Department for Energy Security & Net Zero

Building the North Sea's Energy Future

Consultation

Closing date: 30 April 2025

March 2025

Any enquiries regarding this publication should be sent to us at:
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Foreword by the Secretary of State for Energy Security and Net Zero

The North Sea will be at the heart of Britain's energy future. For decades, its workers, businesses and communities have helped power our country and our world. And they will do so for decades to come. Oil and gas production will continue to play an important role and as the world embraces the drive to clean energy, the North Sea gives Britain a chance to show new leadership once again.

By seizing this opportunity, we can show global leadership on accelerating the clean energy revolution, ensure good, sustainable jobs for the future and act in line with the science on fossil fuels. The geography and geology of the UK Continental Shelf (UKCS) are a huge asset in technologies like carbon capture, hydrogen and offshore wind. Indeed, the strong winds and subsea characteristics of the North Sea make it one of the best places for offshore wind on the planet, while the UKCS has the capacity to store up to 78 gigatonnes of carbon, offering huge potential for the UK to become a world leader in the carbon capture and storage industry. With the right interventions, the continued development of clean energy industries in the North Sea will create new, high-quality jobs and opportunities.[1] [2]

Britain is well-placed to mobilise this natural advantage, using the skills and expertise of our offshore workforce and supply chain to get ahead in the global race for new jobs and industries. This opportunity is essential for our North Sea communities. North Sea oil and gas production is in natural decline, with a 72% reduction in production occurring between 1999 and 2023,[3] so embracing clean energy is the route to the jobs and investment of the future.

Britain is sprinting to clean energy because it's the only way to deliver energy security, good jobs for the long-term, and a managed, orderly and prosperous transition for the current workforce and communities. At the same time, a science-aligned approach to future oil and gas production is the only way to deliver climate security for future generations.

It is for these reasons that, while we will manage existing oil and gas fields for their lifespan, the government committed not to issue licences to explore new fields. The truth is that irrespective of the position on licences, there is an urgent need to plan for the future of the North Sea. The oil and gas industry has lost around a third of its direct workforce in the last decade. The government is determined to coordinate the scale-up of the industries which will shape the future of the North Sea (including offshore wind, carbon capture and storage, hydrogen, and decommissioning) as oil and gas extraction in the North Sea declines. This is vital for delivering the best outcomes for workers and communities, energy security, and sustainable economic growth.

That is why the government is speeding ahead with investing in clean energy jobs and industries. We have already announced that Great British Energy will be headquartered in Aberdeen, reflecting our commitment that the communities that powered our country's energy past will continue to power its clean energy future. In addition, we have delivered a record-

[1] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023)
[2] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023)
[3] Digest of UK Energy Statistics (DUKES) (2024) Table 1.1.2: https://www.gov.uk/government/statistics/energy-chapter-1-digest-of-united-kingdom-energy-statistics-dukes

breaking renewables auction; kickstarted Britain's carbon capture and hydrogen industries; worked with industry and unions to move forward on a 'skills passport' for offshore workers; and put clean energy at the heart of our modern industrial strategy.

This consultation takes the next step, setting out the framework for the future of energy in the North Sea. This consultation is about a dialogue with North Sea communities – businesses, trade unions, workers, environmental groups and communities – to develop a plan that enables us to take advantage of the tremendous opportunities of the years ahead together.

Rt Hon Ed Miliband MP

Secretary of State for Energy Security and Net Zero

Contents

General information

Why we are consulting

This government wants to drive the development of an internationally-leading offshore clean energy industry, which ensures good, long-term jobs, growth and investment in communities across the North Sea – boosting the country's economy and energy security. This consultation is a critical step in developing the framework to support that ambition.

Responses to the consultation will support the delivery of the government's commitment not to issue new licences to explore new fields, while not revoking existing licences and partnering with business and workers to manage our existing fields for the entirety of their lifespan.

Consultation details

Issued: 5 March 2025

Respond by: 30 April 2025

Enquiries to:

Offshore Energy Transition and Coal Legacy Division
Department for Energy Security and Net Zero
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London
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Consultation reference: Building the North Sea's Energy Future

Audiences:

Oil and Gas Upstream Producer (offshore)

Oil and Gas Upstream Producer (onshore)

Oil and Gas Mid or Downstream Sector

Oil and Gas Supply Chain

Renewable Energy Producer

Renewable Energy Supply Chain

Energy Trader

Energy Supplier

Carbon Capture and Storage Sector

Trade Union

Trade Body or Association

Provider of Finance

Environmental Group

Local community groups and/or representative

Academic

Education and Skills

Accountant / Tax Adviser

Individual

Other

Territorial extent:

Open to all to respond to.

Onshore elements of this consultation are specifically related to England-only. The rest of the consultation relates to UK-wide, unless specified otherwise.

How to respond

Your response should be submitted online using the dedicated online portal:

Respond online at: https://energygovuk.citizenspace.com/energy-security/north-sea-energy-future

You can answer or skip each question and upload attachments through Citizen Space.

Alternatively, please email your responses to the following address, including 'Building the North Sea's Energy Future' in your email subject line.

Email to: northseaenergyfuture@energysecurity.gov.uk

If responding via email, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. The Department for Energy Security and Net Zero (DESNZ) may share consultation responses with the Department for Science Innovation and Technology who are carrying out analysis of consultation responses using an Artificial Intelligence (AI) tool. The AI tool processes data securely and does not copy or share data. There will also be a third-party analysing the responses. The data will only be accessed and used by those authorised to do so. See our privacy policy.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: bru@energysecurity.gov.uk.

The proposals

1. Vision of the North Sea's Clean Energy Future

The development of the North Sea[4] oil and gas industry over the last sixty years has been an historic achievement; a world-leading example of human ingenuity and innovation. Hundreds of thousands of workers have used their skills to tackle mammoth engineering challenges in the most challenging conditions and exported that expertise globally. They have helped to power the world and our economy - particularly in Scotland - and we have created an oil and gas supply chain which has been internationally envied.

We should be proud of the role North Sea oil and gas has played in our country's history and of the important role it will continue to play for decades to come.

The clean energy transition creates an opportunity for our expert oil and gas industry and workers to play a central role in the next generation of energy supply. Our commitments to deliver clean power by 2030 and to accelerate to net zero will guarantee our country's energy security and create jobs but gas will continue to play an important role in ensuring security of supply during the clean power transition. Our work to bring forward the deployment of offshore wind, carbon capture, usage and storage (CCUS), hydrogen and nuclear will create new opportunities for private investment, with a critical role of catalytic public investment, as will the growing need for decommissioning expertise – supporting this government's mission to drive sustainable economic growth. The skills and expertise of our offshore oil and gas supply chain will be critical to delivering that growth in our other offshore energy sectors. While there will continue to be investment opportunities in oil and gas during the transition, the job and investment opportunities arising from our commitment to clean power is well timed: oil and gas production in the North Sea is naturally declining, as the most accessible oil and gas has already been extracted.

Our objectives for the North Sea's Energy Future

Overarching objective: to foster an internationally-leading offshore clean energy industry, which ensures good, long-term jobs, growth and investment in communities across the North Sea, in tandem with a sustainable transition in oil and gas – boosting the country's economy and energy security, in line with our climate obligations.

Supporting objective 1: to ensure our oil and gas workers and supply chain can take advantage of the opportunities of our clean energy transition, creating a global blueprint for a transition which supports prosperity, jobs, growth, communities and energy security.

Supporting objective 2: to take a globally standard-setting, 1.5°C and climate science-aligned approach to future oil and gas production.

Our overarching objective for the North Sea is to make it a world leading example of an offshore clean energy industry. In addition to maintaining our existing fields, and continuing

[4] While most of the UK Continental Shelf is in the North Sea, some of it is not: for example, some is in the Irish Sea or is west of the Shetland Islands. For simplicity, this document uses 'North Sea' and 'UK Continental Shelf' interchangeably.

ongoing domestic production, we want to boost our economy through our expansion of clean technologies and protect our country's energy security in the process.

To achieve this, we need to meet two supporting objectives. First, we need to ensure that the oil and gas industry and its workers can take advantage of our clean energy future. If we plan correctly and take decisive action, industry and government can work together to ensure the valuable skills of our oil and gas workers support roles and growth in the clean energy industry or other high-growth sectors.

Second, our approach to oil and gas production in the North Sea needs to support our climate obligations, including the UK's carbon budgets set under the Climate Change Act 2008. We must speed up the transition away from fossil fuels and towards clean energy. The science is clear that the world needs to take urgent action and that current plans for global production of oil and gas are not compatible with limiting global warming to 1.5°C.[5] [6] That's why the government has committed to issuing no new licences to explore new oil and gas fields.

This government is committed to following the evidence and ensuring we accelerate to our clean energy future to boost our energy security and be winners in the race for the good jobs in the new industries of the future. We must deliver these objectives while supporting our oil and gas sector to manage existing fields and meet our obligations to manage the legacy of oil and gas production in the North Sea – such as the decommissioning of infrastructure and environmental restoration.

We can only deliver these ambitions and take advantage of these opportunities by working in partnership with unions, industry, communities and the devolved governments. We have already begun working to support skills passporting to help workers into new roles. Collaboration across the private and public sectors has been fundamental to the contribution that oil and gas has made to the UK in the last sixty years, and will be even more important as we accelerate towards net zero. We continue to support the aims of the North Sea Transition Deal for that reason.

In partnership with industry, devolved governments and regulators, we will also need to take advantage of the opportunities for industries to work together as the basin evolves over time – for example, through development of strategic integrated energy 'hubs' that combine multiple technologies such as CCUS, solar, hydrogen and offshore wind.

The rest of this document will set out why we are acting, plans for our clean energy future, and what more we propose to do to reach that vision.

Section 2 sets out the case for action. While recognising the continued demand for oil and gas, we need to respond to the natural decline of the North Sea basin, the workforce implications, the ongoing threats to the UK's energy security, and the climate science.

Section 3 sets out our plans for accelerating investment in net zero and other sectors, creating high-quality, well-paid jobs for oil and gas workers, improving our energy security and reducing our exposure to volatile oil and gas prices. It also seeks views on how we can best support workers, supply chains and communities through the transition. This includes ensuring that oil

[5] International Energy Agency (IEA) (2023), 'Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach, IEA, Paris' https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach

[6] Stockholm Environment Institute (SEI), Climate Analytics, E3G, IISD, and UNEP (2023), 'The Production Gap: Phasing down or phasing up? Top fossil fuel producers plan even more extraction despite climate promises', https://www.unep.org/resources/production-gap-report-2023

and gas workers have the skills they need; that industry recognises those skills; that supply chains have the certainty they need to transition their work towards net zero-aligned industries; and that communities, particularly in north-east Scotland, prosper. It also considers other opportunities for the oil and gas industry, including other sectors in our forthcoming *Invest 2035* industrial strategy as well as oil and gas decommissioning.

Section 4 sets out how we will ensure that our regulatory approach to oil and gas production remains world-leading but adapts to better meet the ambition for our energy future. We want to create a steady, effective regulatory and fiscal environment for oil and gas production – one which incentivises decarbonisation of production and supports other technologies, as evidenced by recent announcements in the October 2024 Budget.[7] The section will seek views on the detail of the government's commitments on licensing, our plans to manage the decline in oil and gas production, and how to manage the interconnected nature of the UK Continental Shelf (UKCS) – for example through the development of 'hubs' to support cooperation between sectors on physical infrastructure and on commercial opportunities. It proposes changes to the North Sea Transition Authority's principal objective and powers to ensure that our regulatory regime supports these objectives.

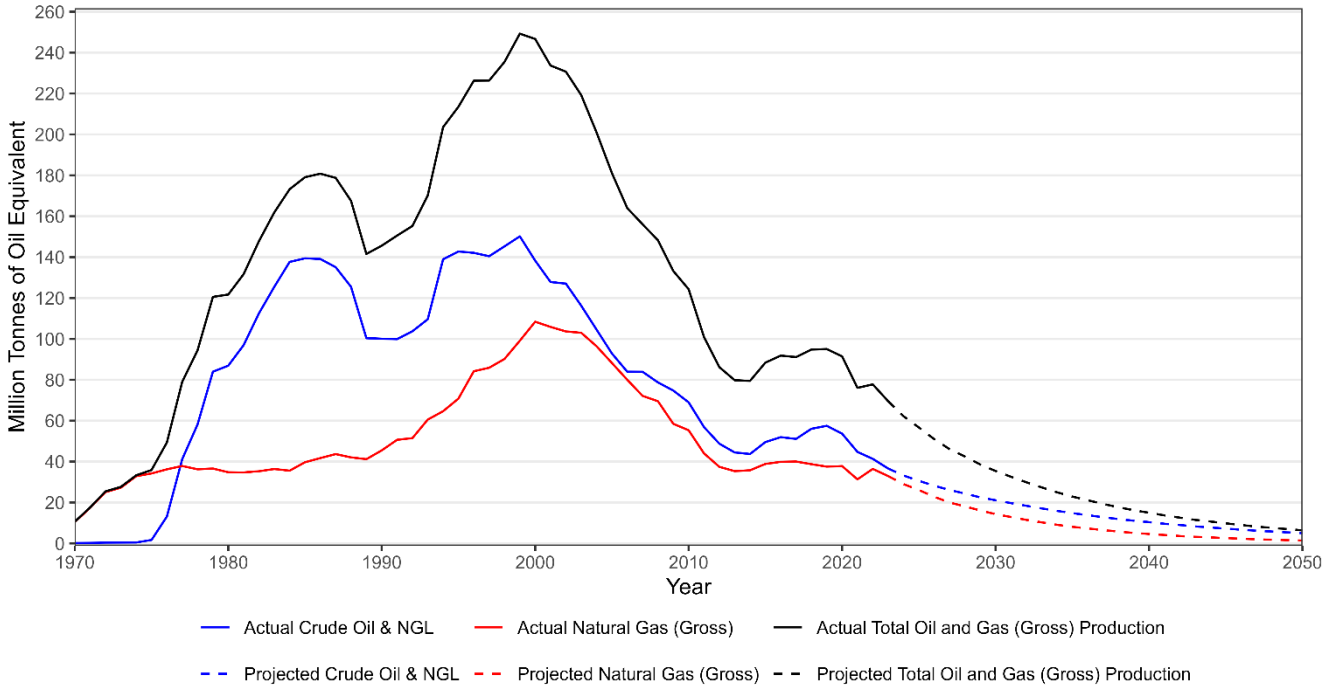
[7] For example, the government announced that it will not be making changes to the availability of capital allowances (including 100% First-Year Allowances) in the Energy Profits Levy (EPL), and the decarbonisation investment allowance will remain and be adjusted to 66% to ensure companies benefit from the same level of tax relief per £100 of decarbonisation investment after the rate of EPL increases. Autumn Budget (2024), 'Policy decisions, Page 131, 5.76 Energy Profits Levy', https://www.gov.uk/government/publications/autumn-budget-2024

2 The need for action to secure the future of the UKCS

2.1 Future oil and gas production in the UK

The UK's offshore oil and gas industry launched sixty years ago, when the first licence to explore for oil and gas in the North Sea was issued to British Petroleum (BP). This long history of oil and gas production in the UK means our offshore basin is mature – much more so than other areas of the world. The most accessible oil and gas has already been extracted. Production is naturally declining and has done so for the last 25 years. Our North Sea no longer has the reserves available to meet domestic energy demand.

Figure 11 Historical and projected UK oil and gas production.[8] [9]



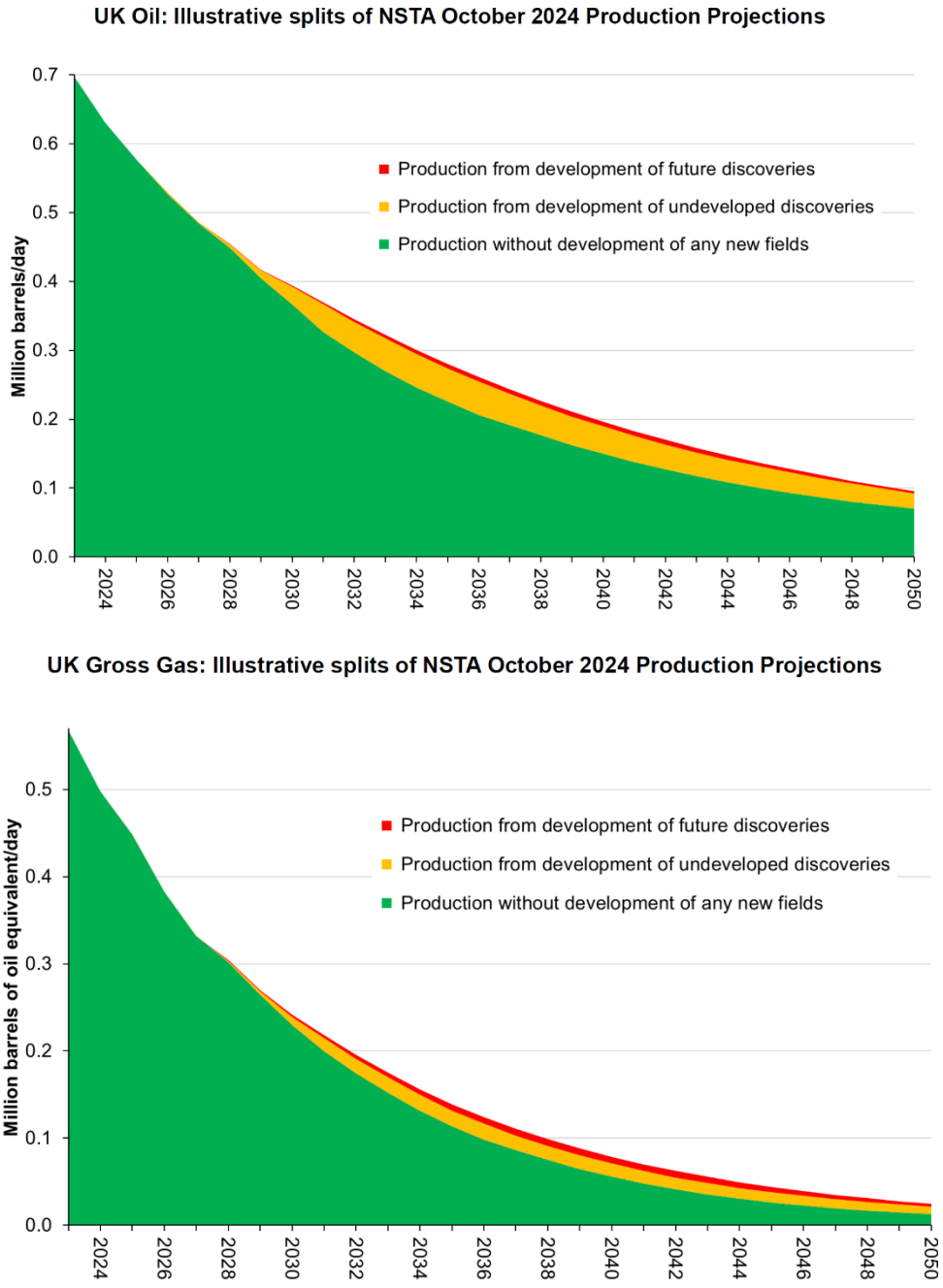
As Figure 2 shows, the vast majority of future production is expected to come from producing fields or fields already being developed on existing licences. Future production is expected to be around two thirds oil and one third gas.[10]

[8] Historical production figures obtained from the DESNZ Digest of UK Energy Statistics (DUKES) (2024), Table 1.1.2, https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes; Projected production figures obtained from the North Sea Transition Authority's (NSTA) October 2024 Production and Expenditure Projections https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/

[9] Projected production figures obtained from NSTA include undeveloped and future discoveries.

