managed so that

[7] Including direct, indirect and induced impacts

[8] Previous estimates for supported employment in 2022 have been revised due to improved understanding of these factors

Figure 7
UK wide oil and gas GVA and employment contributions

Source: Experian

they will continue to contribute significantly to the economy. Around £20bn more in capital investment and £2.5bn in associated operating costs await the green light this decade. More associated opex would be also spent into the 2030s. These would support some 500mn barrels of oil equivalent (boe) of oil and gas reserves, adding some £25-30bn of GVA by 2030. This would be equivalent to another year of contributions. Important exploration and appraisal prospects can also be progressed. Of those, some have the potential to add new investment opportunities to this profile.

This is a huge economic opportunity for people and communities and one that is ready to be unlocked in the right conditions.

3. Investing in a homegrown energy transition

Key messages...

- Creating new opportunities for people and the economy starts with unlocking investment into projects across the offshore energy sector.
- The energy sector needs greater certainty across the policy and investment landscape to get projects moving. Current levels of risk are holding company decisions back.
- The extent of the project pipeline means that the industry's spend profile is shifting from opex to capex. To meet upcoming demands and boost local content, supply chain companies need to be able to retain core competencies and scale up in important areas, and they need to make decisions 3-5 years prior to demand growth. Greater policy certainty can help them de-risk decisions.

Energy sector investment is a fundamental driver of economic growth. The offshore sector can support this, with around £450bn ready to be spent in the next 15 or so years – over 70% of which is capex. Onshore energy infrastructure projects will push this figure even higher. But it will only be realised if the right conditions are in place that allow companies to plan and work with confidence. This section of the report outlines detail behind these opportunities, and practical steps that can support their development.

There are a range of investors and company strategies in the offshore energy sector, all of which have an important part to play. These include supply chain companies, developers focused on a single area like oil and gas production or offshore wind, and those which are investing across a range of areas. These companies all have different investment drivers and risk factors that need to be considered. These range from sector specific considerations like policy, regulatory and fiscal conditions and their stability, alongside macro level factors, like inflation rates and wider monetary policy.

The UK is in a global race for workers and investment, and it will only succeed if it is viewed internationally as a good place to do business. Losing means that the benefits of a homegrown transition will be realised elsewhere, with the UK increasingly reliant on energy and supply chain imports.

North Sea Transition Deal

The North Sea Transition Deal (NSTD) was agreed by industry and government in 2021. It is helping the UK progress towards net zero by harnessing the skills and expertise of the people and companies in the oil and gas industry to support the development of CCS, hydrogen and other decarbonising technologies. It aims to grow the economy, sustain high-skilled jobs, establish new energy businesses, attract investment and grow exports – and still reduce emissions.

NSTD is built on five commitments:

Supply decarbonisation:

Reducing emissions from oil and gas production and helping to produce cleaner energy.

CCS:

Applying these technologies to lead the way in helping industry and society meet net zero.

Supply chain transformation:

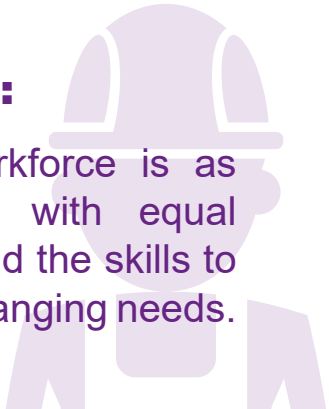
Helping our world-class supply chain expand and evolve to support cleaner energy production.

Hydrogen:

Exploring the use of hydrogen to provide a potential low-carbon alternative to natural gas for heating, industry and transport.

People and skills:

Making sure our workforce is as diverse as possible with equal opportunities for all and the skills to meet our industry's changing needs.