[10] North Sea Transition Authority (NSTA) (October 2024), 'Production and Expenditure Projections', https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/

Figure 2 NSTA Projections of UK Oil and Gross Gas Production to 2050 by Production Grouping[11]

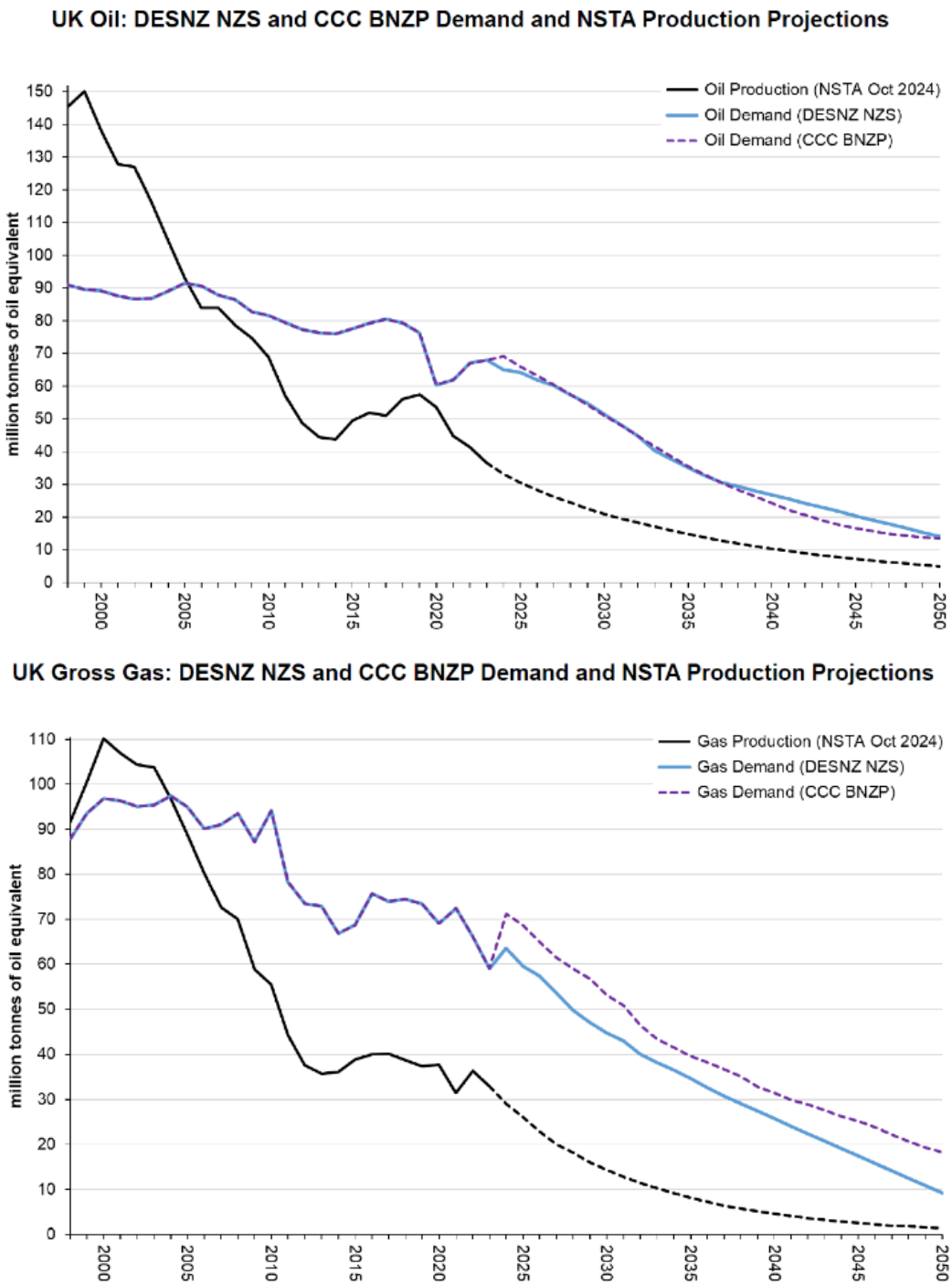


The NSTA's October 2024 projections suggest a decline at approximately 7% (oil) and 11% (natural gas) annually.[12] They show an 89% fall in oil and net gas production expected by 2050 compared with 2024.[13]

[11] North Sea Transition Authority (NSTA) (October 2024), 'Production and Expenditure Projections', https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/
[12] North Sea Transition Authority (NSTA), https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/
[13] North Sea Transition Authority (NSTA) (October 2024), 'Production and Expenditure Projections', https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/

Natural gas demand has been decreasing. Demand in 2023 was down 17% on 2013 and 36% on 2003. [14]

Figure 3 NSTA Historical and Projected UK Oil and Gas Production compared to Historical and Projected Oil and Gas Demand[15]



[14] DESNZ, February 2025. Energy Trends: UK Gas Table 4.2. Available at: https://www.gov.uk/government/statistics/gas-section-4-energy-trends

[15] North Sea Transition Authority (NSTA) (October 2024), 'Production and Expenditure Projections', https://www.nstauthority.co.uk/data-and-insights/insights-and-analysis/production-and-expenditure-projections/

Given the basin's maturity and the high proportion of production that will come from existing developments, we expect that the government's commitment not to issue new licences will make a marginal overall difference to future North Sea production (see Section 4).

As we approach net zero, some demand for oil and gas will remain in harder-to-abate sectors for some time to come. Oil and gas will continue to play an important role in these sectors, which is why we will partner with business and workers to manage our existing fields for the entirety of their lifespan. This will help meet that demand while securing other benefits for the UK. CCUS will be critical to abating emissions from the use of oil and gas in the future (see section 3), as will our work to decarbonise production. The government's commitment to the decarbonisation investment allowance in the Energy Profits Levy, as set out at Budget 2024, is testament to our commitment to supporting the decarbonisation of the sector during the ongoing temporary period of higher, price-induced taxes, and in line with the aims of the North Sea Transition Deal. To give long-term certainty to the sector and its investors as it supports oil and gas demand, alongside this document, the government has published a consultation to explore the tax response to long-term price shocks that will be introduced after the Energy Profits Levy ends in March 2030.[16]

2.2 Securing job opportunities for the future

Domestic oil and gas production has played an essential role in the UK's energy system over previous decades and it will continue to play a role in the decades to come. Our oil and gas sector has attracted major international investment, significantly contributes towards our economy, and directly employs tens of thousands of highly skilled workers right across the UK. The sector's engineering and offshore expertise is internationally renowned, supporting areas from subsea robotics to high-performance computing.

But the natural decline of oil and gas in the North Sea is already having an impact on those jobs and will continue to do so. ONS figures show that direct jobs in oil and gas extraction fell by around a third between 2014 and 2023.[17]

More broadly, historic trends using data from the 2021-2024 Offshore Energies UK (OEUK) Workforce Insight Reports[18] show a sharp decrease in oil and gas jobs, including both direct[19] and indirect,[20] from 191,000 in 2016 to 121,000 in 2023 – approximately a 37% decline (see Figure 4). This shows the decrease in the oil and gas workforce over the recent years and

[16] Oil and Gas Price Mechanism (2025), https://www.gov.uk/government/consultations/oil-and-gas-price-mechanism-consultation

[17] Office for National Statistics (ONS) (2024), 'Business Register and Employment Survey by Industry, 2023 (provisional) and 2014 (revised) editions', Table 2b UK, https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/industry235digitsicbusinessregisterandemploymentsurveybrestable2

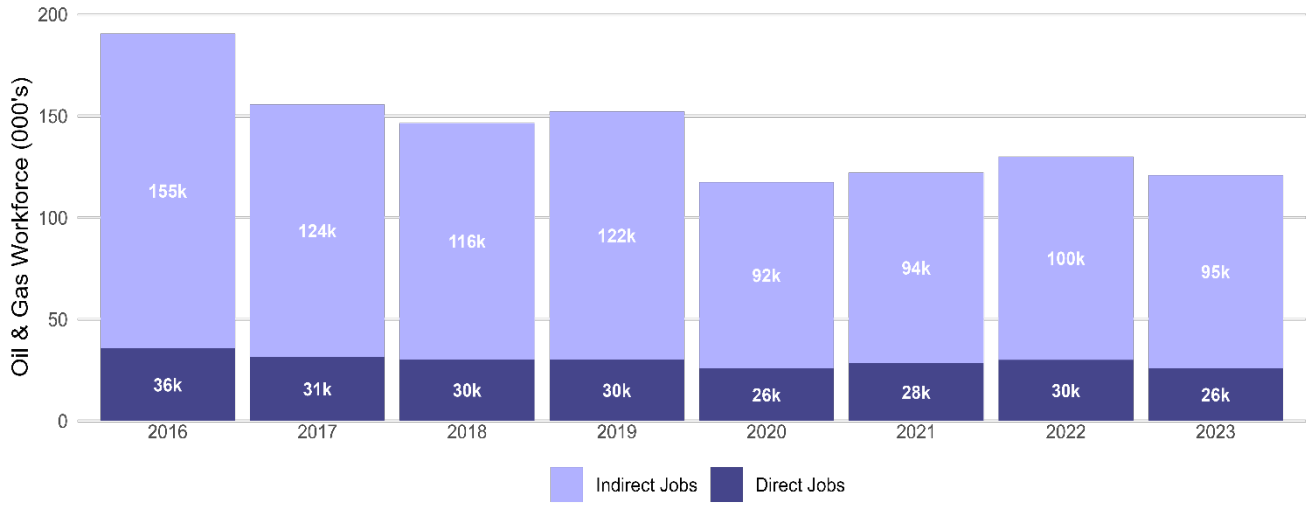
[18] Offshore Energies UK (OEUK) (2021, 2022, 2023, 2024), 'Workforce Insight reports 2021 – 2024' 'Economy & People Report':,https://oeuk.org.uk/wp-content/uploads/woocommerce_uploads/2021/08/OGUK_Workforce-Employment-Insight-2021-z07os0.pdf, https://oeuk.org.uk/wp-content/uploads/2022/11/OEUK-Workforce-Insight-2022.pdf, https://oeuk.org.uk/product/oeuk-workforce-insight-2023/, https://oeuk.org.uk/product/economy-people-report-2024/

[19] Offshore Energies UK (OEUK) (2024), 'Economy & People Report' - https://oeuk.org.uk/wp-content/uploads/woocommerce_uploads/2024/06/Economy-and-people-report-2024-OEUK-fthaik.pdf - *Direct jobs are those which are created by businesses whose activities are primarily focused on energy production and specific supply chain activities.*

[20] Offshore Energies UK (OEUK) (2024), 'Economy & People Report' - https://oeuk.org.uk/wp-content/uploads/woocommerce_uploads/2024/06/Economy-and-people-report-2024-OEUK-fthaik.pdf - *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.*

places a spotlight on the opportunity to ensure the workforce transitions into clean energy successfully.

Figure 42 Oil & gas workforce between 2016-2023.[21] Estimates include both direct and indirect jobs.



Robert Gordon University (RGU) developed a range of scenarios[22] which project a continued decline in oil and gas jobs. Their work showed that the direct and indirect oil and gas workforce was forecast to decline from 120,000 in 2023 to between 60,000-87,000 in 2030.[23] At the same time, RGU estimated the offshore renewables workforce, which includes offshore wind, CCS, and hydrogen, could increase to between 70,000 and 138,000 in 2030, subject to realised deployment across those technologies and proportion of UK content delivered by the domestic supply chain. At the same time, findings from RGU's 2021[24] review showed that over 90% of the UK's oil and gas workforce have medium to high skills transferability and are well positioned to work in adjacent energy sectors, reiterating the significant opportunity to deliver a managed transition for the sector's workforce.

2.3 Improving our energy security

A clean energy future for the North Sea is necessary to improve our energy security while domestic oil and gas production declines. The UKCS is perfectly positioned to be at the forefront of the drive towards secure and affordable clean energy. While we recognise the

[21] Offshore Energies UK (OEUK) (2021, 2022, 2023, 2024), 'Workforce Insight reports 2021 – 2024' 'Economy & People Report': https://oeuk.org.uk/wp-content/uploads/woocommerce_uploads/2021/08/OGUK_Workforce-Employment-Insight-2021-z07os0.pdf, https://oeuk.org.uk/wp-content/uploads/2022/11/OEUK-Workforce-Insight-2022.pdf, https://oeuk.org.uk/product/oeuk-workforce-insight-2023/, https://oeuk.org.uk/product/economy-people-report-2024/

[22]Scenario 1 reflects the ambitions set out in the British Energy Security Strategy (April 2022). The scenario assumes successful delivery of 50GW of installed wind capacity, 10GW of installed hydrogen capacity and 30 million tonnes of CO2 injectivity by 2030. The 50GW installed wind capacity target reflects 45GW of fixed wind and 5GW of floating wind capacity. Scenario 2 represents a mid-point scenario and assumes offshore wind, hydrogen and CO2 injectivity reach 40GW, 5GW and 20 million tonnes by 2030 respectively. Scenario 3 reflects significantly slower progress toward delivering a successful energy transition, with offshore wind, hydrogen and CO2 injectivity reaching 30GW, 2.5GW and 15 million tonnes by 2030 respectively.
Further detail on modelled scenarios available in Robert Gordon University (RGU) (2023), 'Powering up the Workforce', https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023),.

[23] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', Page 15, https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023)

[24] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', Page 5, https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023)

continued importance of oil and gas, we expect that the government's commitment not to issue new licences to explore new fields will make a marginal overall difference to future North Sea production.

UK crude oil production is currently equivalent to two-thirds of refinery demand, but the chemical characteristics of crude from the UKCS means it is more cost effective for UK refineries to process imported crudes. As a result, 80-90%[25] of UK oil refinery input is already imported from a diverse range of supply production sources, and most crude oil produced in the UK is processed by refineries abroad. Changes in UKCS oil production would have little impact on the UK's fuel supplies.

Domestic gas production made up 44% of all gross supply into the UK (not considering exports) in 2023, and our position as a net importer means that we already have a robust set of import routes for gas, including direct connection to the Norwegian Continental Shelf and continental Europe via pipelines.[26] We are also connected to global Liquefied Natural Gas (LNG) markets via three LNG import facilities, which together constitute the second largest LNG port infrastructure in Europe. Although there are emissions associated with LNG, demonstrating the need to move to clean energy sources, it does provide a flexible source of gas during the transition, with global LNG supply expected to grow by nearly 50% from 2024 levels by 2030.[27]

The government's approach to new licences will not change the factors underpinning our price security. As long as we remain reliant on oil and gas, the UK is exposed to the ups and downs of the international fossil fuel market. This was starkly demonstrated during the 2022 energy crisis. While the UK's energy system demonstrated its reliability, despite Russia cutting off most pipeline gas supplies to Europe, households and businesses across the UK felt the impact of rocketing international gas prices, wherever our gas was sourced from. Our exposure to fossil fuels left us at the mercy of global energy markets.

Indeed, although just under half of the UK's gross gas supply in 2022 was provided by the UKCS,[28] and just 4% of our imported gas had come from Russia in 2021 prior to the energy crisis,[29] this did not protect us from historically high energy prices and bills, which rose via the energy price cap by over £2,800 in a year for a typical household over the course of Winter 2022/23.[30] Both gas and oil are traded on the international market and UKCS oil and gas production volumes have a minimal effect on prices. Domestically produced oil and gas does not mean cheaper oil and gas.

As long as consumers remain exposed to international energy markets through dependency on oil and gas for energy, they will be vulnerable to shocks impacting energy costs which drove the cost-of-living crisis. By contrast, exploiting the vast clean energy opportunities available to Great Britain has the potential to deliver the secure, homegrown clean energy British consumers need. While international gas prices rocketed in 2022, record levels of generation

[25]Digest of UK Energy Statistics (DUKES) (2024), 3.1,https://www.data.gov.uk/dataset/894d91a9-5d13-4220-b9a2-e124e6436304/digest-of-united-kingdom-energy-statistics-dukes
[26] Digest of UK Energy Statistics (DUKES) (2024), 4.2, https://www.data.gov.uk/dataset/894d91a9-5d13-4220-b9a2-e124e6436304/digest-of-united-kingdom-energy-statistics-dukes
[27] International Energy Agency (IEA) (2024), 'World Energy Outlook', https://www.iea.org/reports/world-energy-outlook-2024
[28] Statutory Security of Supply Report (2023), https://www.gov.uk/government/publications/statutory-security-of-supply-report-2023
[29] Statutory Security of Supply Report (2022), https://www.gov.uk/government/publications/statutory-security-of-supply-report-2022
[30] This increase does not include the impact of government support through the Energy Price Guarantee (EPG) and Energy Bills Support Scheme (EBSS).

were provided by Great Britain's offshore and onshore wind capacity and by solar photovoltaic (PV).[31] The government intends to radically increase the deployment of homegrown clean energy sources to help bring down energy bills for good.

Hence, this government has committed to the actions to drive investment and growth, set out in Section 3, that will power a clean energy revolution to protect British billpayers and deliver energy security.

2.4 1.5°C and climate science-aligned approach to oil and gas production

In 2015, the UK and 195 other parties signed the Paris Agreement at COP21 – an international treaty committing signatories to limit the increase in the global average temperature to well below 2°C above pre-industrial levels, while pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Our commitment to deliver on our ambitious carbon budgets and reach net zero by 2050 is crucial for demonstrating the UK's global leadership on meeting this goal.

Scientific evidence from the International Energy Agency[32] and the United Nations Environment Programme[33] has highlighted the unacceptably high risk that new fossil fuel exploration and production would lock-in global warming exceeding 1.5°C. Additionally, the Intergovernmental Panel on Climate Change has stated with high confidence that "Projected CO2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C."[34] [35] This heightens the imperative to transition away from global fossil fuel production on the pathway to net zero.

At COP28 in 2023, the first 'global stocktake' of the world's progress on climate change under the Paris Agreement found that progress was too slow across all areas. This prompted an international agreement at the end of COP28, to which the UK agreed, to transition away from fossil fuels in an orderly and equitable manner, accelerating action in this critical decade. This is essential to keep the global temperature limit of 1.5°C within reach, which will be key to avoiding the worst climate impacts and catastrophic risks.

Oil and gas will play a role in the UK and around the world for decades to come. Technologies such as carbon capture, usage and storage (CCUS) can play a role in mitigating the impact of any continued domestic use of oil and gas by capturing the carbon they produce and storing it.

CCUS is a versatile technology that has a role to play in decarbonising multiple sectors. It can help decarbonise our electricity system, our heavy industries such as cement and chemicals, our waste and aviation sectors, and support the growth of the hydrogen economy. It will also be needed to support delivery of negative emissions to offset remaining sectoral emissions.

[31] Energy Trends (2023), Section 6, https://www.gov.uk/government/statistics/energy-trends-march-2023
[32] International Energy Agency (IEA) (2023), 'Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach, IEA, Paris' https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach
[33] Stockholm Environment Institute (SEI), Climate Analytics, E3G, IISD, and UNEP (2023), 'The Production Gap: Phasing down or phasing up? Top fossil fuel producers plan even more extraction despite climate promises', https://www.unep.org/resources/production-gap-report-2023
[34] IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001
[35] The term 'carbon budget' in this sentence does not represent the UK's legally binding carbon budgets.

But as noted, the climate science is clear that current plans for global production of oil and gas are not compatible with limiting global warning to 1.5°C.[36] We are proud to have worked with industry for decades to become one of the global leaders in the development of offshore oil and gas, transforming the availability of energy across the world. Now, we have the opportunity to achieve global leadership in driving forward a clean energy future. We have already set out our new targets to achieve clean power by 2030,[37] and to reduce emissions by at least 81% by 2035 compared to 1990 levels.[38] We must therefore continue to work with industry as we transition towards a globally standard-setting approach to low carbon alternatives, while also continuing progress to date on decarbonising oil and gas production and on achieving our strong potential to become a world-leader in decommissioning services.

This is a global and national imperative. We cannot ignore the impacts of both the production and consumption of North Sea oil and gas, whether the emissions happen within the UK or elsewhere following export. This position has been reinforced by the Supreme Court's recent 'Finch' case ruling.[39] The government has acted swiftly to consult on new environmental guidance for oil and gas firms to ensure that the impact of burning oil and gas, known as 'scope 3' emissions, is considered in the Environmental Impact Assessment for new projects.[40] The government also understands the uncertainty this is causing for the industry, and is committed to publishing the final new guidance in good time.

We will work closely with international partners to learn from those undergoing similar changes, and support others to implement their own phased, responsible and prosperous clean energy transitions.

Importantly, our global leadership on climate change and our mission to make Britain a clean energy superpower are also fundamental to government's mission to kickstart economic growth. Clean energy industries are one of the eight key growth-driving sectors, as set out in our recent modern industrial strategy, with high potential to deliver business opportunities and high-quality jobs. It is vital that we act now to ensure the North Sea is at the forefront of this drive to sustainable growth, as set out in section 3.

[36] See for example IEA (2023): "The path to limiting global warming to 1.5 °C has narrowed, but clean energy growth is keeping it open" https://www.iea.org/news/the-path-to-limiting-global-warming-to-1-5-c-has-narrowed-but-clean-energy-growth-is-keeping-it-open, and Energy Transitions Commission (2023) "Fossil Fuels in Transition: Committing to the phase-down of all fossil fuels https://www.energy-transitions.org/publications/fossil-fuels-in-transition/#download-form

[37] DESNZ (2024), https://www.gov.uk/government/publications/clean-power-2030-action-plan

[38] DESNZ (2024), https://www.gov.uk/government/news/uk-shows-international-leadership-in-tackling-climate-crisis

[39] R (on the application of Finch on behalf of Weald Action Group) v Surrey County Council and others [2024] UKSC 20 (2024)

[40] Consultation on draft supplementary EIA guidance (2024), https://www.gov.uk/government/consultations/consultation-on-draft-supplementary-eia-guidance

3 Government plans to invest to build the North Sea's future

By grasping the opportunities of the clean energy transition, we can ensure that the North Sea plays an even bigger role in our country's energy story than it has over the last sixty years.

For the purposes of this consultation, we refer to:

- 'Clean energy industries' which directly support our net zero ambitions and are one of the eight high-growth sectors across services and manufacturing identified in *Invest 2035: the UK's modern industrial strategy*.[41]
- 'Other high-growth sectors' which otherwise support our *Invest 2035* industrial strategy.

3.1 Planned investment in clean energy industries

We are determined to deliver a clean energy revolution which will make Britain a clean energy superpower. This requires a big change from the past; it requires our approach to have a clear industrial strategy and a plan for the future. We will not create these opportunities without public investment working hand in hand with private investment to make it happen. That is why the government has established both the National Wealth Fund and Great British Energy, headquartered in Aberdeen, to help drive the jobs of the future.

Our clean energy superpower mission is a signal of the government's commitment to restoring the UK's global leadership on climate and has the potential to create huge opportunities for growth and jobs in the North Sea. The skills and expertise of our offshore oil and gas industry will be key to taking advantage of this opportunity, and will support a managed, prosperous transition away from fossil fuels.

The available pathways to a phased, responsible and prosperous transition will require focus, support and catalytic public investment to achieve them. According to research by RGU,[42] 'significant levels of new operational capacity and capability will be required to deliver on the ambition of up to 40% UK capex content for new offshore wind projects and up to 50% for oil and gas decommissioning activities by 2030'. But this government has already made its intentions and ambitions clear.

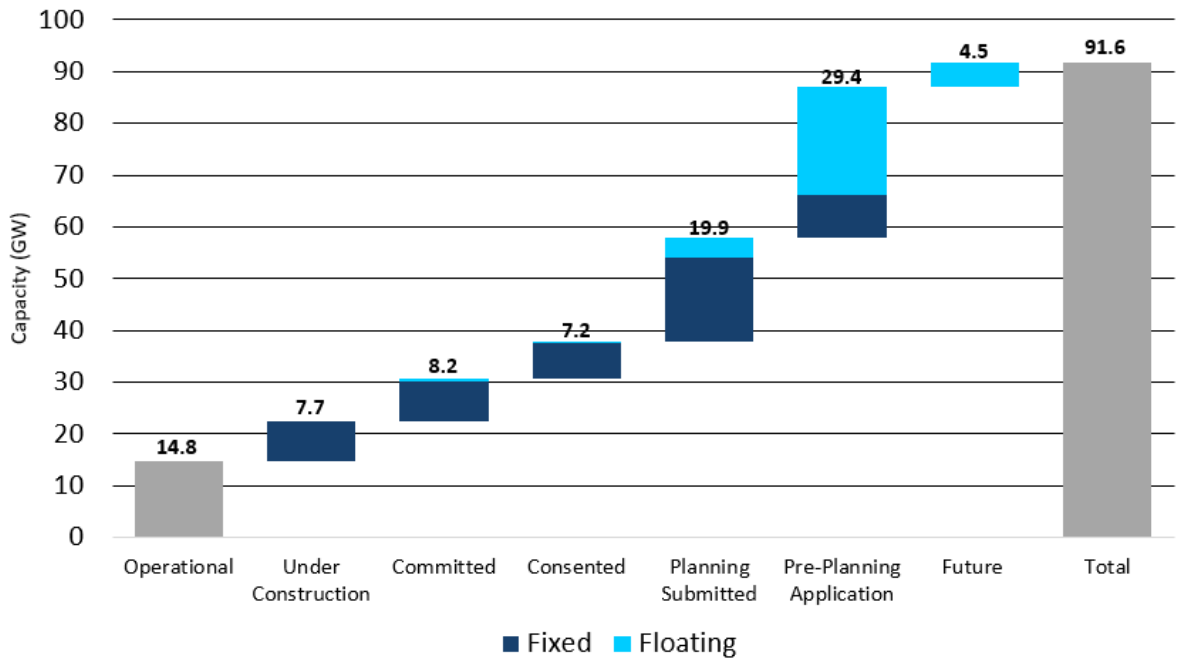
The government also recognises the continuing role of gas generation to provide flexibility and ensure security of supply in a clean power system. As set out in the Clean Power Action Plan, by 2030 while running hours will be significantly lower and unabated gas will account for less than 5% of total generation, it will be important to retain the unabated gas capacity needed to maintain security of electricity supply until longer-duration low-carbon flexible technologies (such as power CCUS or Hydrogen to Power) are deployed at scale.

[41] *Invest 2035* outlines eight key sectors including jobs within Advanced Manufacturing, Clean Energy industries, Creative Industries, Defence, Digital and Technologies, Financial Services, Life Sciences, Professional and Business Services.

[42] Robert Gordon University (RGU) (2024), 'Delivering Our Energy Future: Pathways to a 'just and fair' transition', Energy Transition Institute, Key Findings, Page 3, https://www.rgueti.com/wp-content/uploads/2024/05/63968-Delivering-Our-Energy-Future.pdf

3.1.1 Offshore wind

Figure 5 3 Current UK offshore wind pipeline (GW)[43]



As shown in Figure 5, the UK has 14.8 Gigawatts (GW) of fixed offshore wind already generating electricity in Great Britain. In addition, the pipeline includes 7.7GW of projects under construction, 8.2GW which is preparing for construction, and 7.2GW consented.

The UK's geography makes it particularly well placed to benefit from wind power. The government intends to radically increase the deployment of offshore wind. In 2024, industry published the Offshore Wind Industrial Growth Plan. The Plan sets out different levels of (private and public) investment it believes are required to achieve long-term priorities, objectives, and actions needed to grow the supply chain. This will help accelerate and de-risk delivery, as well as grow market share and technology leadership in the UK. In December 2024 we announced that the Offshore Wind Growth Partnership will become the new delivery body to deliver the priorities in the Plan which will support and grow the UK supply chain.

There are excellent opportunities for oil and gas workers to benefit from the government's investment into floating offshore wind, a nascent technology, for which two major deployment zones will be the Celtic Sea and the northern North Sea, off the coast of Scotland. There is already around 25GW of capacity under development in Scottish waters, having secured seabed exclusivity through Crown Estate Scotland's leasing round.[44] We know that there is a strong correlation between the capability and skills of the existing UK oil and gas sector and floating offshore wind[45] and so the proximity of this pipeline of projects, combined with the importance of fabricating and assembling turbines near to deployment zones, will provide opportunities for oil and gas supply chain companies and workers to transition into the floating offshore wind supply chain as the technology commercialises and the sector grows. The Floating Offshore Wind Manufacturing Investment Scheme (FLOWMIS) is making available

[43] Compiled by DESNZ based on data from the published Renewable Energy Planning Database (REPD) and public planning websites - up to date as of end Q3 2024.
[44] Compiled by DESNZ based on data from the published Renewable Energy Planning Database (REPD) and public planning websites - up to date as of end Q3 2024.
[45] Offshore Energies UK (OEUK) (2024), https://oeuk.org.uk/rystad-energys-energy-supply-chain-report-shows-potential-prize-for-the-uk/

grant funding to support the development of port facilities for commercial-scale floating offshore wind deployment.

The Contracts for Difference (CfD) scheme is the government's main mechanism for supporting low carbon electricity generation projects in Great Britain. The seventh CfD allocation round is anticipated to open in summer 2025. CfDs incentivise investment in renewable energy by providing developers of projects with high upfront costs and long lifetimes with income stabilisation, making projects that have high up-front costs but long lifetimes and low running costs attractive to investors and lenders. They also protect consumers when electricity prices are high.

In November 2024, we announced the Clean Industry Bonus (CIB), which will enable further investments into the sustainability of the offshore wind supply chain. Delivering on a government commitment, the Clean Industry Bonus will come with an initial £27 million budget per GW of offshore wind projects. This means if between 7 to 8GW of offshore wind apply, the budget could go up to £200 million.[46] The CIB will give proper incentives to companies to invest in more sustainable manufacturing to support offshore wind.

The bonus is designed to create the conditions for offshore wind to thrive in the UK and elsewhere, while rewarding firms for investing in less polluting suppliers – tackling the climate crisis at home and abroad. It will help to crowd in private investment to build more sustainable offshore wind blades, cables and ports, reducing industrial emissions and helping support the rollout of clean, secure power for families and businesses.

3.1.2 Carbon Capture, Usage and Storage (CCUS)

The North Sea offers fantastic opportunities for the development of CCUS, empowering the UK to become a global pioneer in decarbonisation, including in Scotland. The UK offshore is geologically and geographically favourable for the storage of CO2 with some of the highest potential for CO2 storage across Europe. Our offshore basins have a unique abundance of sites that can safely store CO2 long term, as evidenced by our long and successful oil and gas history.

There is significant potential for CO2 import. Many European countries will need to export their CO2, and the UK is likely to have significant extra capacity available beyond what is needed for domestic storage needs, creating an opportunity for growth.

CCUS will be a critical component of the UK's energy transition, and the Climate Change Committee has said that CCUS is 'a necessity, not an option'.[47] The UKCS offers the potential for 78Gt of CO2 storage capacity, making it an attractive location to deploy CCUS technology.[48]

The UK is ideally positioned to lead the global development and deployment of CCUS, given its industrial experience and world-leading capital investment landscape. This represents an opportunity for UK supply chains in industrial carbon capture to develop new capabilities and secure a substantial global market share for these technologies.

In October 2024, we confirmed up to £21.7 billion of funding over 25 years to make the UK an early leader in CCUS and hydrogen. The new carbon capture and CCUS enabled hydrogen projects will support 4,000 new jobs, sustain important British industry, and provide capacity to

[46] DESNZ (2024), https://www.gov.uk/government/news/boost-for-uk-clean-energy-growth-as-pm-arrives-at-cop29
[47] Committee on Climate Change (2019), 'Net Zero: The UK's contribution to stopping global warming', pg. 178, https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/
[48] UK Storage Appraisal Project (UKSAP) https://www.co2stored.co.uk/home/about_faq

remove over 8.5 million tonnes of carbon emissions each year – the equivalent of taking around 4 million cars off the road.[49]

We are taking bold steps to turn our ambitions for Power CCUS into reality. On 10 December 2024 the first contracts for the East Coast Cluster were signed, including the first ever at-scale gas power CCUS project in the world, Net Zero Teesside. It is set to provide 740MW of flexible power capacity from 2028, enough power for up to 1 million homes.[50]

The government's investment in carbon capture will inject growth into the industrial heartlands of the north-west and north-east of England while powering up the rest of the country. An up-and-running carbon capture industry is expected to add around £5 billion per year of gross value to the UK economy by 2050.[51]

Engineering, procurement and construction (EPC) companies are a critical part of the UK CCUS sector given our extensive history in oil and gas exploration and will be vital to safeguarding jobs and ensuring a smooth transition away from oil and gas. It is expected that EPC industries will make up over a fifth of CCUS net zero spend by 2035.[52] UK based EPCs – such as Wood Plc, a flagship UK EPC which operates in over 60 countries and has been involved in a third of the world's CCUS projects, and Subsea7, a global leader in offshore projects and services – are well positioned to secure this opportunity at home and abroad, along with companies with significant UK operations like Worley and Bechtel.

BP is leading the East Coast Cluster and is a major partner in the Northern Endurance Partnership. BP is also providing operator services for NZT Power and is involved in H2 Teesside, both of which were selected among Track-1 Capture Projects to proceed to negotiations for government funding support with DESNZ.

ENI is the lead company in the consortium delivering the HyNet North West project. It has also launched the Bacton Thames Net Zero initiative in the southern North Sea of the United Kingdom, which they plan to develop as a CCUS project to contribute to the decarbonisation of the Bacton area and the Thames estuary.

Equinor is the leading commercial CCS operator in Europe, with over 25 years of experience. In the UK, it is a partner in the Northern Endurance Partnership and Net Zero Teesside. It is also a partner in the Northern Lights Project based in Norway.

Harbour Energy, one of the world's largest independent oil companies, is now a leading developer of CO2 transportation and storage systems, with T&S projects in the UK, Germany, Norway, Denmark and the Netherlands.

Progressive Energy is another key developer focused on low-carbon energy projects, including hydrogen production and CCS technologies. Developers are essential for utilising UK expertise to advance the energy transition and secure the nation's position in the global CCUS market.

[49] DESNZ (2024), https://www.gov.uk/government/news/government-reignites-industrial-heartlands-10-days-out-from-the-international-investment-summit
[50] NZT (2025) https://www.netzeroteesside.co.uk/project/#:~:text=NZT%20Power%2C%20a%20joint%20venture,than%201%20million%20UK%20homes.
[51] DESNZ (2019), https://www.gov.uk/government/publications/energy-innovation-needs-assessments
[52] CCS Association (2021), 'Supply Chain Excellence for CCUS', https://www.ccsassociation.org/all-news/ccsa-news/ccus-supply-chain-report-showcases-major-uk-opportunity/

Storegga has projects in development in the UK, Norway and the USA, and is a leading developer in CO2 transportation and storage systems, including a T&S project in the north-east of Scotland.

Offshore Energies UK estimate that the UK CCUS sector could be worth £100 billion to local manufacturing employers by 2050,[53] including in areas where the UK already holds a comparative advantage, for example measuring, monitoring and verification equipment and CCUS packages. There is potential for £4-5 billion in GVA from UK CCUS exports by 2050,[54] and UK technology companies such as Carbon Clean are already operating on a global scale, having been selected as the technology provider for Abu Dhabi National Oil Company and with significant interests in the Middle East and North America. Similarly, Baker Hughes are a major supplier of oil and gas and subsea equipment and are now deploying their industry-leading CCUS portfolio, including technologies for direct air capture, transport and storage, and monitoring, to support hydrogen and CCUS projects globally.

3.1.3 Hydrogen

Hydrogen forms an important part of our net zero ambitions, with a whole-system approach to developing a hydrogen economy, putting in place the policy and regulatory frameworks needed to support deployment and attract private investment across the full hydrogen value chain, driving economic growth across our industrial heartlands and beyond. This includes:

- Net Zero Hydrogen Fund providing up to £240 million capital support for deployment
- Hydrogen Production Business Model to ensure long-term revenue support
- Low Carbon Hydrogen Standard and plans for certification scheme to enable market access
- Plans to launch business models for the transport and storage of hydrogen to develop the necessary infrastructure for a thriving UK hydrogen economy.

In December 2024, we also confirmed our intention to introduce a hydrogen to power business model to support the deployment of hydrogen-fired power stations.