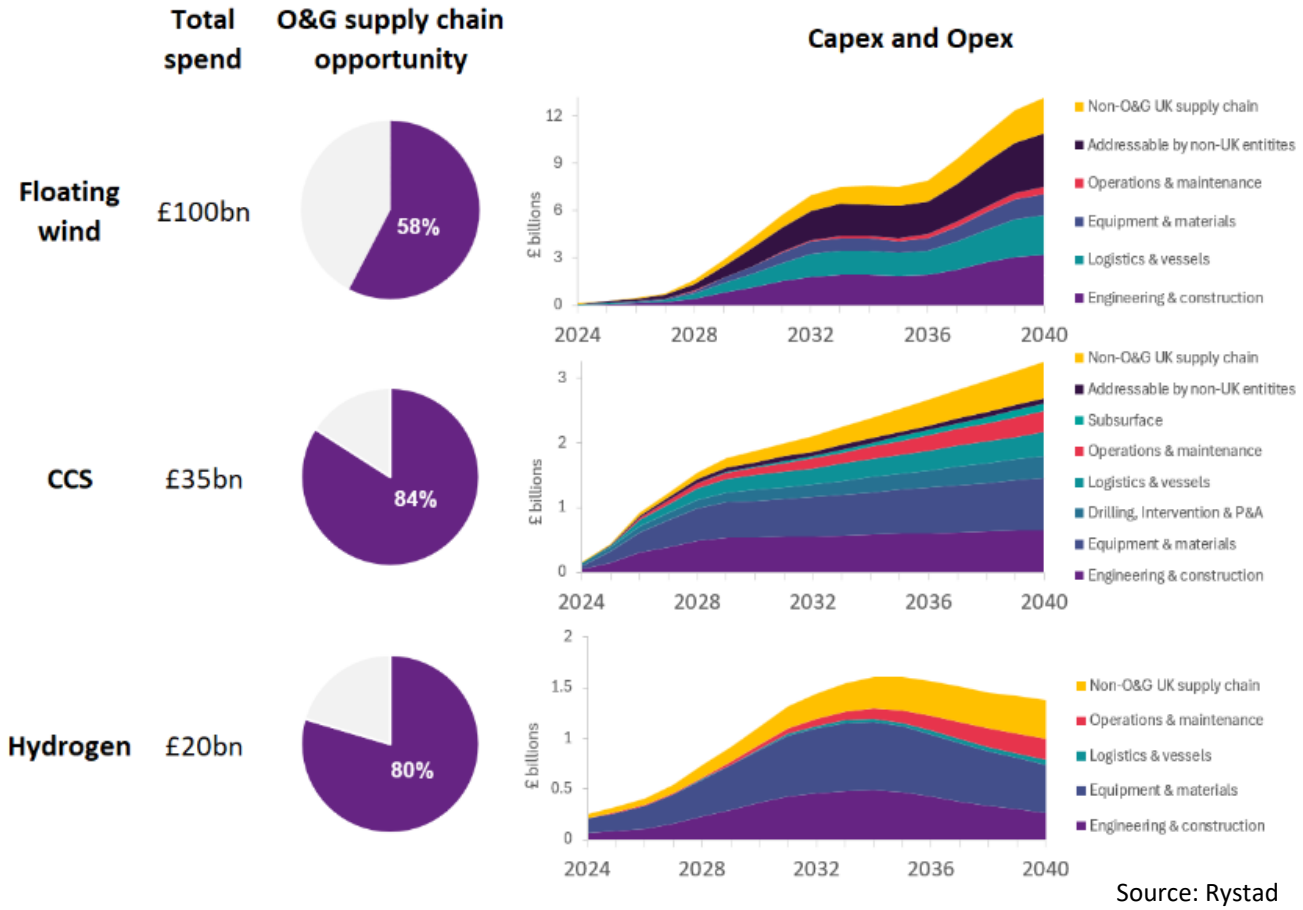
Supply chain development

In April, OEUK published an independent study by Rystad Energy: *UK Oil and Gas Supply Chain Opportunities in the Energy Transition*[9]. The study demonstrated the size of the prize companies could realise, with 58%-84% of the capabilities needed for floating wind, CCS and hydrogen already available. The study also outlined how building stronger UK capability would help position UK companies to compete in an accessible global market. It will be worth £1.1 trillion between now and 2040.

This study adds important information alongside several other recent studies which reinforce the opportunities for the UK's supply chain, such as the *Offshore Wind Industrial Growth Plan*[10] and the *UK renewables deployment supply chain readiness* study.[11]

But the opportunities will only be realised if the required capacity is in place, centred on key capabilities. Retention and scale up of key supply chain segments and co-ordination across government and industry are all important.

Figure 8
Opportunities for oil and gas supply chain capabilities in floating wind, CCS and hydrogen



Source: Rystad

[9] oeuk.org.uk/product/uk-og-supply-chain-opportunities-in-the-energy-transition/

[10] cdn.ymaws.com/www.renewableuk.com/resource/resmgr/media/offshore_wind_industrial_gro.pdf

[11] assets.publishing.service.gov.uk/media/6617b12ed88c988e81b95af8/uk-renewables-deployment-supply-chain-readiness-study-executive-summary.pdf

Investment in supply chain capabilities will also help realise benefits for communities across the country. The NSTD and Offshore Wind Sector Deal set out clear ambitions to grow local content within UK projects. These include a 50% voluntary commitment across CCS, hydrogen and oil and gas decommissioning and emissions reduction projects – with a target of 30% UK technology delivery. Alongside this the sector is aiming to achieve 60% UK content in offshore wind projects.

Most offshore energy spend in the last decade has been directed at opex-related activity (such as asset maintenance), so the supply chain has been geared up well to service this market. This has led to higher local content in opex-related projects than capex. But the balance of spend is shifting, and most activity in the coming decades will be capex driven. It is important that the sector is well equipped. Companies will have to invest to scale up key capabilities across engineering, manufacturing, construction, infrastructure and logistics. RGU's analysis[12] has shown that every 10% of additional capex in local content can help deliver up to 12,500 more direct and indirect jobs by the end of the decade. This clearly shows the value of supporting supply chain capacity growth.

If the capacity is to be ready where and when it is needed, companies have to plan ahead but these carry higher risks. These decisions often need to be made at least three and sometimes five years before project execution, owing to manufacturing and construction lead times. Given the growth expected at the turn of the decade, the window of opportunity is now. OEUK is working closely with government and policy makers to ensure the right investment conditions.

OEUK's 2023 report *Harnessing the Potential*[13] outlined key steps to be taken to help increase supply chain investment confidence and improve UK local content. OEUK's Industry Manifesto builds on this, with policy recommendations centred on the development of an integrated, long term industrial strategy which recognises the strengths of the UK's energy supply chain. This will help give investment signals, providing confidence for supply chain companies to retain and expand their capabilities.

[12] www.rgueti.com/wp-content/uploads/2024/05/63968-Delivering-Our-Energy-Future.pdf

Responsible oil and gas investment

Oil and gas continue to supply around three-quarters of the UK's energy – largely owing to the dominance of oil products in transport and petrochemicals, and gas in home heating and power supply. Although their use will fall, they are embedded in everyone's daily life, and this takes time and significant investment to change.

The Climate Change Committee (CCC) estimates oil and gas use will halve by the mid-2030s but still meet half of UK energy needs. The pace at which transport and heating can be decarbonised, largely through electrification, will be influential and both have seen delays to government targets. Slower change will result in higher oil and gas demand. There will still be an ongoing need for oil and gas even come 2050 in areas where alternatives are not viable, but on a lesser scale than today.

Domestic supplies play an important role in the UK's energy system. Around 46bn boe have been produced, spending around £900bn in the process. But production is declining quickly and is now at a record low of 1.2mn boe/d – around half of current demand. There is still significant potential ahead, with North Sea Transition Authority (NSTA) reporting 10bn boe in 2P and 2C reserves and resource, and 3.5bn boe in mean mapped prospects.[14]

Securing these is key if the UK is to ensure it is prepared for future needs, alongside an ongoing need for imports.

The UK spent almost £27bn on imports of crude oil and over £21bn on gas imports last year. This is £6bn more than receipts from UK crude oil exports and £17bn more than gas exports. Prioritising domestic production cuts this gap. Including the imports of refined products, the net import gap for fuels is almost £42bn (£80.4bn imports and £38.6bn exports).

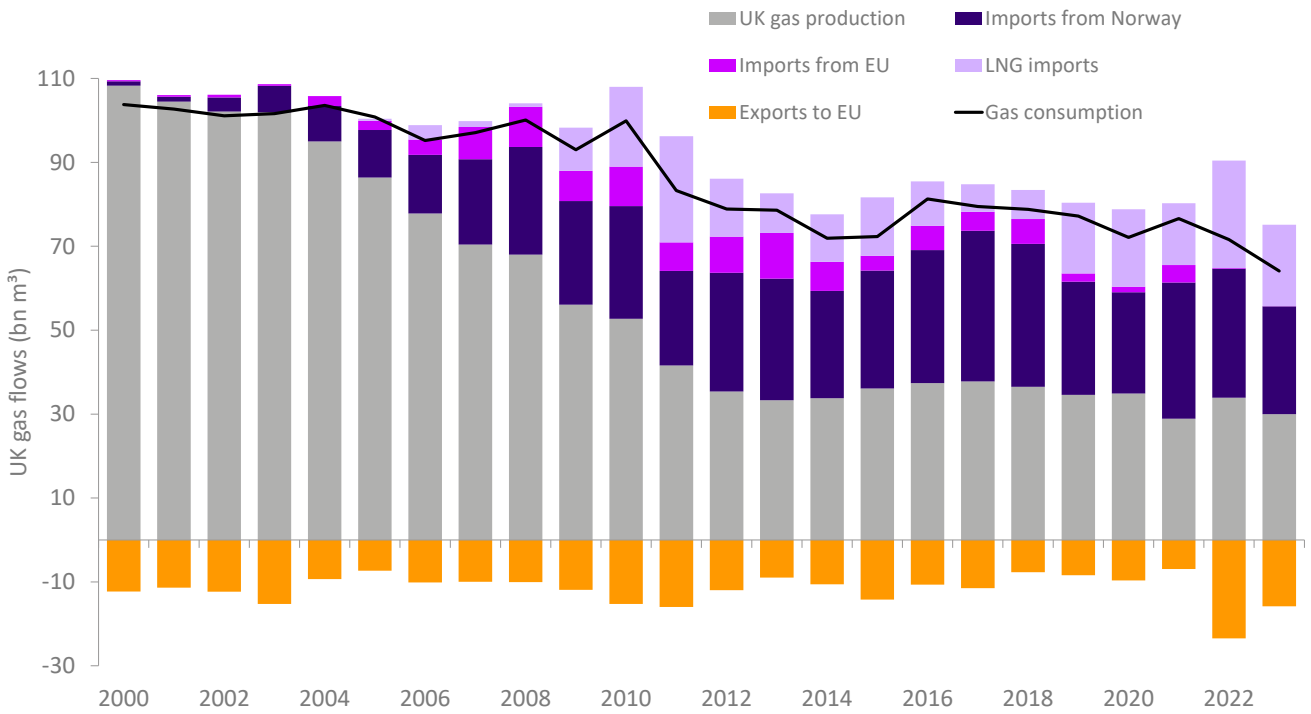
The emissions footprint of fuel imports also must be carefully considered. Liquefied natural gas (LNG) is the marginal source of gas imports but has a full value-chain carbon content that is four times bigger than that of domestic gas.[15] LNG imports are now twice what they were 10 years ago and will rise further as domestic production falls faster than demand.