The first Hydrogen Allocation Round (HAR1) selected eleven major new hydrogen projects across the UK to be offered support. The proposed new projects are distributed widely, from the south-west of England to the Highlands of Scotland. The HAR1 projects are expected to deliver 125 MW of low carbon production capacity and will invest over £400 million up front over the next three years, in a major boost to the UK's green economy. Over £90 million from the Net Zero Hydrogen Fund has been allocated to support the construction of these projects, subject to contract signing.

Building on the success of HAR1, we launched Hydrogen Allocation Round 2 in December 2023. We are currently developing our approach to future Hydrogen Allocation Rounds, including Hydrogen Allocation Round 3.

Many of the job requirements created as the hydrogen economy develops will be highly transferrable from the oil and gas sector but with the potential need for some re-skilling given

[53] Offshore Energies UK (OEUK) (2024), 'Carbon Capture Utilisation and Storage (CCUS) Insight', https://oeuk.org.uk/product/carbon-capture-utilisation-and-storage-ccus-insight/
[54] Offshore Energies UK (OEUK) (2022), 'CCS Supply Chain Report 2022', https://oeuk.org.uk/product/ccs-supply-chain-report-2022/

the difference in safely managing hydrogen relative to hydrocarbons.[55] Jobs span a range of areas given hydrogen end use can include hydrogen vehicles (automotive sector), hydrogen to power (power sector), and hydrogen in industry (relevant industrial sector). Employers are already highlighting engineering roles across construction, maintenance, design, chemicals, and electricals as well as regulatory and process safety experts as being in demand.[56]

3.1.4 Cross-cutting

More broadly, we are carrying out a series of cross-cutting activities across government to drive investment and growth in Britain's clean energy industries, including our two flagship institutions:

- In July 2024, we announced the foundation of Great British Energy. The company will create jobs and build supply chains across the UK. In recognition of Scotland's leading role in the UK's clean energy revolution, Great British Energy will be headquartered and run from Aberdeen. Already, Great British Energy has entered a major partnership with The Crown Estate, estimated to help bring to market up to 20-30GW of new offshore wind capacity for development by 2030.[57]
- In October 2024, the Chancellor announced plans for the National Wealth Fund to mobilise billions of pounds of investment in the UK's world-leading clean energy and growth industries and support the delivery of the government's new industrial strategy.[58]

3.1.5 Investment in other high growth sectors

Clean energy industries are one of eight sectors which the government's forthcoming *Invest 2035* modern industrial strategy is focusing on. These sectors offer the highest growth opportunity for the wider economy and for business. In addition to the clean energy industries, there are other related specialisms within energy with potential for growth, including decommissioning.

While we are keen to maximise the transition of workers to clean energy roles, there are broader opportunities across the economy for oil and gas workers to transition into other high-growth sectors. In some geographical areas and for some workers, it may be more appropriate or desirable to move into those sectors rather than clean energy.

The additional sectors include:

- advanced manufacturing
- creative industries
- defence
- digital and technologies
- financial services

[55] https://cogentskills.com/wp-content/uploads/2024/07/Hydrogen-Workforce-Assessment-Executive-Summaryfinal.pdf
[56] https://www.gov.uk/government/publications/clean-power-2030-action-plan-assessment-of-the-clean-energy-skills-challenge/assessment-of-the-clean-energy-skills-challenge
[57] DESNZ (2024), https://www.gov.uk/government/publications/introducing-great-british-energy/great-british-energy-founding-statement
[58] DESNZ (2024), https://www.gov.uk/government/publications/national-wealth-fund-mobilising-private-investment

- life sciences
- professional and business services

In the next stage of development of the industrial strategy, the government will prioritise subsectors within these industries which meet our objectives and where there is evidence that policy can address barriers to growth.

Ambitious and targeted sector plans will be designed in partnership with business, devolved governments, regions, experts, and other stakeholders, through bespoke arrangements tailored to each sector.

Jobs will be at the heart of our modern industrial strategy, supporting growth sectors to create high-quality, well-paid jobs across the country, many of which may benefit from expertise gained by a previous career in the oil and gas industry. There are parallels with the defence, engineering and advanced manufacturing industries, but also value to be added by those with transferable skills obtained in oil and gas management and support roles, for instance.

Some companies involved in the oil and gas supply chain already operate in activity streams across the wider energy sector, including nuclear. There is also significant activity in the decommissioning space across the full energy spectrum, including in planning activity for decommissioning in offshore wind. This expertise could be applied to these areas, creating potential for employment. For those employed in business services and support roles, there are a wide range of industries in which their transferable skills could be readily applied including the public sector.

Question 1a: What role can government play to ensure that local workers can benefit from the growth of these new energy sectors?

Question 1b: In addition to the investments in clean energy industries outlined in this section, are there any other areas you think should be targeted for investment?

Question 1c: What opportunities do you foresee for the oil and gas industry to invest into clean energy?

Question 1d: Which locations offer the best opportunities for investment in clean energy industries?

3.2 Jobs supported by planned investment in clean energy industries

The significant investment described above will support thousands of jobs. This section sets out the size of the opportunity for the oil and gas workforce to transition to clean energy sectors, as well as some of the barriers to doing so.

3.2.1 Skills and transferability of the oil and gas workforce

The skills and expertise of workers from the oil and gas sector are crucial to the success of our Clean Energy Mission. There is a huge opportunity for re-skilling and transferability of skills of the oil and gas workforce across the economy. Research by RGU suggests that “over 90% of

the UK's oil and gas workforce have medium to high skills transferability and are well positioned to work in adjacent energy sectors".[59]

Research by OEUK shows that the oil and gas workforce shares a range of transferable expertise across other offshore energy sectors including hydrogen, CCUS (transport & storage), and offshore wind. Oil and gas workers' expertise is applicable across a range of project stages. For instance, expertise of geoscience is applicable to site development, design, and construction stages in offshore wind as well as system development, operations, and post closure monitoring in CCUS. Engineering expertise is also transferable across a range of stages and sectors including structural engineering in offshore wind and CCUS, along with pipeline engineering in CCUS and hydrogen. Experience and expertise in health, safety & environment is applicable across all project stages in all three sectors.[60]

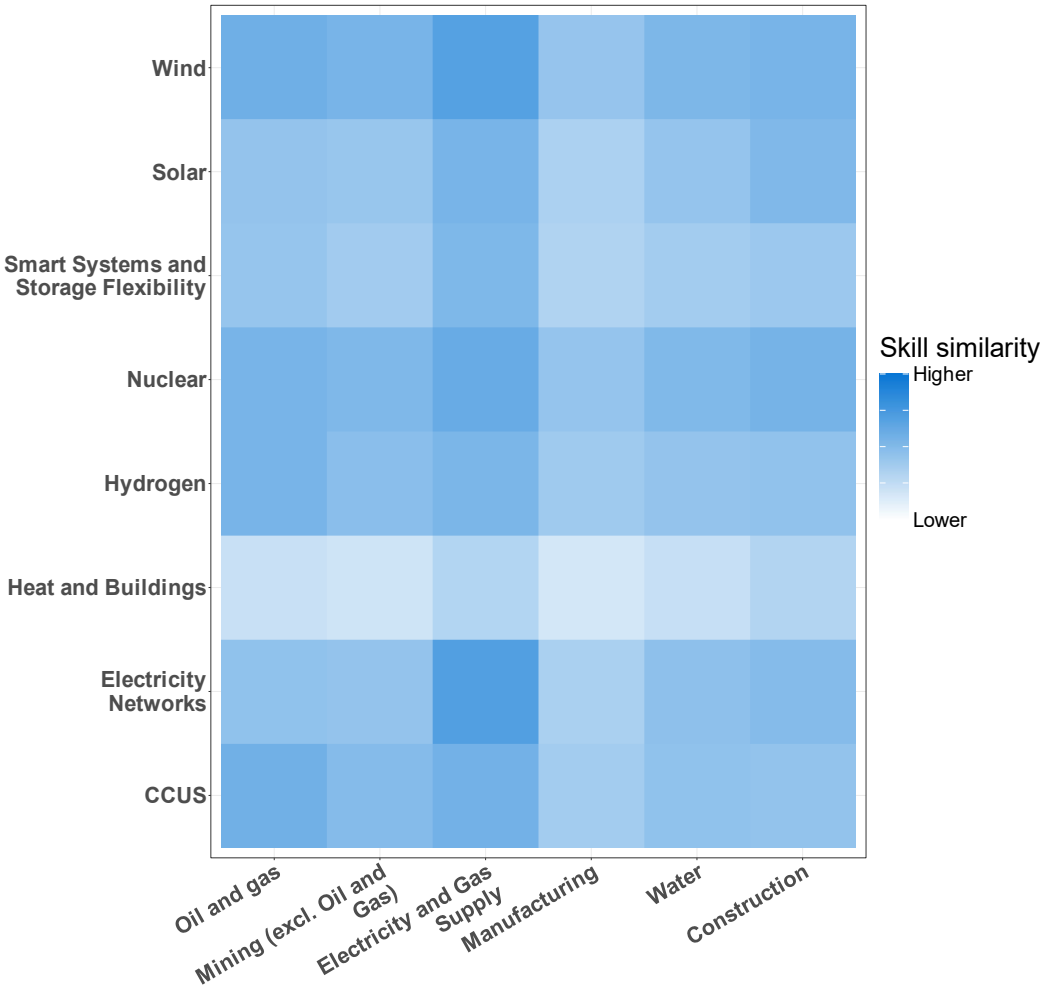
DESNZ analysis of online job adverts found similarities between the skills requirements within clean energy sectors and more carbon-intensive manufacturing and production-based sectors, including oil and gas. This suggests workers may be well placed to move between these sectors given more similarly demanded skills[61] (see Figure 6. Sectors with more skills in common have a higher similarity score indicated by darker blue shading – e.g. Electricity and Gas Supply and Electricity Networks have the highest similarity of skills among sectors examined, given its darkest shading).

For the oil and gas sector, the highest levels of skills similarity with clean energy sector job adverts are seen for CCUS, Hydrogen, Nuclear and Wind; there are also higher levels of skills similarity with Electricity Networks and Solar.

Understanding where transferable skills exist, and how they can be utilised across clean energy sectors, will help us manage the North Sea responsibly and support workers by helping them find good jobs and business prospects within their local communities. We welcome further evidence on existing transferable skills oil and gas workers possess that could help them transition into clean energy jobs.

[59] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', Page 8, https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023)
[60] Offshore Energies UK (OEUK) (2024), 'Economy & People Report', https://oeuk.org.uk/wp-content/uploads/woocommerce_uploads/2024/06/Economy-and-people-report-2024-OEUK-fthaik.pdf
[61] DESNZ experimental analysis of job adverts using Lightcast online job advertisement data (2024). The Clean Energy Job Adverts Analysis: Charts and Methodology document provides more detail on this analysis. NB. The experimental nature of the analysis means that not all relevant job adverts are captured. Clean energy job adverts are categorised through DESNZ experimental methodology. The 8 Clean Energy sectors are CCUS, Electricity Networks, Heat and Buildings, Hydrogen, Nuclear, Smart Systems and Storage Flexibility, Solar, and Wind.

Figure 6 Similarity of skills demanded in job adverts across several carbon-intensive and clean energy sectors



Note: Analysis of online job advert data, between 2021 and 2024.
'Similarity' refers to cosine similarity, calculated using skills and their prominence across SIC groupings and clean energy sectors. The following traditional sectors are considered: Construction (Section F), Water (Section E), Electricity and Gas Supply (Section D), Manufacturing (Section C), Mining excl. Oil and Gas (SIC 05,07,08,099), Oil and Gas (SIC 06,091).
There may be a small proportion of job adverts which fall into both groups being compared
DESNZ experimental analysis of Lightcast online job advertisement data, 2024

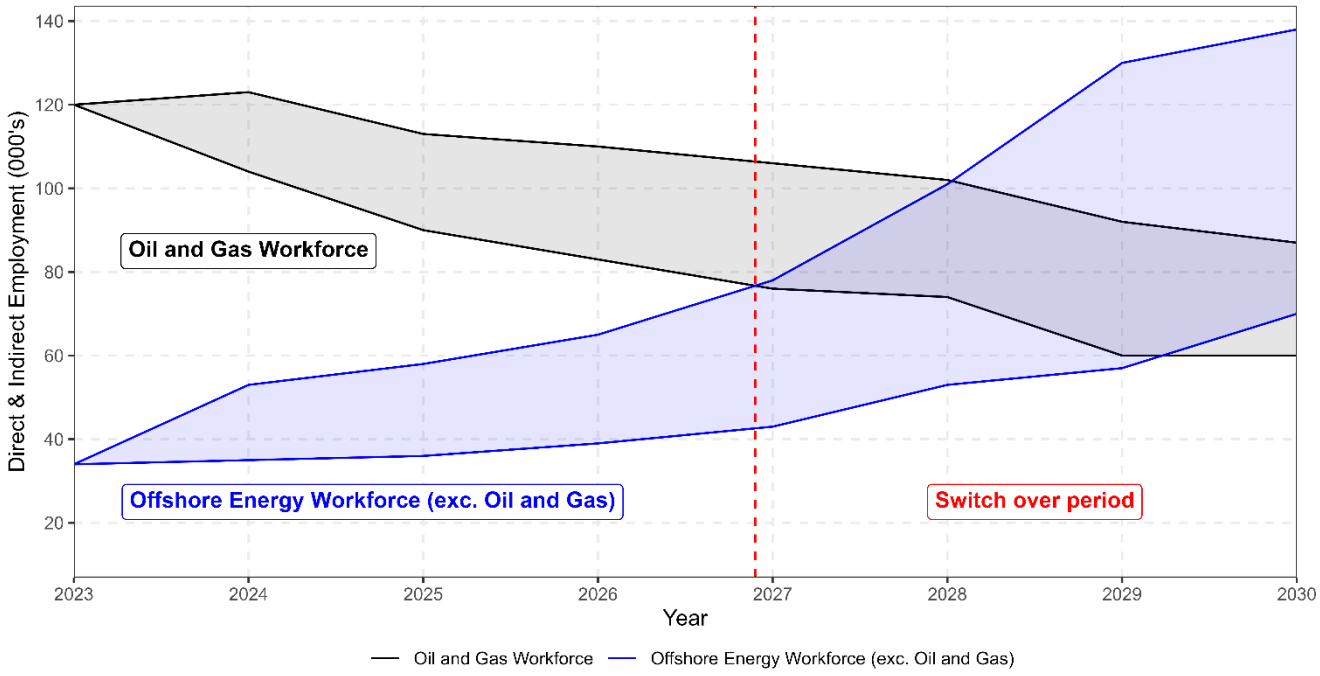
3.2.2 Availability of clean energy jobs

The clean energy workforce is rising strongly. The number of low carbon and renewable energy economy (LCREE) jobs grew more than five times faster than overall UK employment between 2020 and 2022.[62] In 2022, the ONS estimated that there were over 270,000 full time equivalents directly employed in the low carbon and renewable energy economy across the UK, a rise of 27% from 2020 to 2022.[63]

[62] Growth comparison between low carbon and renewable energy employment figures from Office for National Statistics LCREE (2022 and 2024) and total UK employment figures from the ONS business register and employment survey (2021 and 2023). More information on which businesses are considered part of the LCREE can be found here.
[63] Office for National Statistics (ONS) (2024), 'Low carbon and renewable energy economy, UK: 2022', https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2022

RGU analysis illustrates that there is an opportunity to ensure the decline in oil and gas workforce is matched or exceeded by jobs in adjacent industries.[64] Figure 7 and Table 1 below also show RGU's estimates of the future of the oil and gas workforce, compared to the offshore energy workforce (exc. oil and gas)[65], between 2023-2030. In particular, they demonstrate the projected increase in the offshore energy workforce (exc. oil and gas), within the switch over period, from 2027 to 2030. This emphasises the opportunity we have to ensure that current oil and gas workers are capitalising on these roles in the future.

Figure 74 Projections of oil and gas and offshore energy workforce (exc. oil and gas) figures (Robert Gordon University)[66]



[64] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU (2023),
[65] Offshore energy workforce (exc. Oil and Gas) includes the following sectors: Offshore Wind (Fixed and Floating), Carbon Processing, Transport and Storage, and Hydrogen.
[66] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', Page 20, Figure 15, https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf, RGU's modelling range covers a version of the future where there's no to minimal new O&G activity (e.g. minimal investments in Scenario 2 and 3), through to achieving our ambitions (Scenario 1).

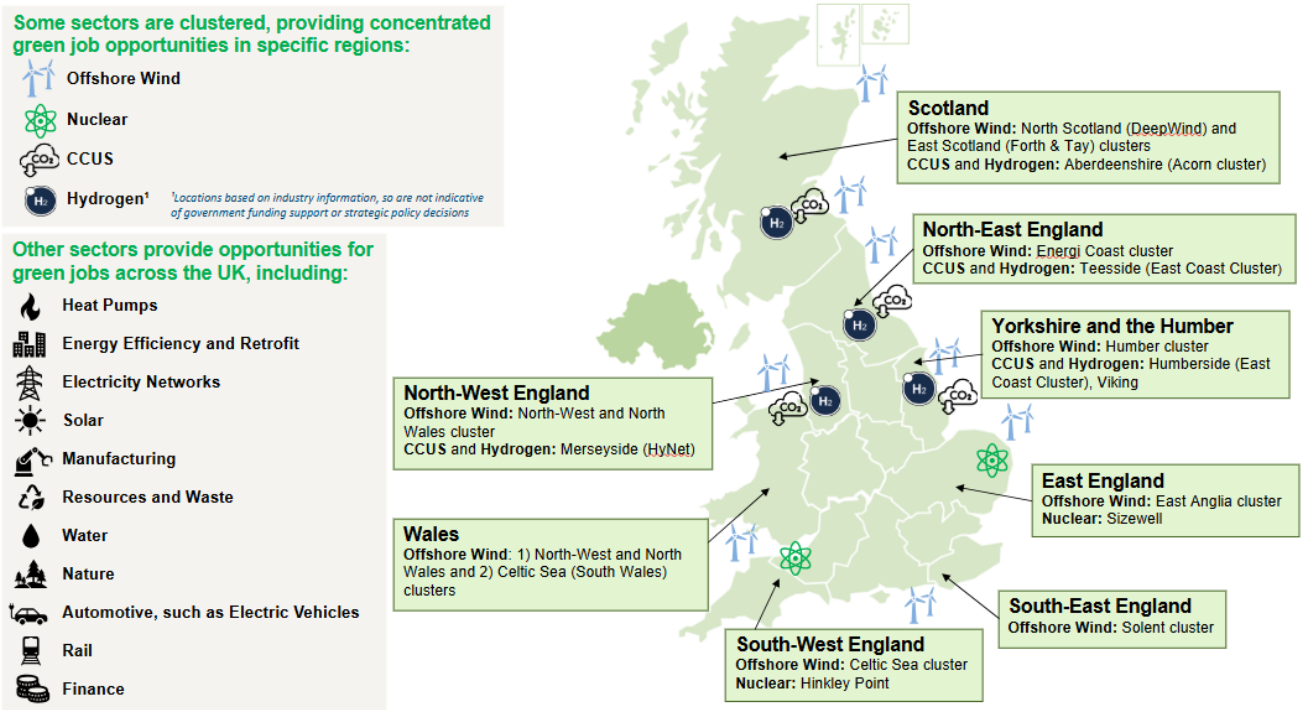
Table 1 Projected future oil & gas workforce and offshore energy workforce (exc. oil and gas) (direct and indirect jobs) based on several possible scenarios (000's, rounded to nearest thousand). Source: Data supplied by Robert Gordon University from their Powering up the Workforce report.

000's	2023	2024	2025	2026	2027	2028	2029	2030
Oil and Gas Workforce								
Upper Estimate	120	123	113	110	106	102	92	87
Lower Estimate	120	104	90	83	76	74	60	60
Offshore Energy Workforce (exc. Oil and gas)								
Upper Estimate	34	53	58	65	78	101	130	138
Lower Estimate	34	35	36	39	43	53	57	70

3.2.3 Regional availability of clean energy jobs

Jobs in some clean energy sectors are clustered in regions across the UK (see Figure 8 below), with many of these clusters based in former industrial heartlands.

Figure 8 Examples of clean energy sector clusters across UK[67]



[67] Collated industry examples (e.g. The DeepWind Cluster, https://www.offshorewindscotland.org.uk/deepwind-cluster/)

In 2023, around one in five of the working population in north-east Scotland are currently either directly or indirectly employed in the offshore energy industry.[68] This shows that the region is well positioned to contribute to the success of the energy transition.

While 87% of Scotland's offshore energy population still work in oil and gas,[69] there is a huge opportunity for Scotland to become a hub for skilled jobs in clean energy sectors, as reflected in our decision to headquarter Great British Energy in Aberdeen.

DESNZ analysis of job advertisement data shows that the share of clean energy jobs adverts increased sharply since 2020, with the clean energy advert share reaching roughly double the levels seen five years ago.[70] But it is clear that we need to move much further and faster if we are to ensure that clean energy jobs are delivered at scale.

Since 2021, more clean energy jobs were advertised in Scotland than any other region of the UK (~15% of all clean energy job adverts were advertised in Scotland) though clean energy job opportunities appear relatively more dispersed across the UK (see Figure 9).[71] Of these clean energy job adverts in Scotland, most were in the Electricity Networks (33%) and Wind (22%) sectors.[72] Figure 10 shows examples of existing green job opportunities in Scotland, localised in the north-east.[73] [74] [75] [76]

[68] Robert Gordon University (RGU) (2023), 'Powering up the Workforce', Page 6, https://www.rgueti.com/wp-content/uploads/2023/09/powering-up-the-workforce.pdf
[69] Robert Gordon University (RGU) (2024), 'Delivering Our Energy Future: Pathways to a 'just and fair' transition', Energy Transition Institute, Key Findings, Page 16, https://www.rgueti.com/wp-content/uploads/2024/05/63968-Delivering-Our-Energy-Future.pdf
[70] DESNZ experimental analysis of job adverts using Lightcast online job advertisement data (2024)
[71] DESNZ experimental analysis of job adverts using Lightcast online job advertisement data (2024). Oil and gas job adverts have been categorised as those that Lightcast have classified as belonging to the industry codes SIC 6 and SIC 91. Job adverts with no classified region have been excluded from the regional analysis
Left Figure - Percentage of total oil and gas job adverts by region, between 2021 and 2024
Right Figure - Percentage of total clean energy job adverts by region, between 2021 and 2024
[72] Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge: Clean energy job adverts analysis (2024), https://www.gov.uk/government/publications/clean-power-2030-action-plan-assessment-of-the-clean-energy-skills-challenge
[73] Offshore Wind Scotland, 'The DeepWind Cluster', https://www.offshorewindscotland.org.uk/deepwind-cluster/#:~:text=This%20now%20encompasses%2025%20ports,70%25%20of%20the%20Scottish%20coastline
[74] Deep Wind Offshore, https://www.deepwindoffshore.com/
[75] Forth & Tay Offshore, https://www.forthandtayoffshore.co.uk/
[76] The Acorn Project, https://www.theacornproject.uk/

Figure 9 Regional distribution of oil and gas (left) and clean energy (right) job adverts between 2021 and 2024

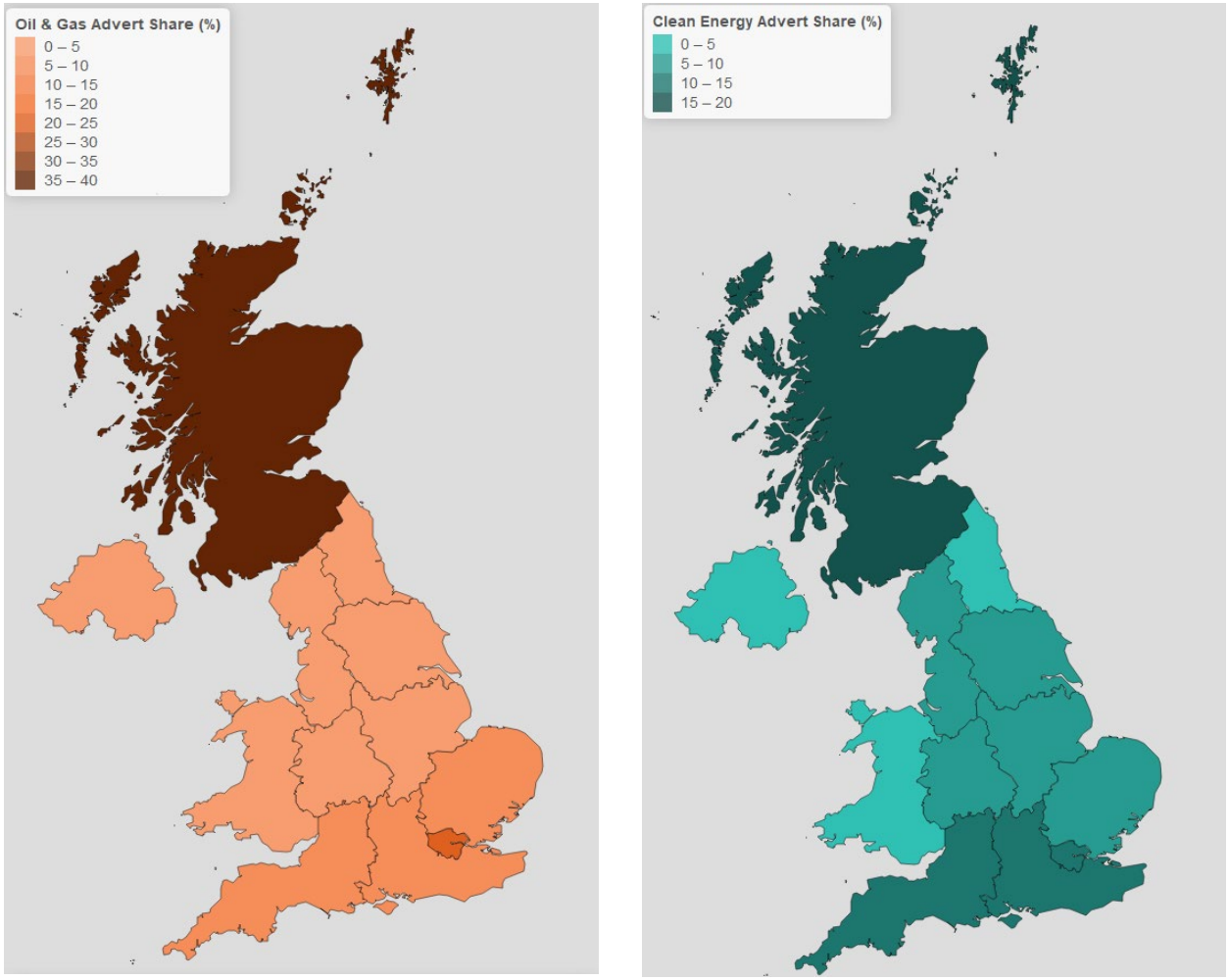
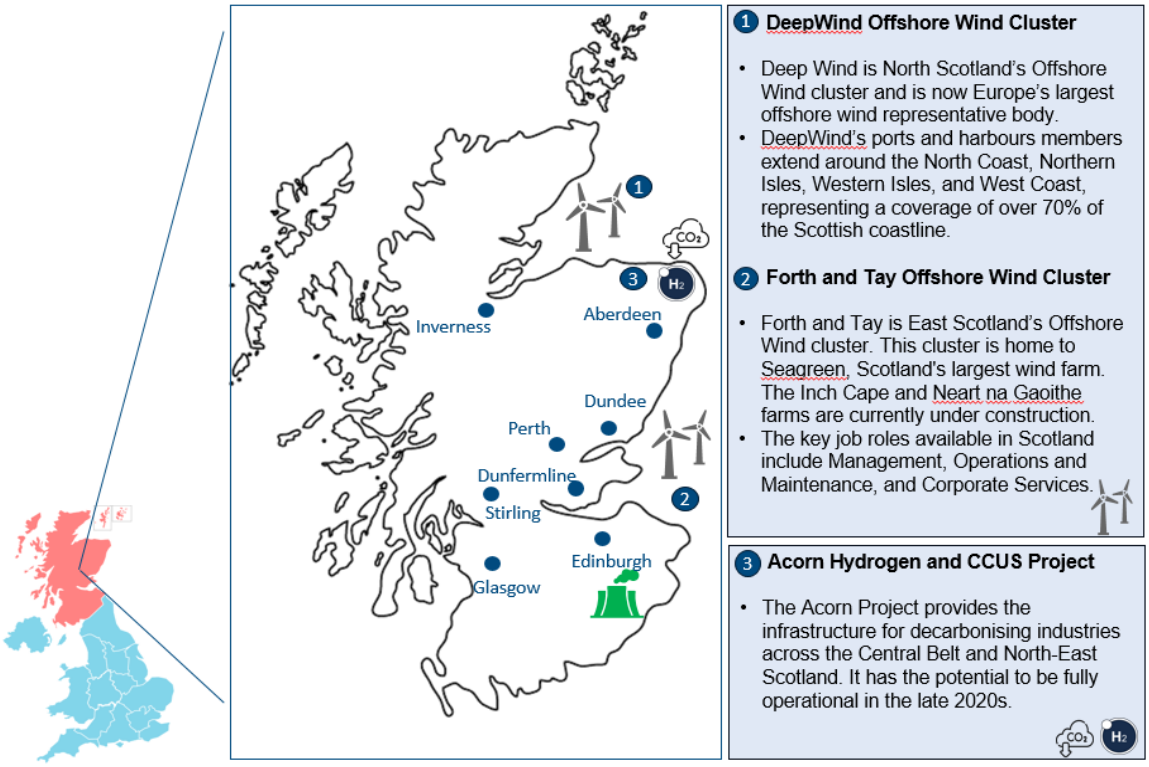


Figure 10 Examples of clean energy project clusters in Scotland



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?

Question 3a: What support is required for oil and gas workers to transition into low carbon sectors that align with the UK's longer-term environmental and economic ambitions, as proposed within this consultation? In your response, please consider the transition through different lenses – for example, by location (domestically and internationally) or by demographic.

Question 3b: How do you think we should approach measuring the transition of workers from the oil and gas sector to low-carbon industries? Do you have a view on what metrics we could be using to measure the transition of workers from the oil and gas sector to low carbon sectors?

Question 3c: How would you define a good work opportunity within the low-carbon economy? In your response, please consider fair remuneration, the role of trade unions and creating jobs that are inclusive and contracted with financial security.[77]

Question 3d: What, if any, other key occupations not already listed could oil and gas workers transition into that you think are important to supporting the transition to a low carbon economy?[78]

Question 3e: Do you think the UK has a sufficient skills base to underpin the transition? What role will the oil and gas sector play in the availability of critical skills?

3.3 Facilitating opportunities for oil and gas workers

To facilitate the ability of oil and gas workers to get clean energy jobs, the government has begun to implement interventions to:

- co-ordinate skills policy across government, industry and trade unions
- remove barriers to retraining e.g. develop tools to help with skills transferability of the workforce, and drive investment

This will ultimately support the successful delivery of a phased, responsible and prosperous transition for workers (including oil and gas workers) into clean energy sectors. In addition to driving investment for jobs (see Section 3.2), details on further interventions we are implementing can be found below.

[77] ILO definition of decent work: Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men. Source: https://www.ilo.org/topics/decent-work

[78] Occupations listed in this document which oil and gas workers could transition to: roles in clean energy industries (CCUS, hydrogen, nuclear, wind, solar) including technical engineers, electrical trades/electrical engineering, welding trades, mechanical trades/mechanical engineering, construction management, project management, other managerial roles; continued demand for drilling and subsurface jobs in O&G but also for hydrogen, CCS and geothermal activities; roles requiring geoscience expertise, geologists, structural engineering and/or pipeline engineering; roles requiring health and safety expertise and roles requiring expertise on environmental matters; roles in electricity networks and in electricity and gas supply; business services and support roles (including in the public sector); roles in the manufacture and installation of heat pumps.

3.3.1 The Office for Clean Energy Jobs

The new Office for Clean Energy Jobs ('the Office') focuses on developing a skilled workforce in core energy and net zero sectors. The Office is dedicated to ensuring that clean energy jobs are not only abundant, but also of high quality, focussing on fair pay, favourable terms, and good working conditions. The Office actively engages with key stakeholders, including trade unions and industry leaders, to keep job quality at the forefront of our efforts.

The Office works with an advisory group of Trade Unions to share and embed trade union perspectives on improving pay and conditions, developing skills and raising productivity throughout the development of policy, ensuring issues such as job quality, pay and terms and conditions remain at the forefront of delivery of the clean energy mission.

The Office will support workers from high carbon sectors to move to clean energy jobs by targeting skills interventions to reskill and upskill workers. We will be working closely with Skills England to support workers through the energy transition towards these sectors for oil and gas workers. As part of this engagement, the UK government is working closely with the Scottish Government.

This forms part of our wider agenda to ensure that decent work opportunities are available across the country.

3.3.2 Energy Skills Passport

The skills passport will enable workers to more easily transition between carbon-intensive sectors to clean energy sectors. This is essential for achieving net zero targets with industries in the region.

We have set out plans to help oil and gas workers move more easily into careers in the renewable sector, including offshore wind, with the use of a new 'skills passport,[79] announced on 17th October 2024. DESNZ, along with the Scottish Government, recognise the critical role that successfully delivering a skills passport for the Clean Energy Transition in Scotland will play in helping workers transition from carbon-intensive industries to clean energy sectors.

The initial funding of £3.7 million provided by the Scottish Government to OPITO over 2022-2023 and 2023-2024 helped kickstart this work to bring together key stakeholders across oil and gas and offshore wind sectors.[80]

The passport is an industry-led initiative overseen by Renewables UK and Offshore Energies UK and supported by the UK and Scottish Governments. It will align standards, recognise transferable skills and qualifications and map out career pathways for suitable roles. The public beta version of the Passport was launched for workers in the oil and gas industry in January 2025. This initial version aims to provide a solid foundation for either expansion into other occupations and sectors, or a platform by which other sectors and industries can develop their own passports.

3.3.3 Regional Skills Pilots

Building on Skills England research, a pilot scheme will support regional skills interventions to help the UK workforce transition from carbon-intensive sectors to clean energy sectors. This

[79] DESNZ and The Scottish Government (2024), Delivering a skills passport for the Clean Energy Transition, https://www.gov.uk/government/publications/delivering-a-skills-passport-for-the-clean-energy-transition
[80] Scottish Government (2024), 'Skills Passport: Joint letter from the Scottish and UK Government', https://www.gov.scot/publications/skills-passport-joint-letter-from-the-scottish-and-uk-government/

will be achieved by identifying and addressing skill gaps and challenges through targeted intervention trials on a regional basis. Interventions could include local skills and workforce mapping, career transition advisors and funding for direct training provisions.

DESNZ have announced the initial regions selected for this pilot are Aberdeen and Aberdeenshire, North and North-East Lincolnshire, Cheshire West and Chester, and Pembrokeshire. The learning from this pilot will inform any potential future interventions in this area.

3.3.4 Skills England

Skills England is a new arms-length body that will bring together key partners to meet the skills needs of the next decade. It will:

- Develop and refine authoritative analyses of national and local skills needs to better identify opportunities for helping individuals and businesses.
- Ensure that there is a comprehensive suite of apprenticeships, training and technical qualifications for individuals and employers to access that are aligned with skills needs.
- Collaborate with Combined Authorities and regional organisations, as well as other local and regional partners, to ensure that regional and national skills needs are met (at all levels – from essential skills to those delivered via higher education), in line with the forthcoming industrial strategy and other government priorities.
- Collaborate with the devolved governments, including effective sharing of data and insights, joint work to address UK skills system challenges, and cross-border forums for sector-specific work such as clean energy.

3.3.5 Growth and Skills Offer

Employers of all sizes across England can access funding to benefit from high-quality apprenticeship training in order to build the skilled workforces they need.

In England, the reformed levy funded growth and skills offer will deliver greater flexibility for learners and employers, aligned with our industrial strategy – creating routes into good, skilled jobs in growing industries, such as green skills.

As a first step, this will include shorter duration and foundation apprenticeships in targeted sectors – helping more people learn new high-quality skills at work, fuelling innovation in businesses across the country, and providing high-quality entry pathways for young people.

Skills England will play a crucial role in identifying which training should be available via the new Growth and Skills Levy.

3.3.6 UK and Scottish Government working together

The Scottish Government is committed to achieving clean energy through a phased, responsible and prosperous transition that promotes fairness and addresses inequality and injustice. In 2023, Skills Development Scotland conducted a Sectoral Skills Assessment of the Energy Sector[81] to gain insights into skills need and guide strategic skills investment.

[81] Skills Development Scotland (2023), 'Sectoral Skills Assessment in Energy', https://www.skillsdevelopmentscotland.co.uk/media/2lyfqsgk/sectoral-skills-assessment-energy.pdf

To support this transition, the Scottish Government published their Green Industrial Strategy[82] in September 2024, which focuses resources on opportunities where Scotland is likely to have a competitive advantage in the net zero economy, including:

- Maximising Scotland's wind economy
- Developing a self-sustaining CCUS sector.
- Supporting green economy professional and financial services, with global reach.
- Growing Scotland's hydrogen sector.
- Establishing Scotland as a competitive centre for the clean Energy Intensives Industries of the future.