[13] oeuk.org.uk/product/harnessing-the-potential/

[14] www.nstauthority.co.uk/media/whzh1ahq/reserves-and-resources-report-as-at-end-2022.pdf

[15] www.nstauthority.co.uk/news-publications/north-sea-gas-is-almost-four-times-cleaner-than-lng-imports/

Figure 9
UK gas supplies and consumption



Sources: DESNZ, NSTA, OEUK

The NSTA estimates that production will continue to decline by around 8%/yr, based on investment projections. Their forecast includes 4.8bn boe between 2024-50 (2/3 oil and 1/3 gas), with 20% from new fields. This would see substantial resources being undeveloped. A further drop in investment commitments and exploration would mean even lower recovery and decline rates could increase to 15%/yr, OEUK estimates.

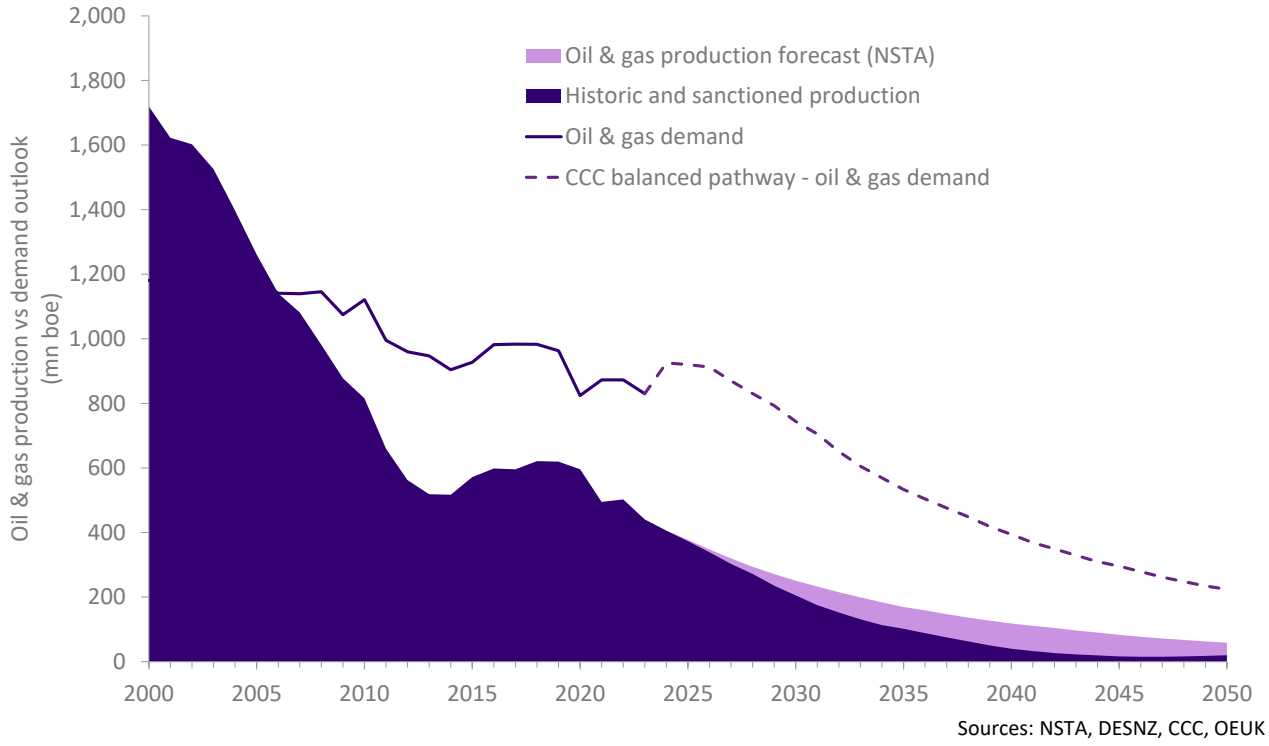
Improved recovery rates and slower decline are both achievable but only if investment can be secured. Getting things right means the difference between 0.9mn boe/d in 2030 and 0.7mn boe/d forecast by NSTA.

On the other hand, output might fall to 0.6mn boe/d if investments dry up. For gas, low investment could lead to production halving in the next five years but boosting activity could double this.

About 60% of the resources yet to be approved could be produced in the next 10 years. Fast action is needed to secure them as most depend on existing infrastructure that may not be in place when needed. Around half of the remaining resources are in fields that are already producing, with the others in new fields. The vast majority of those in new fields would be tied back to existing infrastructure, meaning faster development times and less emissions.

The sector is fully committed to delivering these resources alongside achieving its NSTD emissions reductions commitments. Good progress has been made with CO_2 equivalent emissions down 24% between 2018-22, including a 45% fall in methane. Continued progress towards the target of 50% reduction in 2030 is anticipated.

Figure 10
UK oil and gas production and demand outlook



Sources: NSTA, DESNZ, CCC, OEUK

To make the most of the economic and energy security opportunities oil and gas represents, and to limit the additional emissions embedded in imports, it is important that present and future governments, at all levels, work in partnership with the sector to unlock new resources.

OEUK's Industry Manifesto outlines the importance of fiscal competitiveness and predictability, with a fair balance between risk and reward, if the remaining reserves are to be developed. The removal of the Energy Profits Levy (EPL) prior to its sunset in 2029 is key to this.