To create the agile skills system that the green economy demands, the Strategy outlines that Scottish Government will:

- **Ensure the education system is responsive to Scotland's green economic priorities**. For example, they have committed to developing a national approach to skills planning which will help develop a better understanding of skills needs at the national level, including skills for the net zero transition, and how to better address them. This is linked to the ongoing Reform Programme for post-school education and skills[83] and will be complemented by strengthened regional approaches to skills planning that reflect current and future job opportunities, housing provision and other economic determinants within different areas of Scotland.
- **Raise the profile of green job opportunities and support people to re-train to take on those opportunities**. For example, they have committed to developing a clearer, coherent careers offer for learners and build clearer ways for employers to be involved in shaping those pathways to enable a more effective lifelong service. This will be key for young people at school who are making course choices that will affect their future careers, as well as people mid-career who are looking to re-skill to take advantage of new growth opportunities.
- **Enhance the transferability of skills**, through the Just Transition Fund and other funding (e.g. Skills Passport and regional upskilling programmes such as the National Energy Skills Accelerator in the north-east).
- **Encourage and support employers in opportunity areas to invest in training**. For example, they will further develop the apprenticeship model and continue collaboration between education and skills systems and employers.
- **Expand Scotland's Migration Service**[84] to provide more support for users, including employers and investors in green industries. The service will provide information and advice to help employers and investors navigate the UK's immigration system to help meet their skills needs.

In October 2024, the UK and Scottish Governments signed a vision statement committing to explore opportunities for Great British Energy to partner with Scottish public bodies, as well as

[82] Scottish Government (2024), 'Green Industrial Strategy', https://www.gov.scot/publications/green-industrial-strategy/
[83] Scottish Government (2023), 'Post-school education, research and skills', https://www.gov.scot/publications/post-school-education-research-skills-purpose-principles/
[84] Move to Scotland, 'Scotland's Migration Service', https://www.scotland.org/live-in-scotland/migration-service

the Scottish Government's Community and Renewable Energy Scheme (CARES), to increase investment in the clean energy supply chain in Scotland, and support community and local energy.

The Green Industrial Strategy forms a key part of Scotland's wider National Strategy for Economic Transformation and links to their draft Just Transition Plans,[85] demonstrating the vast amount of work being undertaken to build a fair, green and growing economy in Scotland.

3.3.7 Freeport Skills Funding

The Inverness & Cromarty Firth Green Freeport has introduced a Skills & Innovation Fund to develop a skilled workforce for the green energy sector in the region.

The Freeports programme aims are to create high-quality, long-term jobs in areas that have historically missed out and empower councils to invest in things like skills programmes. The Office will engage with the Ministry of Housing, Communities and Local Government (MHCLG) to explore how Freeports can further support skills and workforce development.

3.3.8 Employability System Reforms

The Get Britain Working White Paper, led by the Department for Work and Pensions (DWP), Department for Education (DfE) and HMT, sets out DWP plans to transform services to create a new jobs and careers service, integrating employment support and careers advice, opening up access and providing comprehensive, tailored support to everyone including, career-changers, and those needing to reskill. DESNZ, DWP and DfE will work together on how the specific reforms mentioned within the White Paper will be implemented to support delivery of the workforce needed for Clean Power 2030.

3.3.9 Supporting communities to transition

We are conscious of the support that local communities will need through the transition. The Aberdeen Energy Transition Zone (ETZ) is an example of where UK and Scottish Government funding has been used to fund activities, which aim to support the regeneration of an area of South Aberdeen, adjacent to the newly built Aberdeen South Harbour. Currently UK Government funding is being used here to support the construction of a new Energy Incubator and Scale Up Hub; Energy Works and a new Energy Transition Skills Hub to help provide the opportunities and skills for people in the local area to move into green jobs.

The government is confident that Great British Energy will crowd-in private investment to support Aberdeen's local economy and ensure the city thrives as Scotland's clean energy capital. Aberdeen will benefit from new jobs in the economy created by Great British Energy's investment in renewable energy projects, and within the company itself, as a significant proportion of Great British Energy's staff will be employed at its headquarters in the city.

Locating Great British Energy in Aberdeen has already given confidence to the private sector to invest in developing Scottish skills, evidenced by Sarens PSG's announcement of its Centre of Excellence in Aberdeen, which the company attributed to the company's Headquarters in the Granite City.

[85] Scottish Government (2023), 'Draft Energy Strategy and Just Transition Plan', https://www.gov.scot/publications/draft-energy-strategy-transition-plan/

We would welcome evidence on successful transitions for communities and/or additional suggestions on how we can further support local communities throughout this transition towards clean energy sectors.

3.3.10 International

We are keen to go further and learn from best practice on improving portability of skills and/or delivering a phased, responsible and prosperous transition.

It is important for all countries at all levels of development to maximise the social and economic opportunities of a low carbon transition, while minimising and carefully managing any challenges for all economic sectors. The UK is committed to learning from others as they develop their own domestic plans and transition dialogues, through knowledge and best practice sharing. We will work internationally to increase climate ambition and learn from other country-led economic transitions.

Question 4a: How can government and industry develop the skills passport into a meaningful and effective mechanism for workers to transition from oil and gas into other industries? What is the correct role for industry and government to make this happen?

Question 4b: What can we do to further support specific local communities that are heavily reliant on oil and gas through the transition?

Question 4c: Are you aware of any examples of successful collaborations between regions or sectors that could serve as a model for facilitating worker transitions?

3.4 Other challenges to moving oil and gas workers across to clean energy sectors

So far in this section, we have illustrated the size of the opportunity available to oil and gas workers and the attributes which make them well-suited for transfer to clean energy sectors. However, as with any significant change, there remain some challenges which we need to consider. This subsection explores those challenges and seeks further evidence so that we are better able to manage them. Those areas include:

- Workers' desire to move (which may be affected by differences in e.g. pay, geography, terms and conditions, or shift patterns, between current and potential future jobs).
- Employers' incentive to hire oil and gas workers (e.g. policy certainty, retraining).
- Awareness of opportunities for various demographics (e.g. aging workforce, diversity).

3.4.1 Pay and trade unions

Pay is a key consideration for the selection of any job, and is affected by several criteria (e.g. skills, location, occupation). There is limited research on the comparison in pay for oil and gas jobs compared to other clean energy jobs or sectors and available research on the topic shows

mixed conclusions.[86] [87] [88] We would welcome evidence on this issue from respondents (e.g. any information on pay, terms and conditions, contract types, job security, and any other job benefits).

This government believes unions have a central role to play in future clean energy industries, as they have in oil and gas. We welcome recent decisions by, for example, EDF Renewables, to sign recognition agreements with major trade unions. Unite (one of Scotland's leading trade unions for the oil and gas industry) has also recently signed a major new recognition deal with the offshore operator Repsol Resources UK, which covers roughly 350 workers and various jobs including supervisors, control room operators, electrical and production technicians, and process control specialists.[89] We are clear that the voice of trade unions and workers must be at the heart of these new industries.

It is also important that unions are at the heart of transition planning.

We will ensure unions are part of key discussions on safety, policy and ensuring there is an orderly and prosperous transition. We would welcome evidence and data from respondents on rates of trade union membership and collective bargaining coverage in oil and gas jobs compared to renewable energy jobs and how to embed trade unions at the heart of the new clean energy industries of the future.

3.4.2 Geography

We want to make sure that wherever possible, new jobs – whether in clean energy or high-growth sectors – are created in those areas which are particularly reliant on oil and gas jobs. This is in recognition not just of the need for jobs, but the need to support wider communities that have grown up in specific locations.

For oil and gas workers to take advantage of these opportunities, there needs to be join-up between existing training providers, local authorities and industry. For example, in England, Local Skills Improvement Plans, which identify local skills challenges and bring all relevant stakeholders together to overcome them, will play a role, alongside the newly established Skills England. Skills policy is a devolved issue, where different policy levers will exist in different regions. We will work closely with the devolved governments, particularly in Scotland, throughout this transition.

3.4.3 Policy certainty

Industry leaders and key stakeholders have stressed the need for long term policy and regulatory certainty to stimulate the demand for jobs. Employers need certainty over the pipeline of future clean energy projects to enable investment and workforce planning. When future demand in a sector is uncertain, employers find it difficult to assess the amount of workforce or capital investment required and may cause them to underprovide jobs and training opportunities. In nascent industries, such as hydrogen, evidence from the Hydrogen

[86] Onward (2021), 'Qualifying for the race to net zero: How to solve the net zero skills challenge. Onward', https://www.ukonward.com/wp-content/uploads/2021/07/Qualifying-for-the-race-to-net-zero-FINAL.pdf
[87] Valero et al. (2021), 'Are 'green' jobs good jobs? How lessons from the experience to-date can inform labour market transitions of the future. Grantham Research Institute on Climate Change and the Environment', https://www.lse.ac.uk/granthaminstitute/publication/are-green-jobs-good-jobs-how-lessons-from-the-experience-to-date-can-inform-labour-market-transitions-of-the-future/
[88] Robert Gordon University (RGU) Energy Transition Institute (2023), 'Delivering our Energy Future', https://www.rgueti.com/wp-content/uploads/2024/05/63968-Delivering-Our-Energy-Future.pdf
[89] Unite the Union (2023), 'Unite secures offshore recognition agreement with Repsol Resources', https://www.unitetheunion.org/news-events/news/2023/december/unite-secures-offshore-recognition-agreement-with-repsol-resources

Task and Finish Group highlighted how risk/uncertainty creates challenges for workforce policy and investment in skills development.[90] We need to ensure we have the right mixture of continued investment in oil and gas to manage existing fields for their lifespan, ensuring that our skilled oil and gas workers remain employed while projects to accelerate net zero come to fruition (see section 3.1).

3.4.4 Employer incentive to support retraining (skills, costs, provision)

Employers across the whole economy currently have limited incentive to retrain workers. For instance, the average employer spending on training has decreased by 27% in real terms since 2011.[91] From 2017 to 2022, employers providing staff training also fell from 66% to 60%.[92] There is also a constraint on training capacity, where employers have identified barriers within training and upskilling provisions (e.g. shortage of teaching resources and staff).[93] Uptake of training programmes is reliant on there being clear ongoing demand, a challenge which is more acute for sectors with a large SME presence. The government is undertaking work to incentivise employers – see section 3.3 for further details.

3.4.5 Aging workforce

Research by the Engineering Construction Industry Training Board showed that 37% of the engineering construction industry workforce engages in oil and gas activities. Of this, only 12% of the sector's workforce are under 30 years old, and 45% are over the age of 50.[94] In particular fields such as welding, it is forecast that up to 2,000 welders could leave the oil and gas workforce on an annual basis,[95] leaving a smaller pool of specialised workers available in the workforce.

3.4.6 Workforce diversity

Data on diversity in the existing oil and gas workforce is limited but there is some evidence to suggest that the oil and gas workforce is largely male-dominated. A report published by OEUK

[90] Hydrogen Skills Alliance, 'Green Jobs Delivery Group – Hydrogen Task and Finish Group, Findings and Recommendations', https://cogentskills.com/wp-content/uploads/2024/07/Hydrogen-Workforce-Assessment-Executive-Summaryfinal.pdf

[91] Institute for Fiscal Studies (IFS) (2024), How might Labour's proposal to broaden the Apprenticeship Levy into a 'Growth and Skills' Levy affect training rates, especially for young people?, https://ifs.org.uk/articles/labours-growth-and-skills-levy-would-give-more-flexibility-firms-employers-would-still#:~:text=A%20backdrop%20of%20falling%20training%20levels&text=Average%20employer%20spending%20on%20training,31%25%20over%20the%20same%20period.

[92] GOV.uk (2023), 'Employer Skills Survey', https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey

[93] Engineering Construction Industry Training Board (ECITB) (2024), 'Green Jobs and Carbon Capture and Storage report', https://www.ecitb.org.uk/news/new-report-on-green-jobs-and-carbon-capture-storage/

[94] Engineering Construction Industry Training Board (ECITB) (2021), 'Workforce Census 2021(Oil & Gas)', https://www.ecitb.org.uk/wp-content/uploads/2022/01/Census-Report-OG-Final.pdf NB. *Analysed 68 companies that employ 16,363 individuals for O&G activities across 531 locations. 32% of these workers were based offshore.*

[95] Green Jobs Delivery Group – CCS Task and Finish Group (2024), 'Findings and recommendations of the group', https://www.ecitb.org.uk/wp-content/uploads/2024/04/CCSTFG-CCS-Labour-Market-Assessment-Report-FINAL-27.02.pdf https://www.ecitb.org.uk/wp-content/uploads/2024/04/CCSTFG-CCS-Labour-Market-Assessment-Report-FINAL-27.02.pdf

in 2021 stated that women form around 25% of the UKCS workforce.[96] [97] [98] There is also a disproportionately low number of women and workers from ethnic minorities in the emerging clean energy sectors, hampering diversity of those workforces and limiting the pool that employers can draw from.[99] For instance, female underrepresentation has been commonly reported amongst sectors including civil nuclear (26%) and offshore wind (21%),[100] [101] as well as a lack of ethnic minority representation in clean energy jobs such as offshore wind (7%).[102] This trend is felt more broadly when considering educational choices that women opt for. For example, only 25% of the STEM workforce were female in 2023, and it is estimated that only 15.7% of engineering workforce were female in 2023.[103] [104]

Opportunities for people to get on, irrespective of background, are crucial, including to maximise the pool of people from which clean energy employers can recruit. We must also ensure employers are not engaging in discriminatory practices and that everyone has equal access to the high-skill, high-pay jobs that are on offer. Some progress has been made in fostering diversity and inclusion practices. For example, in 2021, OEUK developed toolkits to promote flexible, transparent and inclusive leadership.[105] [106] Following this, a 2023 OEUK Workforce D&I survey showed improved perceptions of leadership, culture and the impact of D&I perspectives.[107]

Question 5a: We would welcome any evidence you can share on any of the barriers mentioned in this section (pay, geography, policy uncertainty, employer incentive to support retraining, aging workforce).

[96] OEUK (2021). 'OEUK Diversity & Inclusion Survey Report – April 2021', https://oeuk.org.uk/product/diversity-and-inclusion-report/

[99] DESNZ (2024), Assessment of the Clean Energy Skills Challenge, Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge, https://www.gov.uk/government/publications/clean-power-2030-action-plan-assessment-of-the-clean-energy-skills-challenge

[99] DESNZ (2024), Assessment of the Clean Energy Skills Challenge, Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge, https://www.gov.uk/government/publications/clean-power-2030-action-plan-assessment-of-the-clean-energy-skills-challenge

[99] DESNZ (2024), Assessment of the Clean Energy Skills Challenge, Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge, https://www.gov.uk/government/publications/clean-power-2030-action-plan-assessment-of-the-clean-energy-skills-challenge

[100] Nuclear Skills Delivery Group (2023), 'Nuclear Workforce Assessment 2023', https://www.nssguk.com/nuclear-workforce-assessment/

[101] Offshore Wind Skills Intelligence Report (OWIC) (2023), 'Offshore Wind Skills Intelligence Report', https://www.owic.org.uk/media/gf5ddwxt/offshore-wind-skills-intelligence-report-2023.pdf

[102] Offshore Wind Skills Intelligence Report (OWIC) (2023), 'Offshore Wind Skills Intelligence Report', https://www.owic.org.uk/media/gf5ddwxt/offshore-wind-skills-intelligence-report-2023.pdf

[103] Gov.uk (2024), 'Supply of skills for jobs in science and technology', https://explore-education-statistics.service.gov.uk/find-statistics/supply-of-skills-for-jobs-in-science-and-technology/2023

[104] EngineeringUK (2024), 'Women in engineering and technology', https://www.engineeringuk.com/research-and-insights/our-research-reports/women-in-engineering-and-technology/

[105] Offshore Energies UK (OEUK) (2022), 'Workforce Insight Report', https://oeuk.org.uk/wp-content/uploads/2022/11/OEUK-Workforce-Insight-2022.pdf

[106] Offshore Energies UK (OEUK) (2022), 'Developing an inclusive and diverse leadership culture', https://oeuk.org.uk/product/oeuks-diversity-inclusion-leadership/, 'Diversity & Inclusion Recruitment: Flexible pathways for recruitment and promotion', https://oeuk.org.uk/product/diversity-inclusion-recruitment-flexible-pathways-for-recruitment-and-promotion/

[107] Offshore Energies UK (OEUK) (2023), 'Workforce Insights Report', https://oeuk.org.uk/?download_product=true&product_id=63561

Question 5b: What, if any, additional barriers not already mentioned in this section are you aware of?

Question 5c: What do you think could be done to improve the pay and standards of the clean energy sector and help ensure a proper role for trade unions?

Question 6: How can we enhance diversity within the sector? In your response, please consider the role of external organisations (such as employers and trade unions), and detail which group or persons this intervention would benefit.

3.5 Using our oil and gas supply chain expertise to build our energy future

3.5.1 Background to the oil and gas supply chain

The UK oil and gas supply chain is a UK industrial success story created over the past 60 years through the exploration and development of the UK's North Sea oil and gas reserves. It is a world-leading industrial supply chain with an unrivalled range of products, services and expertise. The oil and gas sector can play an important role in diversifying and strengthening our supply chains across the energy mix during the transition period.

Most of the employment related to the upstream sector sits in the supply chain. Annexed is more information on the subsectors in the supply chain.

Geographically, there are strong industrial clusters around the UK with decades of expertise. For example, north-east Scotland has specialisms in subsea engineering, brownfield oil and gas developments, research and development, corporate headquarters, offshore services, and decommissioning. north-east England has specialisms in engineering manufacturing services, subsea engineering and decommissioning. East Anglia has a service base and decommissioning expertise for the Southern North Sea. The south of England has expertise in greenfield engineering design, research and development, and corporate headquarters services.

Internationally, the UK's competitive strengths lie in offshore and subsea engineering as well as integrated services for mature fields and decommissioning.

3.5.2 How the oil and gas supply chain is changing

The oil and gas supply chain relies on long-term certainty of demand, effective engagement and risk-sharing with operators to facilitate investment. The downturns in the global oil price in 2015-2018 and during the pandemic resulted in reduced investment. This has impacted the oil and gas supply chain significantly by decreasing turnover, leading to redundancies and business closures.

Given the spend profile, a significant number of supply chain jobs are now focused on operations and maintenance activities rather than on capital investment related activities. NSTA had projected that £3.95 billion of capital expenditure and £7.70 billion of operational expenditure would be spent on oil and gas activities in the UKCS in 2024.[108]

Covering a 10-year period up to 2019, professional services company, EY, produced an annual report on the UK's oil field services. The most recent report shows that in 2019 the supply chain consisted of 1,141 companies and had a turnover of c.£28 billion of which 46%

[108] North Sea Transition Authority (NSTA) (2024), 'Medium-term projections', https://www.nstauthority.co.uk/media/bttcvga0/nsta-medium-term-projections-oct-2024.xlsx

was from export markets.[109] This is a £10 billion reduction in annual turnover over a period of five years.