Ongoing licensing, with climate compatibility checkpoints, is also important. A focus on previously identified resources, alongside infrastructure led exploration, will help ensure that resources are recovered sustainably and efficiently.

Alongside this, industry must keep a close watch on its own performance – particularly around health, safety and the environment, but also in commercial agreements and contracting practices and cost and production efficiency. This will help support the development of marginal projects and ensure that the industry is seen as a good place to work and invest in.

Offshore wind

Widespread electrification is a fundamental part of net zero emissions, requiring a reversal of the declining consumption trend over the last decade. Home heating and transport are at the centre of this and will displace significant tranches of unabated oil and gas demand.

The CCC foresees electricity overtaking oil and gas from the mid-2030s in its 'Balanced Pathway' scenario. But this depends on faster take up of electric options for heating and transport.

Electricity could expand its market share from around one-fifth of energy use now, to around half. Linked to its scaling up, the UK government has committed to delivering a decarbonised power supply system by 2035.

Wind power has grown significantly in recent years and provided just under 30% of UK power supply last year (82 terawatt hours (TWh)). Offshore wind accounted for the biggest share of this (50 TWh; 60%) and has provided more power than onshore wind since 2018.

Offshore wind now provides 1/3 more than nuclear (37 TWh) and was second only to gas (96 TWh) last year. Supplies from gas are falling and are about 1/3 lower than in 2016. This trend will continue but gas will retain an important role in bringing balance and scale to an increasingly intermittent system.

It is possible wind (on and offshore) will be the largest supply source across this year; it has provided more supplies than gas in the first four months of the year. This has led to the carbon intensity of the UK grid falling to its lowest daily level on 15th April, at 19g CO_2/KWh.

Gas will still have an important role in bringing flexibility to the system (increasingly combined with CCS), but offshore wind will provide most of the growth in power supply in the coming decades as the government aims to deliver a decarbonised power system by 2035. The UK has about 15 GW of offshore wind generation capacity, with targets to grow this to 50 GW by 2030. To achieve this at least 6 GW needs support in each of the next four contract for difference (CfD) allocation rounds.

This is a tall order as this rate of support is almost double the previous record for an allocation round. It is important that this capacity growth comes alongside consumer price reduction and increases in supply chain local content. Achieving all three is a major challenge.

Capacity growth this decade is led by fixed wind projects. Floating demonstration projects today are of limited size, but these will emerge on a much larger scale in the 2030s, and it is these that provide the greatest prospects for the UK's established energy supply chain. There is a huge opportunity to grow low carbon power supplies, increase manufacturing capacity and provide new business opportunities.

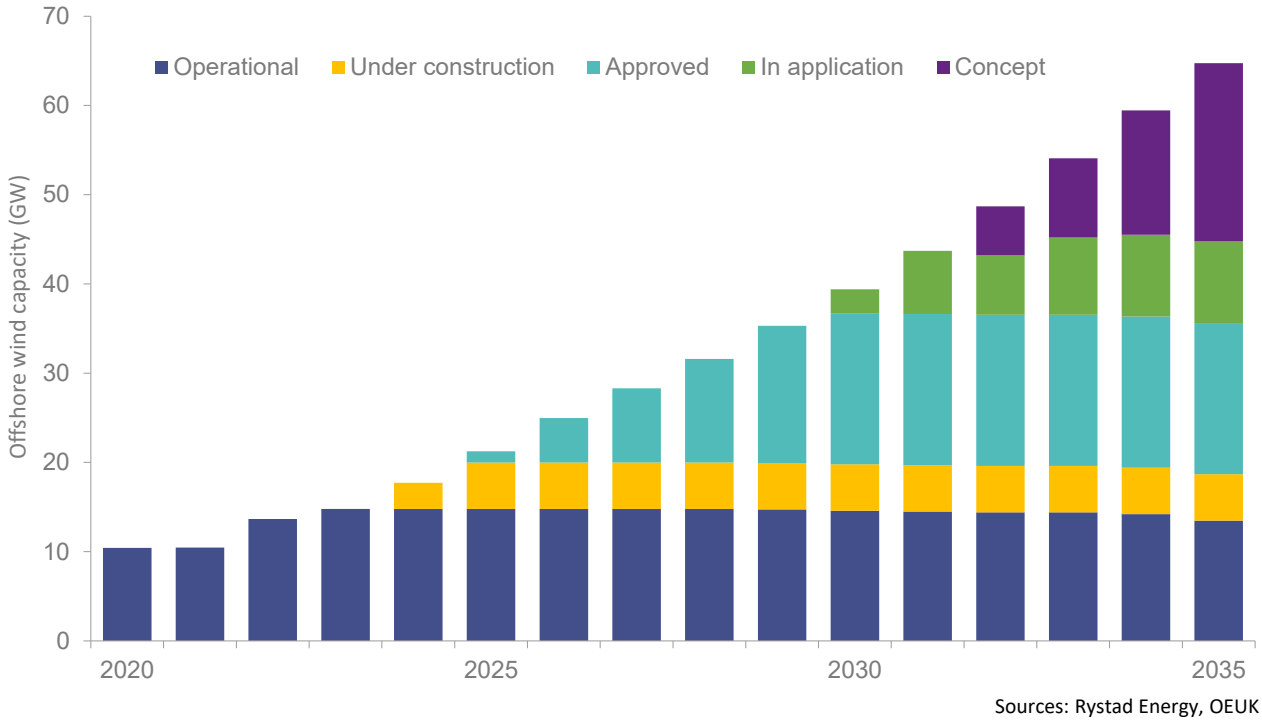
But cost inflation, longer consenting timeframes and grid access all complicate the picture, deterring some investors.

The growth of intermittent power sources creates challenges within the markets ability to balance supply and demand. This is acknowledged in the Review of Electricity Market Arrangements (REMA). Both baseload and flexible supplies will play their role if the aim is lower prices. Like gas today, flexible systems will set the price – with hydrogen being key in the future. Market reform therefore needs to be aligned with hydrogen business models and other support mechanisms.

Electricity prices have fallen to their lowest level since mid-2022 but the market regulator Ofgem doubts if prices will continue to fall over the next decade owing to the investment needed in both electricity supply and distribution. Grid costs now make up a quarter of electricity bills, with this share rising.[16]

[16] www.ft.com/content/ad038c1c-e755-4db1-8830-c3748de94129?

Figure 11
Potential development of UK offshore wind capacity



Sources: Rystad Energy, OEUK

One of the remaining proposals for market reform include zonal pricing, where different parts of the country have different power prices depending on local supply and demand. It is intended to encourage more supply to be built near population centres.

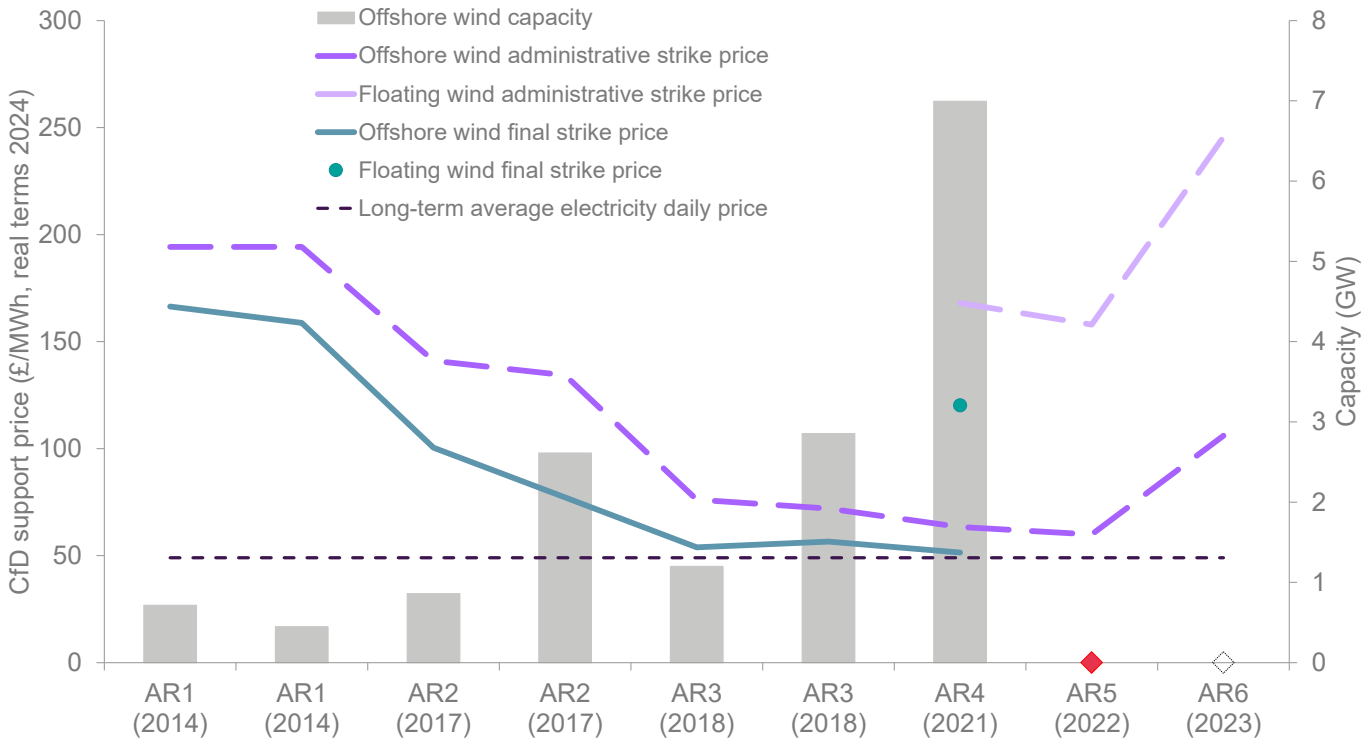
But it could also cause challenges, especially for large, capital-intensive projects like those in ScotWind which are relatively far from major demand centres.

CfDs, other mechanisms

CfDs have been the bedrock of government support for the scale up of offshore wind. They provide certainty of revenue, which de-risks investment decisions as the sector becomes established. They have also helped drive down project costs, but lower revenue support on offer in the Fifth Allocation Round (AR5) meant that no projects bid for contracts. The cost reductions that CfDs have driven have also squeezed supplier margins to an unsustainable level. Revenue support within AR6 has risen, but it is unlikely that the overall budget will be large enough to unlock the required capacity to keep the UK on track for 50 GW by 2030. CfDs are important and the inclusion of Sustainable Industry Rewards is a positive move towards encouraging supply chain investment. But if they are not implemented in a joined-up way alongside other support initiatives like the Green Industry Growth Accelerator and the Floating Offshore Wind Manufacturing Investment Scheme, then they will not achieve their aims. Further CfD reform could also include support for the development of hubs across different energy areas, such as hydrogen.

Other routes to market include long-term power purchase agreements (PPA) and their popularity is likely to grow as government may offer less market support. PPA prices may go on to exceed CfD rates in the coming years.

Figure 12
Fixed and floating wind CfD prices



Sources: Ofgem, HM Treasury, DESNZ, OEUK

The full potential of the wind sector will not be realised unless government, regulators and industry work more closely. Consenting timelines are far too long and grid access timelines need to halve. Market reform is important, but this needs to be carefully thought out from the start, while considering links with the development of other energies and supply chain companies. Falling short of the full potential will hit job opportunities including those in industrial manufacturing. This could push back plans to decarbonise the power system and wider economy.

CCS

Potential CCS sector development timeline

2021 – Track 1 clusters launched

2023 – Track 2 clusters launched
First CCS licensing round
CCUS Vision published

2024 – FID – Hynet & East Coast Cluster
First injection test at Poseidon

2025 – FID – Viking CCS & Acorn CCS

2026 – First injection – Hynet & Acorn CCS

2027 – First injection –
Viking CCS & East Coast Cluster

2030 – 20-30mn tonnes/yrCO_2, including 6mn tonnes/yr CO_2 from industrial clusters
4 clusters by 2030

2035 – 50mn tonnes/yr CO_2,
including 9mn tonnes/yr CO_2
from industrial CCS

2050 – 90–170mn tonnes/yr CO_2

CCS overview

CCS will be crucial if the UK is to achieve its goal of net zero emissions, according to the CCC. Its role in providing low-carbon hydrogen and dispatchable low-carbon power will complement renewables. CCS will also play a crucial role in creating a market for low carbon goods – such as green cement and steel – protecting and creating tens of thousands of jobs across the UK's industrial heartlands. Many of the people and skills necessary exist already within the UK: Rystad Energy's study finds that the existing supply chains in the oil and gas sector could support 84% of CCS project costs.

The key components of an emerging CCS industry are gradually being put in place. The government has pledged support for four CCS clusters by 2030. Hynet and the East Coast Cluster have been designated as Track 1 clusters, while Acorn and Viking have been identified as Track 2. The NSTA has awarded 27 carbon storage licences, which could store more than 10% of UK greenhouse gas emissions. It is also conducting an out of round process for licences in the English Channel.

This progress marks the start of the UK's carbon storage industry. According to the NSTA, up to 60 candidate carbon stores need appraisal before 2035, so substantial efforts are necessary in the latter half of this decade to allow sufficient time for development.