Oil and gas production has been declining for several years. Without a plan for supporting the supply chain to transition, we have seen evidence of parts of it leaving the UKCS – increasing costs and posing risks to the transition. For example, we are seeing drilling rig capabilities move to other markets rather than remaining in the UK to support the transition. Without action, this could increase costs and pose additional risks for certain elements of the energy transition.[110]

Recent evidence on the size and scale of the oilfield services supply chain is hard to pin down. However, the Rystad Report commissioned by OEUK, projects that the domestic oil and gas focused supply chain could decrease by 4% Compound Annual Growth Rate (real).[111]

3.5.3 The potential of the supply chain to support clean energy sectors

The supply chain is widely understood to have the potential for transformation away from upstream oil and gas to focus on the delivery of new energy transition projects. According to Rystad, there is a high capability correlation between the UK oil and gas supply chain and the renewable energy sector. The supply chain targetable spend overlap is estimated to be 57% for floating offshore wind, 84% for CCS and 80% for hydrogen.[112]

This opportunity was the premise of the 2021 North Sea Transition Deal. The Aberdeen and Grampian Chamber of Commerce's 39th Energy Transition Survey shows that 64% of respondents are either actively or organically diversifying their operations from oil and gas (similar levels to last survey). Other energy related areas (including decommissioning, offshore wind, subsea engineering and geothermal) are expected to grow to represent 51% of business activities by 2030.[113]

3.5.4 Decommissioning supply chain opportunities

In recent years, the UK decommissioning sector has developed world-leading competitiveness and expertise, spending around £8 billion on projects between 2017 and 2022. The current overall cost estimate for UKCS decommissioning is approximately £40 billion, with UK suppliers in line to receive 70% of planned work in Supply Chain Action Plans lodged with the NSTA in 2022.[114]

This expertise and breadth of capacity means that the UK decommissioning supply chain is well-placed to deliver future UK and overseas opportunities and to use its expertise to support the growth of decommissioning services in clean energy sectors such as offshore wind. We know that by the 2040s, the UK fixed-bottom wind decommissioning market will become

[109] EY (2021), 'UK Energy Services overview', Page 12, Page 14.
[110] Offshore Energies UK OEUK (2024), 'Rystad Energy's energy supply chain report shows potential prize for the UK', https://oeuk.org.uk/rystad-energys-energy-supply-chain-report-shows-potential-prize-for-the-uk/
[111] Offshore Energies UK OEUK (2024), 'UK O&G supply chain opportunities in the energy transition', Page 5, https://oeuk.org.uk/product/uk-og-supply-chain-opportunities-in-the-energy-transition/
[112] Offshore Energies UK OEUK (2024), 'Rystad Energy's energy supply chain report shows potential prize for the UK', https://oeuk.org.uk/rystad-energys-energy-supply-chain-report-shows-potential-prize-for-the-uk/
[113] Aberdeen and Grampian Chamber of Commerce (2024), 'Energy Transition Survey 39', Page 13, https://www.agcc.co.uk/economic-development/energy-transition
[114] North Sea Transition Authority (NSTA) (2023), 'UKCS Decommissioning Cost and Performance Report', Page 3, https://www.nstauthority.co.uk/media/lnmhqq2l/decom-cost-report-2023-final-accessible-1.pdf

substantial, as units start to reach the end of their typical 25-year lifespan in greater numbers.[115]

In November 2024, the NSTA announced the launch of the Tree and Wellhead Information for Subsea Tooling (TWIST)[116] database which provides access to sought-after data on the makeup of well infrastructure, helping companies plan their decommissioning projects better and quickly locate potentially hard-to-find tools.

This is expected to accelerate the pace of decommissioning and unlock investment by giving suppliers better technical information about well architecture and the availability and accessibility of tools. The database also offers greater potential for collaboration, since operators with similar wells can work in tandem to plug and abandon wells together, driving efficiencies.

3.5.5 Supporting the supply chain to reach its potential

We would welcome views from respondents on how we can support the supply chain to take advantage of the opportunities of the transition. Several reports and/or initiatives have supported the supply chain to reach its potential in the broader energy sector in recent years.

- **The 2024 Supply Chain Champion report** was written by Sian Lloyd Rees, the inaugural Supply Chain Champion, appointed by OEUK as part of the industry commitments from the North Sea Transition Deal. The report made several recommendations around funding and the role government bodies should play in the promotion of the supply chain.
- **Voluntary commitment to UK content in the North Sea Transition Deal (NSTD)** – Under the NSTD, industry committed to set a target of 50% UK content, including capital investment, over the lifecycle of all related new energy projects, as well as oil and gas decommissioning, and 30% for locally provided technology.[117] The North Sea Transition Authority has been tasked by the Deal Delivery Group to use their existing Supply Chain Action Plans and their Energy Pathfinder tool (providing real-time visibility of activity for new field developments, decommissioning and projects to support the energy transition) to manage and monitor this process on behalf of the UK supply chain.

Question 7a: Which parts of the oil and gas industry supply chain do you think will be most affected by the transition, and what impacts will it have on the workers within those businesses?

Question 7b: What potential barriers exist for current oil and gas supply chains to transition to alternative sectors?

Question 7c: What additional measures can we take to support these supply chains during the transition?

[115] Offshore Energies UK OEUK (2024), 'UK O&G supply chain opportunities in the energy transition', Page 78, https://oeuk.org.uk/product/uk-og-supply-chain-opportunities-in-the-energy-transition/

[116] North Sea Transition Authority (NSTA) (2024), 'Right tool, right place database aims to make decommissioning cheaper and easier', https://www.nstauthority.co.uk/news-publications/right-tool-right-place-database-aims-to-make-decommissioning-cheaper-and-easier/

[117] Department for Business, Energy & Industrial Strategy (2021), 'North Sea Transition Deal', Page 11 https://www.gov.uk/government/publications/north-sea-transition-deal

Question 7d: What are the current existing key strengths in the UK supply chains for these sectors?

Question 7e: Do you think that UK supply chain companies will be competitive in accessing growing clean energy sectors in the North Sea? What role can government play in supporting them?

Question 7f: What key export opportunities do you anticipate will be open to the UK supply chain, as a result of the development of clean energy sectors in the North Sea?

Question 7g: Where do you see the main opportunities in a) offshore wind b) floating offshore wind, c) CCUS (T&S) d) hydrogen e) decommissioning for the oil and gas supply chain?

3.6 Supporting our clean energy future through international engagement in the North Seas

Working with our regional partners in the North Seas Energy Cooperation (NSEC), the EU and industry is vital to maximise the immense renewable energy potential of the North Seas, as part of our joint ambition to make the North Seas the green power plant of Europe.

Our energy systems are linked through shared infrastructure in the North Seas, including nine electricity interconnectors (Northern Ireland, EU & Norway) and three gas interconnectors (Belgium, Netherlands, Northern Ireland/Ireland), enhancing our energy security.

The UK collaborates with NSEC in areas such as hybrid and joint projects, maritime spatial planning, grid planning, support frameworks and finance, and renewable hydrogen, supply chains, and supporting jobs; through expert dialogue, information exchange, and sharing of best practice.

In April 2023 at the North Sea Summit, North Seas countries, including the UK, signed the Ostend Declaration, setting out a bold vision of what cooperation in the North Seas could achieve.[118] It commits us to delivering cross-border projects, with ambitious targets for offshore wind and bilateral/multilateral projects, including the shared target of 300GW of offshore wind by 2050, of which 120GW will be in UK waters.

Ofgem has recently issued a positive decision on the first two Offshore Hybrid Assets (OHAs), combining electricity interconnectors and offshore wind farms. Nautilus is a proposed 1.4GW OHA between UK and Belgium, and LionLink is a proposed 1.8GW OHA between the UK and the Netherlands, which has no wind connected in the UK but is connected to 2GW of Dutch offshore wind.[119]

Energy UK has estimated that, given the potential for OHAs to reduce the cost of offshore development, unlocking OHAs through greater UK-EU cooperation could take €13 billion (£11 billion) off the cost of meeting the Ostend Declaration target of 300GW of offshore wind capacity installed by 2050.[120]

[118] DESNZ (2023), https://www.gov.uk/government/publications/developing-the-north-seas-as-a-green-power-plant-of-europe-north-sea-summit-declarations
[119] OFGEM (2024) https://www.ofgem.gov.uk/decision/initial-project-assessment-offshore-hybrid-asset-pilot-projects-decision
[120] EnergyUK (2023), https://www.energy-uk.org.uk/publications/the-power-of-partnership/

We are working with the EU to develop more efficient UK-EU electricity trading arrangements which have the potential to deliver annual benefits to the UK and EU of up to €95 million (£77 million) by 2025 and reduce carbon emissions.[121]

[121] EU and UK TSOs MRLVC group (2021), 'Cost Benefit Analysis of Multi-Region Loose Volume Coupling – Analytical results for publication', https://consultations.entsoe.eu/markets/cost-benefit-analysis-of-multi-region-loose-volume/consult_view/, Page 39 & 55.

4 A globally standard-setting approach to oil and gas production

In the first three sections, we set out our vision for the future North Sea, the need for action and the opportunity available if we get this right. This section sets out proposals for the delivery of the government's commitment not to issue new licences to explore new fields while responsibly managing our upstream oil and gas sector. It also looks at amending the regulatory regime for oil and gas production to take advantage of the clean energy, growth and economic opportunities that exist in the North Sea, including on decommissioning activity.

4.1 Licensing

4.1.1 Managing existing fields for their lifespan

The government is committed to partnering with business and workers to manage our existing fields for the entirety of their lifespan. Our fiscal and regulatory regime will be key to ensuring that industry continues to invest and play an important role in our energy landscape. Our approach will continue to be subject to robust oversight by our expert regulators.

Domestic oil and gas production will continue to fall in line with the naturally-declining basin. The number of offshore installations will reduce from around 290 today[122] to a much smaller number, with assets being decommissioned or repurposed at the end of their producing life. For those assets which will be with us for decades to come, we need to continue the progress made to date on reducing emissions from oil and gas production, as set out in the NSTA's OGA Plan – for example, by electrification.

The government also recognises that domestic oil and gas production facilities are highly interdependent, particularly offshore. They rely on infrastructure that is owned and managed by partnerships between several different companies. In many cases, oil and gas will flow from an offshore reservoir through several different infrastructure components before reaching shore. Interim production facilities may blend, split, or in other ways process the products from different fields, ensuring products are of a sufficient quality and specification for subsequent transmission through a network of subsea pipelines. Further infrastructure then receives and performs additional processing onshore.

As the basin continues to mature and oil and gas production levels naturally decline, it will become increasingly important to consider the interconnected nature of production activities and the risks and impacts posed by this interconnected infrastructure. There may also be links between production activities and projects using clean technologies, where some infrastructure may be shared or where re-purposing of assets is appropriate.

The government wants to gather views on what we should consider when further developing our vision for the holistic management of the UKCS. That vision needs to consider both the interdependencies between existing fields and the opportunities for sectors to work together as the basin evolves over time. For example, synergies between offshore technologies could result in new types of strategic 'hubs', where oil and gas, hydrogen, CCUS and renewable technologies share infrastructure, or where assets are repurposed when they are no longer needed for oil and gas. Some 'hubs' could share decarbonisation technologies as a first phase, such as through partnerships between wind farms and oil and gas assets that enables

[122] North Sea Transition Authority (NSTA), 'Asset stewardship', https://www.nstauthority.co.uk/what-we-do/asset-stewardship/

electrification of oil and gas production. Over time these could develop into more integrated energy hubs that combine multiple technologies, such as through the incorporation of hydrogen or CCUS projects that use repurposed pipelines or depleted fields. This would significantly reduce emissions from continued oil and gas production, while supporting the scale up of clean technologies.

We are keen to better understand stakeholders' views on the interconnected nature of the basin and the risks and opportunities this poses.

Question 8: How can we improve our understanding of the interconnected basin, including its opportunities and risks? Do you have any evidence you can share about this?

Question 9: How can we manage future oil and gas production from existing fields, in a way that accounts for the interdependencies across existing assets and supports an orderly transition across the basin? We would welcome examples of technical or commercial dependencies including timing-related considerations if relevant.

Question 10: How can decarbonisation projects or asset repurposing support an orderly transition of the basin, or vice versa? Please share any evidence to support your suggestions.

4.1.2 Offshore licensing

Licences are the first step in the development pathway for petroleum production activities, both onshore and offshore. They confer an exclusive right to the licensee to search for, bore and get hydrocarbon resources from a particular area ('block' or 'part block') for a defined period, subject to further consents for surveying, drilling, testing and for extracting and producing hydrocarbons.

In the United Kingdom, licences have been offered for application to industry largely through competitive licensing rounds, with a total of 33 offshore licence rounds held between 1964 and 2024. Offshore, there are currently around 400 Production Licences, with approximately three quarters of these enabling production and development activities, and the remainder in the exploration and appraisal phase.[123] The NSTA's policy since the 29th Round in 2017 has been to maintain the turnover of licences through regular relinquishments, allowing areas to be re-offered to industry if the previous incumbents have failed to progress them through appraisal and development in a timely manner.

While offshore licence rounds have consistently resulted in numerous awards, sometimes up to 100, fewer than 10% of recently issued licences have progressed to active production.[124] This limited conversion rate reflects the maturity of the basin and challenges in advancing from exploration to development, resulting in only a small portion of licensed blocks being actively developed. There are several 'checkpoints' in the project maturation process at which a decision may be made not to continue, with a wide variety of reasons including (but not limited to): technical grounds, funding being reallocated elsewhere and misalignment with joint-venture partners. A licence dropped by one licensee may still be attractive to another licensee later.

[123] Internal NSTA analysis of licence award and relinquishment data from offshore and onshore oil and gas licence rounds.
[124] Internal NSTA analysis of licence award and relinquishment data from recent offshore oil and gas licence rounds.

New licences awarded in the last decade have made only an incremental difference to overall oil and gas production.

Given the maturity of the basin, and the high proportion of future production projected to come from existing developments versus new developments and discoveries, further licensing in the North Sea would not reverse the basin's natural decline. Future exploration and production licences would not meaningfully increase UK production levels, nor would they change the UK's status as a net importer of oil and gas. The government has been clear that it would **not issue new licences to explore new fields.**

'New licence'

We consider a 'new licence' to encompass all future licence awards, issued via licensing rounds or out-of-round activities, that enable exploration and/or production activities to search and bore for and get petroleum resources.

This would include the issuing of future:

- Seaward Exploration Licences
- Seaward Production Licences (including 'Offshore Innovate Licenses')

It would not preclude the issuing of future:

- Carbon Storage Licences
- Gas Storage Licences
- Methane Drainage Licences

It would not preclude the granting of 'licence extensions' that extend the duration, term or phase applicable to previously awarded licences of any kind, nor the 'assignment' (transfer) of previously awarded licences or licence equity of any kind between parties. These are important activities which facilitate the maintenance of existing fields and support the government's commitments to not revoke existing licences, and to partner with business and workers to manage our existing fields for the entirety of their lifespan.

'New field'

We consider a 'new field' to encompass all offshore 'blocks' or 'part blocks' (areas) where there is not currently a licence assigned to support the exploration and/or production of petroleum resources. This would include all currently unlicensed 'blocks' (areas) for which licences have previously been awarded to support petroleum exploration and/or production activities, or for which licences have never before been offered.

It would not include any UKCS 'blocks' (areas) where there is a valid licence to search and bore for and get petroleum resources.

Practically, these definitions will prevent new licence awards for offshore UKCS areas to search and bore for and get petroleum resources, whilst simultaneously retaining licences to maintain production from existing developments and licenced projects. This position reflects the action government has committed to take through its manifesto commitment to not issue new licences to explore new fields, in line with the science on fossil fuels and our desire to show global leadership and seize the opportunities of the clean energy revolution.

The government also recognises there is a great deal of technical complexity regarding the range of offshore activities that are permitted under these licences (such as seismic surveys). It also notes the important role of iterative development activities such as 'tiebacks' and 'infill well' drilling to maintain production from existing fields, manage the interconnected nature of production activities between fields, operators and offshore areas and potentially to support strategic 'hubs' as described above (some of these iterative developments may be on fields that have been previously licensed). This consultation seeks to gather evidence and stakeholder views on the definitions set out above, and how we might ensure that our regulatory regime can support activity where it is needed to deliver the government's broader strategic priorities.

4.1.3 Onshore licensing

Onshore oil and gas policy is a devolved matter. This consultation addresses only English onshore oil and gas exploration and production policy.

We propose to treat onshore and offshore licensing in the same way and are therefore consulting on ending the issuing of new onshore licences for exploration and production. This will support consistency across the system and meet our commitment not to support new oil and gas licences for new fields.

There were 14 onshore licence rounds held up until 2014. Further licensing for onshore exploration and production activities would not halt the decline of the industry, nor meaningfully improve UK energy security. UK oil and gas production is primarily offshore, with onshore production in 2023 accounting for 4% of UK oil production, and 1% of UK gas production.[125] Employment levels and tax revenue from onshore production are correspondingly much lower.

Although onshore production is small compared to the UK's offshore industry, onshore production still contributes to the UK's domestic and international climate impacts. Onshore production can also be more disruptive, as it takes place closer to people's homes.

Ending new onshore licences will progress the government's commitment to ban hydraulic fracturing for shale gas extraction ('fracking'). Fracking is a specific type of onshore oil and gas extraction by unconventional means, involving pumping large volumes of fluid into shale rock at high pressures. Onshore licences, along with other consents and permissions, are a prerequisite for fracking to take place, and therefore the government's proposal to end new onshore licencing would also encompass new licences for the purpose of fracking.

For existing onshore licences, the effective moratorium against the approval of fracking consents ("Hydraulic Fracturing Consent") by the DESNZ Secretary of State will remain in place.

Question 11a: To what extent do you agree or disagree that this position on new licenses will support the UK to set a globally leading example in tackling climate change?

Question 11b: Is there anything else you think should be considered in the government's definition of i) licensing and ii) new fields? What would be the case for doing so, including consideration of the commercial and environmental impacts?

[125] Digest of UK Energy Statistics (DUKES) (2024), Table F.1, https://www.data.gov.uk/dataset/894d91a9-5d13-4220-b9a2-e124e6436304/digest-of-united-kingdom-energy-statistics-dukes

Question 11c: Aside from oil and gas, are there any other sectors you think would be affected by these proposals? If yes, how would they be affected?

Question 11d: Do you anticipate any situations where additional targeted interventions might be needed or beneficial to support the government's climate and North Sea objectives? If so, what criteria or mechanisms do you think should be used to determine whether such situations have arisen?