The government has projected three phases for CCS sector evolution:

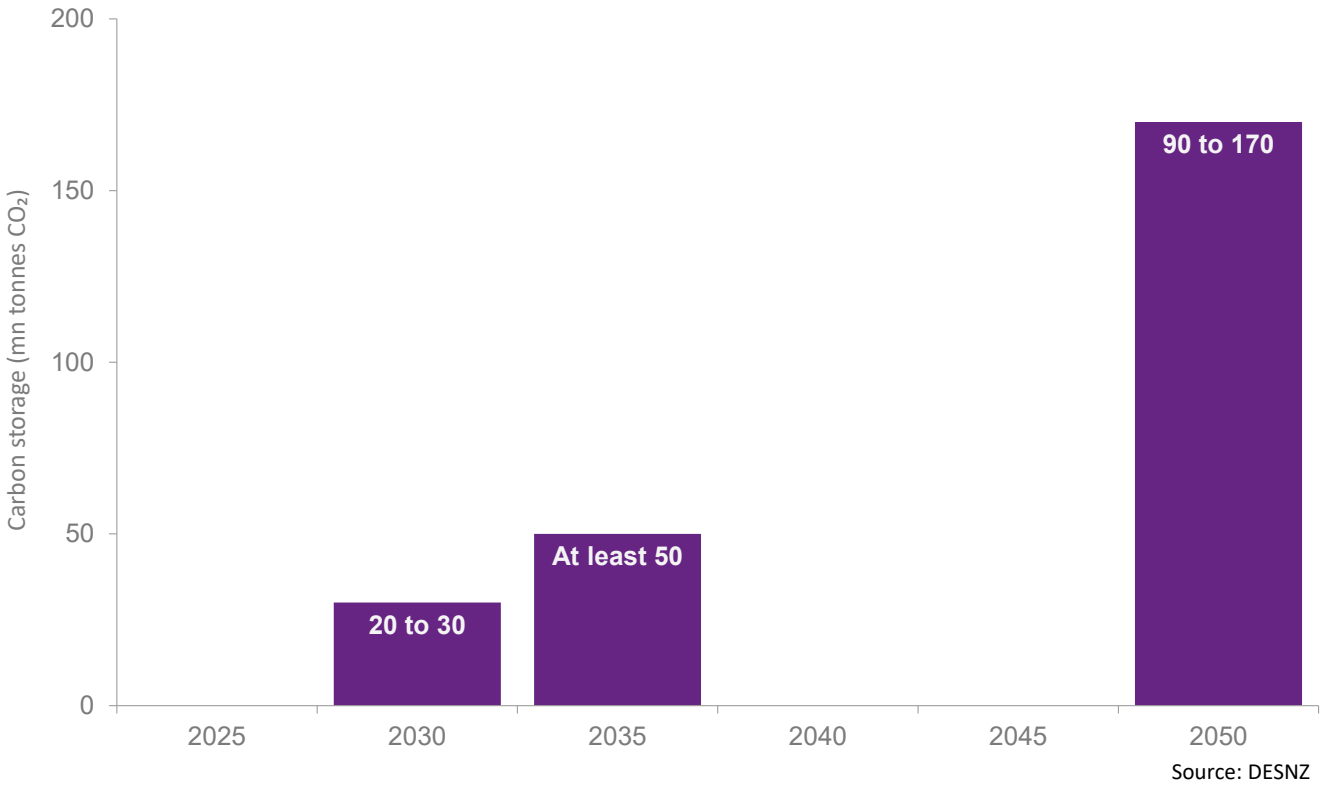
(i) Market creation (now to 2030)

(ii) Market transition (2030-2035),

(iii) Self-sustaining market (2035 onwards).

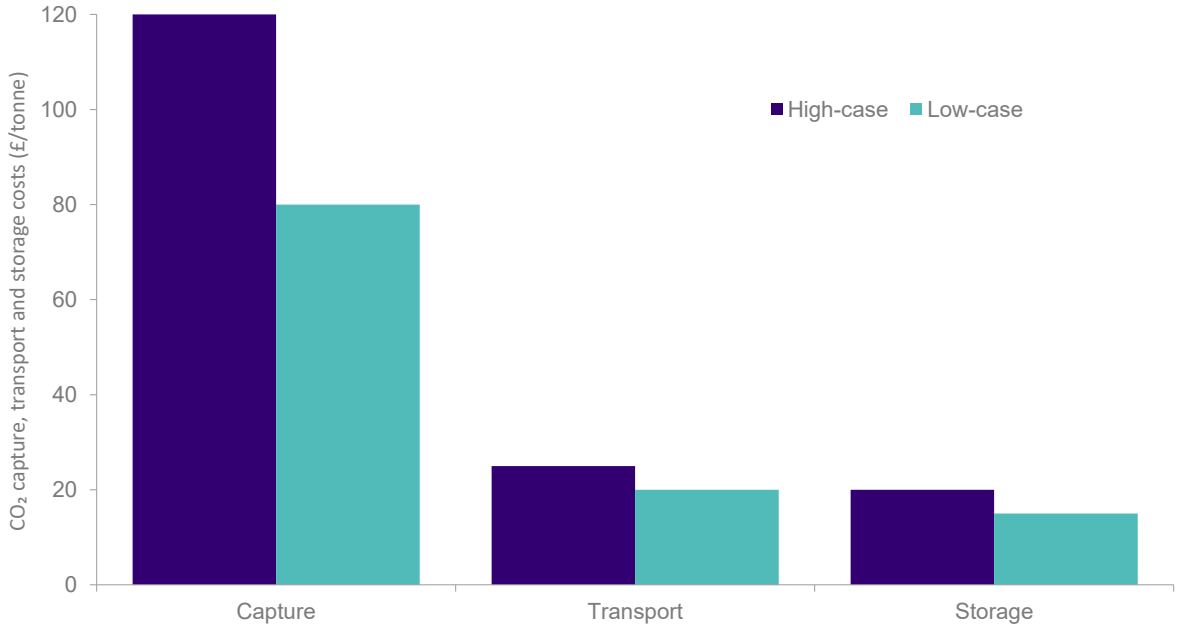
Public funding supports early projects in the market creation phase, where investor risk is balanced by value for the Treasury.

Figure 13
Target development of UK carbon storage capacity



Source: DESNZ

Figure 14
Costs of capturing, transporting and storing carbon



Sources: Rystad, OEUK

Extensive efforts have been made to develop the policy foundations for the sector. This includes business models to support early deployment of the whole value chain, including industrial applications, power with CCS and transportation and storage networks.

Finalising these models is crucial to offer investors long-term assurance. While news of the £20bn support package for CCS is encouraging, clarity about its deployment is still required. Initial Track 1 clusters must proceed to FID soon to give supply chain companies investment confidence.

The journey towards a self-sustaining sector

The UK government's CCUS Vision,[17] published in December 2023, sees the nascent sector becoming self-sustaining by 2035. A self-sustaining market needs a competitive UK Emissions Trading Scheme (UK ETS) price, acting as both an incentive for emitters to decarbonise and a financial reward for transport and storage (T&S) companies. The current instability of the UK ETS price is not conducive to a self-sustaining market. Since it was established at the start of 2021, the UK ETS prices have fluctuated between £31.5/tonne and £97.8/tonne, averaging £36.3/tonne so far this year. CCS projects need a higher price to be self-sustaining.

OEUK estimates the cost of capturing, transporting and storing CO_2 in the UK to range from £115 to £165/tonne, with the capture costing roughly two-thirds of the total. As the market develops, OEUK expects the cost of CCS to fall, settling in the range £90-£130/tonne by the end of the decade, mainly because of economies of scale – especially on the capture side.

Finance costs will also fall as confidence grows in the investability of CCS. While transporting and storing CO_2 in the North Sea is a new concept, the expertise and infrastructure needed are relatively mature because of oil and gas experience.

Streamlining the regulatory landscape

As well as lower costs and greater carbon price stability, the regulatory framework needs to be simplified.

Co-ordination across government bodies and regulators needs to be improved and roles and responsibilities better defined. The onshore and offshore segments of the value chain also need better alignment.

[17] assets.publishing.service.gov.uk/media/6594718a579941000d35a7bf/carbon-capture-usage-and-storage-vision-to-establish-a-competitive-market.pdf

CCS: policy and regulatory priorities	
Clear funding deployment timeline	Industry needs clarity on the timeline for the deployment of the £20bn of support that government announced in 2023 to provide certainty to investors across the value chain.
Enabling non-pipeline transportation	Incorporating non-pipeline transportation such as shipping, rail and road is essential to connect emitters that will be unlikely to have access to the T&S network as they are too far away from it for economic access.
Cross-border transportation of CO_2	Enabling an import market for CO_2 from mainland Europe will play a vital role in maximising our storage potential and will lead to the generation of additional revenues and cost reductions for the development of these facilities. However, there are significant blockers.
Route to market for emitter projects	Emitters outside the Track 1 cluster sequencing process lack a route to market. A mechanism such as an annual competitive allocation process similar to offshore wind rounds would provide certainty to investors and would help the supply chain to prepare to deliver.
Targeted support for supply chains	Ensuring that the UK supply chain for the oil and gas sector remains in the UK is vital for the development of our domestic CCS sector. Existing supply chains in the oil and gas sector could support 84% of CCS spend.

Hydrogen

Hydrogen can help improve energy security and help to realise net zero emissions targets. Its versatility means it could provide a clean source of energy for industrial and domestic uses, heavy transport, and flexible power and energy storage. It may also be less disruptive for consumers and the energy sector workforce given the current extensive use of gas and liquid fuels in the UK.

Given its important role, it needs to be developed at scale. The UK is following a twin-track approach, supporting the production of CCS-enabled hydrogen produced from natural gas ('blue' hydrogen) alongside electrolytic or 'green' hydrogen. Predictions of the scale of the hydrogen sector vary, but the government's Hydrogen Strategy[18] estimates hydrogen could comprise between 20% and 35% of the UK's final energy consumption by 2050.

The onshore and offshore domains need to be better aligned, however. Energy infrastructure, on and offshore, could be reused or repurposed; carbon T&S will be necessary for blue hydrogen; and offshore wind availability will be a critical part of the production process of green.

The strengths of the UK's energy sector, including its supply chain, will enable low carbon hydrogen production, providing important support for the UK's ambition to deliver 10 GW of production capacity by 2030.

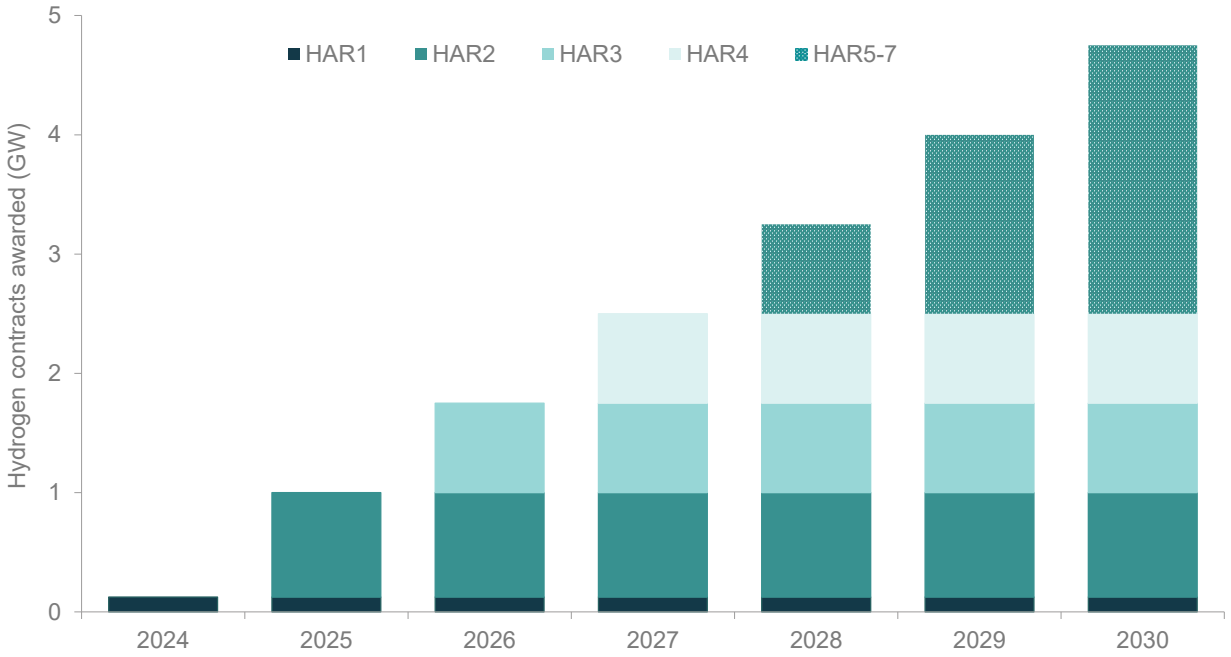
OEUK member companies can build and operate energy infrastructure and they also have the skills and the supply chain to deliver large scale projects.

Government and industry have both made progress on realising the national hydrogen aspiration and the UK has all the ingredients needed to become a global leader in low carbon hydrogen. But faster action is needed for projects to be operational in 2025.

The figure overleaf shows the pipeline of production projects in the UK. Not all will reach a positive investment decision and this will also be influenced by the capacity in the first and second hydrogen allocation rounds (HAR 1 and 2). However the list at least demonstrates the potential scale of the sector and its growth in the coming years.

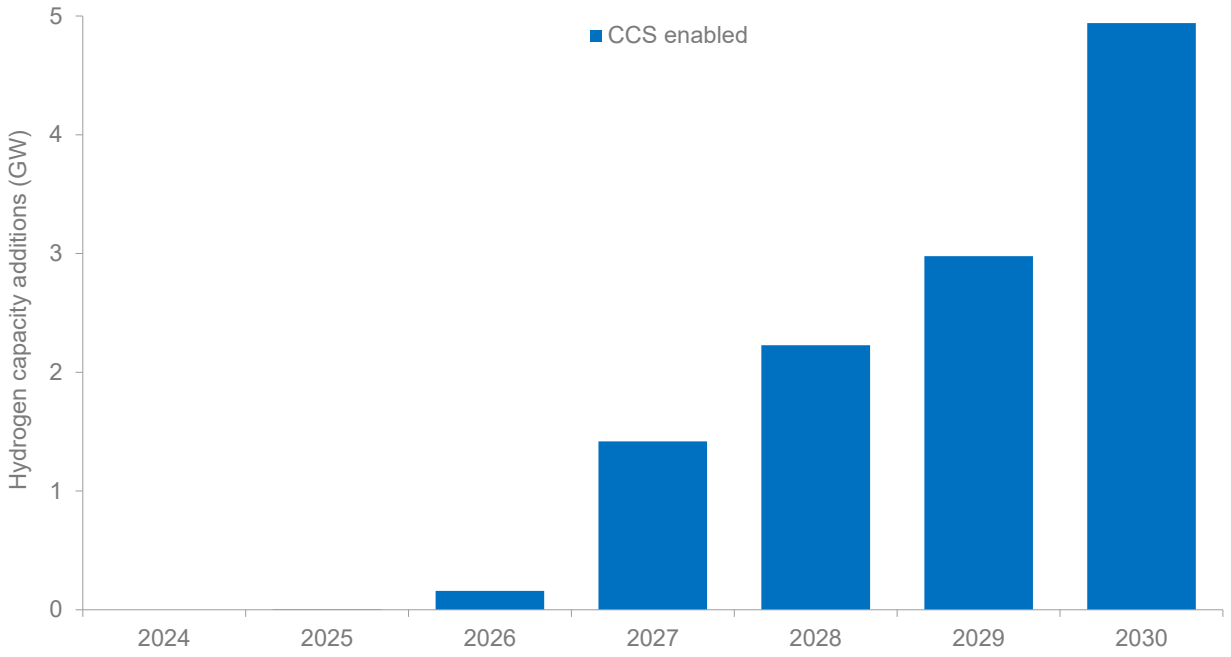
[18] UK hydrogen strategy - GOV.UK (www.gov.uk)

Figure 15a
Electrolytic hydrogen contract awards



Sources: DESNZ, OEUK

Figure 15b
CCS-enabled hydrogen capacity additions



Sources: OEUK, Rystad

Hydrogen policy landscape

The Low Carbon Hydrogen Standard (LCHS) is fundamental to the sector by defining what constitutes low carbon hydrogen. It provides the calculation for greenhouse gas emissions intensity up to the point of production, the maximum threshold of emissions and the accepted production methods.

It represents the standard that producers must comply with in order to receive support from relevant government schemes and policies. The emissions intensity must be 20g CO_2e/MJ Lower Heating Value or less and from a qualifying production method.

The support mechanisms that hydrogen producers can access include the Hydrogen Production Business Model (HPBM), which provides revenue support, and the Net Zero Hydrogen Fund (NZHF), which supports production projects to develop at scale.

Capex makes up about half the total life-cycle costs for hydrogen and half of the total expenditure occurs before the start of production. This highlights the need for support mechanisms, either directly support in the capex-intensive period revenue support or providing revenue support once it is operational.

Development expenditure (devex) may be critical where pre-construction studies and activities are more complex and hence costlier than for established technologies.

Green hydrogen projects will be intrinsically linked to electricity prices as 60% of production costs will come from the electricity required to produce the hydrogen.

The HPBM de-risks production projects by providing a fixed price over a set period. HAR 1 announced 11 successful projects that totalled 125 MW of capacity and the HAR 2 application round has closed with indication that the 875 MW target has been surpassed by the projects that have been submitted.

Early-stage project developers are also faced with complex risk profiles associated with their production facilities. Support mechanisms should reflect this. The details of the agreements that underpin the business model, as well as the procedures and periods, need full consideration and optimisation if they are to incentivise more projects.

Hydrogen T&S infrastructure is critical and business models are being developed to hasten its development. Government is aiming to develop T&S business models (HTBM and HSBM respectively) while also taking on some degree of strategic planning until the National System Energy Operator (NESO) takes responsibility.

This has been fed into the proposed design and assessment of the business models as it can provide greater certainty on network requirements and give confidence to project developers.

Hydrogen to power (H2P) is an important way to help decarbonise the power system effectively and reliably. The government recognises that H2P may represent a higher investment cost than other forms of power supply. But it is proposing an intervention in the market to ensure that the benefits of H2P can be realised.

While there are business models to support the supply side, there are, so far, none on the demand side, except for some mechanisms for fuel switching and hydrogen for heat and transport. It has generally been assumed that demand will grow naturally, but for this to happen there needs to be an existential need for sectors and companies to switch to hydrogen. This arises from the wider energy policy that must be developed in tandem with the hydrogen sector.

Scaling up the hydrogen sector

The progress made to date shows the possibility of scaling up a hydrogen sector but it needs to grow faster if the full potential is to be realised. Government ambitions need clarity and consistency in order to encourage strategic planning. While the government is still responsible for the strategic planning of the hydrogen sector until the NESO includes hydrogen in its remit from 2026, this direction needs to consider hydrogen holistically within the broader energy landscape.'

Hydrogen: strategic priorities	
Funding	Investors need long-term funding mechanisms for production business models before committing capital.
Demand	Early production should continue to focus on industrial fuel switching. Market signals will drive demand from other sectors in the medium and long term. These include hydrogen for heat and the need for infrastructure to drive uptake in the transport and hydrogen to power sectors.
Blending	Positive decision on distribution-level blending to de-risk early electrolytic production projects, transmission-level blending also urgently needed to avoid costs of separating gas and hydrogen imports from the European Union.
Transport and storage	Early electrolytic hydrogen production projects are mostly built next to where it will be used. Future projects will need transport and storage infrastructure. This is progressing too slowly, and business models for transport and storage are still theoretical only.
Exports (molecules)	Capitalise on our production potential and our highly transferable energy infrastructure with a government-led export strategy.

OEUK's quarterly magazine is a one-stop shop for information about the UK offshore energy sector: the supply chain, technology and regulation.

Read our analysis, features and news and marvel at the changes ongoing – and still to come – in the vital businesses of domestic offshore energy production, transport, marketing and processing.

Email editorial@oeuk.org.uk for ideas about promoting your company or for advertising

OEUK.org.uk

info@OEUK.org.uk

@OEUK_

Offshore Energies UK

Working together, we are a driving force of the UK's energy security and net zero ambitions. Our innovative companies, people and communities add value to the UK economy.

Join us today and help strengthen the UK offshore energy industry and your business.

membership@OEUK.org.uk

OEUK OFFSHORE ENERGIES UK