Question 12a: What, if any, impact do you think these policy considerations could have on businesses? Please consider if small and micro and/or medium-sized businesses would be disproportionately affected.

Question 12b: What, if any, impact do you think these policy considerations could have for individuals with protected characteristics? If there are negative impacts, what potential mitigations could be explored?

4.2 The future focus of the North Sea Transition Authority (NSTA)

The NSTA was created in 2015 to regulate the UKCS in line with a statutory principal objective of Maximising Economic Recovery from the UK Continental Shelf (known as MER UK). Since its foundation, the NSTA has developed an effective relationship with industry, leading to lower emissions, cleaner production and generating economic value for the country, including through reducing total decommissioning costs by £15 billion between 2017-2022[126], creating savings for the taxpayer due to the tax relief companies can claim against this expenditure. However, as we enter this crucial phase in the UKCS's transition towards a clean energy future, we need to take action to ensure the NSTA's role and functions are compatible with the delivery of this government's vision for the North Sea.

The NSTA's current role and functions grew out of the 2014 Wood Review.[127]

Wood Review

The global financial crisis of 2008-2009 heavily affected the overall UK economy, including the oil and gas sector. Oil and gas prices were falling, competition from international offshore regions was growing, and the basin was made up of many smaller and marginal fields. Production fell by 36% between 2010 and 2013[128].

To address this, Sir Ian Wood's 'Wood Review' was commissioned by the then-Secretary of State.

In February 2014, the Wood Review recommended a new strategy for MER UK. It also suggested creating a new regulator to oversee hydrocarbon recovery and industry collaboration. Following this, the OGA, now the NSTA, was established, at first as an Executive Agency on 1 April 2015, and a new statutory MER UK objective was introduced through the Infrastructure Act 2015. Following the enactment of the Energy Act 2016, the

[126] North Sea Transition Authority (2024), https://www.nstauthority.co.uk/regulatory-information/decommissioning-and-repurposing/cost-estimate.
[127] Sir Ian Wood (2014), 'UK Continental Shelf (UKSC) Maximising Recovery Review', https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/471452/UKCS_Maximising_Recovery_Review_FINAL_72pp_locked.pdf
[128] Digest of UK Energy Statistics (DUKES) (2024), Table 1.1.2. https://www.gov.uk/government/statistics/energy-chapter-1-digest-of-united-kingdom-energy-statistics-dukes. Production fall percentage in Wood review was 38%, this has been updated based on the latest DUKES data.

OGA became a government-owned company with full responsibility for a range of oil and gas functions, including licensing, with effect from 1 October 2016.

While the context of the Wood Review retains some relevance, there have been significant changes to the basin and beyond. For example:

- The NSTA's estimate for proven and probable oil and gas reserves has significantly declined (for example, from 5.6 billion barrel of oil equivalent (boe) at the end of 2016 to 3.3 billion boe at the end of 2023).[129]

- Decommissioning activity is likely to intensify, with more than half of the estimated £40 billion overall expenditure required for decommissioning needed in the next decade.[130] While significant progress has already been made to reduce overall decommissioning costs, careful management will be required to ensure that this intensification of decommissioning activity is carried out efficiently and cost-effectively so as to maximise its benefits and minimise its risks.

- The climate crisis is accelerating, and scientific evidence from the International Energy Agency[131] and the UN Environment Programme[132] signifies the unacceptably high risk that new fossil fuel exploration and production would lock-in global warming exceeding 1.5°C. Additionally, the Intergovernmental Panel on Climate Change has stated with high confidence that "Projected CO2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C."[133][134] This heightens the imperative to transition away from global fossil fuel production on the pathway to net zero.

- In 2019, the UK became the first major economy to establish a net zero target in law,[135] with other major economies following suit. Our renewables ambitions are therefore significantly more developed than most countries, with huge investment planned for the UKCS – all of which will help us to meet the UK's carbon budgets and reach our net zero ambitions.

- The CCUS and hydrogen industries have developed significantly in recent years and are expected to play an important role in the basin's future. The NSTA also regulates and influences the offshore hydrogen and carbon storage industries.

[129] North Sea Transition Authority (NSTA) (2023), 'UK Oil and Gas Reserves and Resources', Figure 5, https://www.nstauthority.co.uk/media/vtjkyqnf/uk-reserves-and-resources-report-as-at-end-2023.pdf.
[130] North Sea Transition Authority (NSTA) (2023), 'UKCS Decommissioning Cost and Performance Update', https://www.nstauthority.co.uk/media/ppvlelgd/ukcs-decom-cost-and-performance-update-01.pdf
[131] International Energy Agency (IEA) (2023), 'Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach, IEA, Paris' https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach
[132] Stockholm Environment Institute (SEI), Climate Analytics, E3G, IISD, and UNEP (2023), 'The Production Gap: Phasing down or phasing up? Top fossil fuel producers plan even more extraction despite climate promises', https://www.unep.org/resources/production-gap-report-2023
[133] IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001
[134] The term 'carbon budget' in this sentence does not represent the UK's legally binding carbon budgets.
[135] Climate Change Act (2008), https://www.legislation.gov.uk/ukpga/2008/27/part/1.

Given this change in context, we believe that the NSTA will need to take a different strategic approach to deliver our vision for the North Sea. We are therefore seeking views on whether the NSTA:

- has a principal objective which adequately reflects the current context, and
- has the powers to effectively play its role in the future management of the basin.

While the DESNZ Secretary of State is the sole shareholder for the NSTA, the regulator has day-to-day operational independence from the department, and any changes to the principal objective and to the regulator's powers will be developed through close collaboration between DESNZ and the NSTA, in light of stakeholder feedback.

As the Prime Minister said in his speech at the International Investment Summit in October,[136] the government is committed to ensuring that regulation is geared towards fostering growth and investment. We recognise that any changes to a regulator constitute a significant proposal and must be achieved in a way which facilitates the realisation of our vision for fair, orderly and prosperous transition while avoiding adding cost and complexity. It is in this spirit that we will explore and develop any changes to the NSTA's principal objective and powers.

4.2.1 The principal objective of the NSTA

The principal objective provides the foundation for the NSTA's regulatory activity.

The NSTA framework

The principal objective

The current principal objective of the NSTA (the trading name of the OGA) is to maximize the economic recovery of offshore oil and gas resources from the UKCS. This objective was established by the Petroleum Act 1998 by way of amendments via the Infrastructure Act 2015.

The OGA Strategy

The Petroleum Act 1998 also requires the NSTA to produce one or more strategies for enabling the principal objective to be met. The NSTA can revise the strategy or create a new strategy at any time, and any strategy must be reviewed every four years.[137] In 2021, the NSTA updated its inaugural 2016 strategy to include a new "central obligation" requiring relevant persons to ensure the maximum value of economically recoverable petroleum is achieved while taking appropriate steps to assist the Secretary of State in meeting the net zero target. The strategy also includes supporting obligations (requirements which support the achievement of the central obligation) and required actions which must be taken to achieve compliance with the central and supporting obligations. The strategy was reviewed again in early 2024 and found to be fit for purpose at that time.

The OGA Plan

[136] GOV.uk (2024), 'PM International Investment Summit Speech', https://www.gov.uk/government/speeches/pm-international-investment-summit-speech-14-october-2024

[137] The most recent view took place in 2024 and found that the Strategy was fit for purpose – North Sea Transition Authority (NSTA) (2021), 'The OGA Strategy', https://www.nstauthority.co.uk/regulatory-information/regulatory-framework/the-oga-strategy/

The OGA Plan was published in March 2024 (following consultation) and provides detailed guidance on how industry should meet the decarbonisation obligations set out in the OGA Strategy – for example, via measures for emissions reduction, such as electrifying production and reducing flaring and venting – to support the transition to net zero.

The government believes that the principal objective must now be revised and equip the NSTA to support the government's objectives (as set out in section 1) of: a science-aligned approach to future oil and gas production; and the development of an internationally-leading offshore clean energy industry, which ensures good, long-term jobs, growth and investment in communities across the North Sea, in tandem with a sustainable transition in oil and gas – boosting the country's economy and energy security, in line with our climate obligations.

The current principal objective (MER UK) is a longstanding concept which predates both the Wood Review and the creation of the independent regulator. However, the aim of MER UK is often misconstrued or misunderstood. It does not indicate the need to extract all available oil and gas nor to maximise commercial returns. Rather, MER UK means using a 'single owner perspective' for value for the UK as a whole: looking at matters from the point of view of the best use of the resources of the nation, rather than only the perspective of the commercial return to individual companies. It is used by the NSTA for example when comparing multiple options for regulatory approval, to identify the one that is MER UK.

A continued role for the NSTA in promoting collaboration between commercial entities supports the government's commitment to manage fields for their existing lifespan. It will also support the maximising of benefits in a highly interconnected basin, such as asset and infrastructure repurposing towards clean technologies and possibly facilitating the development of strategic 'hubs', supported by electrification. But it must now be balanced against the imperative to drive forward sector decarbonisation and clean energy technologies, as well as the imperative to ensure efficient and cost-effective decommissioning as this activity intensifies across the basin. The principal objective must also recognise the NSTA's broader role in sectors beyond oil and gas, including carbon capture and storage, and hydrogen, that will play a vital role in the basin's future.

4.2.2 Approaches to revising the principal objective

We believe there are two broad routes we could consider for revising the principal objective. We are seeking evidence on which of these routes offer the greatest benefits to inform the design of a revised principal objective.

Regardless of which approach is taken to revising the principal objective, we would need to review the statutory matters to which the NSTA must have regard when carrying out its functions, to ensure they are reflective of any revisions to the principal objective and provide a coherent regulatory framework. We welcome views from all stakeholders on the benefits and risks of different approaches to revising this framework.

Option 1: Retain a single principal objective

The first route retains a single principal objective, with revised wording to reflect the updated stewardship role we expect the NSTA to play in the transition to the basin's clean energy future. For example, a reworded single principal objective might focus on ensuring the efficient and economic management of all activity in the basin, with a focus on maximising transition benefits. The NSTA could interpret this revised principal objective sufficiently broadly to encompass maximising the economic benefits both of existing fields and of emerging clean

technologies towards the achievement of a phased, responsible and prosperous transition, with attendant benefits for jobs and growth, supply chains, communities and energy security.

This approach would better integrate the regulator's role in fostering the basin's clean energy potential into its foundational objective. However, it may be too broad and general to ensure that the NSTA can deliver its functions in a way which both matches the level of ambition of government's vision for the basin's future and provides the level of clarity and certainty industry needs to support continued investment.

Option 2: Create multiple objectives

We consider that setting multiple objectives – either by instituting a revised principal objective with supporting sub-objectives setting out more specific detail, or by replacing the single principal objective with a set of primary objectives – has greater potential for optimising the transition to the UKCS's clean energy future.

In either case, the NSTA could be given an obligation to balance the achievement of multiple objectives when carrying out its regulatory functions, such as the determination of consent applications.

This approach would enable the NSTA's principal objective to clearly encompass government's two objectives for the North Sea. For example, the NSTA could be tasked with multiple objectives which we believe could cover the following three overarching matters:

- Facilitating energy production and security – this objective might focus on fostering industry collaboration towards the efficient and economic management of oil and gas production, including at the decommissioning stage, and promoting good stewardship behaviours across all activity in the basin (including carbon storage and hydrogen).
- Facilitating emissions reduction – this objective might focus on driving the decarbonisation of production including zero routine flaring and venting, as well as fostering clean power generation, to help meet our net zero targets.
- Facilitating a managed, orderly and prosperous transition for the UKCS – this objective might focus on accelerating energy integration in the basin, promoting cost-effective decommissioning (including through asset repurposing towards clean energy industries such as carbon storage and hydrogen production), driving technological innovation, and fostering a world-class supply chain.

The NSTA would then be required to balance the achievement of these objectives towards the delivery of government's vision for the basin's clean energy future.

A similar approach of creating multiple objectives has been taken for other bodies, including for Ofgem as the economic regulator for carbon dioxide transport and storage, and in the creation of the National Energy System Operator.[138] For the NSTA, this approach may have the advantage of providing greater visibility of the complex considerations the regulator will need to manage when exercising its functions – for example, in reaching consenting decisions – to promote the government's vision for the basin.

[138] See The Energy Act 2023, Section 1, https://www.legislation.gov.uk/ukpga/2023/52/section/1, and Section 163, https://www.legislation.gov.uk/ukpga/2023/52/section/163

Question 13a: Which of the following options for revising the principal objectives, if any, do you prefer?

Revised single principal objective

Introduction of sub-objectives

Multiple primary objectives

Other: Please specify

Don't know

Prefer not to say

Question 13b: Please share your rationale for your answer to question 13a. If you prefer the introduction of a revised single principal objective, or the introduction of sub-objectives or multiple primary objectives, please outline what you think the objective(s) should cover.

4.2.3 The stewardship powers of the NSTA

We also need to consider whether the regulator's powers remain appropriate for successful delivery of its future stewardship role. There are several key areas of the NSTA's work set out below where we are seeking evidence on whether and how the regulator's powers could be reformed to optimise the delivery of government's vision for the future of the basin. Responses to this consultation will inform the design of any specific changes.

4.2.3.1 Decommissioning

Decommissioning of oil and gas infrastructure is vitally important for protecting the marine environment. The UK must also meet its statutory and international obligations relating to decommissioning, including under OSPAR.[139] Decommissioning activity in the UKCS is intensifying; according to NSTA estimates, £40 billion of expenditure will be required to decommission oil and gas infrastructure, with more than half of this investment needed in the coming decade.[140] Decommissioning activity can therefore open up commercial opportunities which hold tremendous potential to drive investment, job creation, and to support a phased, responsible and prosperous transition. In particular, the decommissioning supply chain has the potential to contribute to future business growth in the basin (see section 3.7).

[139] The UK Government is signatory to a number of international conventions that govern activity in the marine environment and, under these, has obligations which impact on offshore oil and gas. The most significant obligations for decommissioning offshore oil and gas operations are set out in OSPAR Decision 98/3 which specifically prohibits the dumping or leaving in place of installations in the marine environment. See Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) (2018), 'Guidance Notes on decommissioning', https://assets.publishing.service.gov.uk/media/5c00f3f3e5274a0fdaaaa0f7/Decom_Guidance_Notes_November_2018.pdf

[140] North Sea Transition Authority (NSTA) (2023), 'UKCS Decommissioning Cost and Performance Update', https://www.nstauthority.co.uk/media/ppvlelgd/ukcs-decom-cost-and-performance-update-01.pdf

Although regulatory powers relating to decommissioning fall primarily within the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED)'s remit,[141] the NSTA has a role in advising on alternatives to the decommissioning of installations or pipelines (including reuse or preservation), and in ensuring the costs of decommissioning are kept to a minimum. The NSTA is also the regulator for well plugging and abandonment, which accounts for approximately half the cost of decommissioning. Potential reforms to the NSTA's powers in this area could focus both on minimising risks arising from the potential for disorderly decommissioning, and on maximising opportunities for a UK-based decommissioning industry and for asset repurposing.

There are concerns that decommissioning activities are not progressing as rapidly as planned. The NSTA wrote to all licensees in November 2023 to highlight their expectation that licensees comply with their well decommissioning regulatory obligations in a timely manner, in light of concerns about a growing number of deferrals of well decommissioning activities being sought.[142] As well as delaying and potentially weakening the realisation of the benefits a vibrant decommissioning industry could deliver, slow and inefficient decommissioning can increase the overall decommissioning bill, which would in turn increase the scale of costs picked up by the taxpayer through decommissioning tax reliefs and a reduction in taxable profits. Hence, government believes that it is important to ensure the regulatory regime is optimised for delivering the best outcomes for both taxpayers and licensees.

Reforms to the NSTA's powers in respect of decommissioning could include:

- Amending its enforcement powers in relation to plugging and abandonment notices to ensure appropriate and proportionate levers are in place to drive orderly and efficient decommissioning, with a particular focus on avoiding the long-term suspension of wells.
- Making licence relinquishment dependent on the completion of all required decommissioning works, with the ability to take financial security when decommissioning execution is at risk, to ensure that licensees and operators have a robust incentive to meet their statutory obligations regarding decommissioning.
- Streamlining and clarifying the statutory decommissioning process, clarifying how existing requirements apply to (for example) exploration wells and cessation of production.

For all these potential areas for reform, we would need to work closely with regulators to ensure a coherent decommissioning framework is in place to support the full range of activities and technologies deployed in the UKCS. The basin has the potential to become the home of a thriving decommissioning industry and supply chain, which could deliver important benefits in terms of jobs and investment. Efficient and strategic repurposing of assets could also deliver benefits for the transition in terms of (for example) enabling a more rapid and cost-effective scale-up of clean energy industries which could make use of existing pipelines and/or storage capacity. Achieving our vision in this space may require the NSTA to be equipped with new powers to drive forward the basin's full potential.

[141] Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) is the part of DESNZ responsible for reviewing, approving and monitoring the implementation of decommissioning programmes to ensure they are consistent with regulatory obligations, and for serving legal notices for decommissioning liability and taking steps to protect the fiscal payer from the risk of default. OPRED also acts as the decommissioner of last resort.

[142] North Sea Transition Authority (NSTA) (2023), 'Open Letter, Meeting licence commitments to suspend a well', https://www.nstauthority.co.uk/media/tlkby5xl/open-letter-well-pa-deferrals-nov-2023-002-externalredacted.pdf

4.2.3.2 Disputes and sanctions

As the transition progresses, the NSTA's role in promoting and facilitating collaboration between parties operating in the basin will become increasingly important.

To enable this, we believe we should develop the regulator's powers in dispute resolution. At present, where parties find themselves in dispute and cannot independently arrive at a solution, they can refer certain disputes to the NSTA, which can make non-binding recommendations for their resolution. The NSTA can also undertake dispute resolution on its own initiative. We will consider providing the NSTA with binding dispute resolution powers (as is the case with other regulatory bodies, such as Ofgem). This would enable the NSTA to unblock disputes which risk causing significant delays to projects key to supporting the transition, thereby providing greater certainty to industry and investors.

Any changes to the NSTA's dispute resolution powers would need to continue to achieve a balance between fulfilling the revised principal objective and respecting parties' individual commercial positions. Changes would also need to be designed to ensure that parties would not be deterred from referring disputes to the NSTA where they could benefit from its expertise. Consequential impacts, including (but not limited to) appeal routes, would also need to be taken into account.

Other areas where we believe a review of the NSTA's powers are necessary are:

- **Sanctions (including enforcement processes) and financial penalties.** We need to ensure that industry can be confident of operating in an environment where non-compliance with regulatory obligations can be deterred and (if it occurs) dealt with swiftly and proportionately. For example, we could consider increasing the maximum level of financial penalty the NSTA can impose, with a view to striking the right balance between deterring non-compliance and ensuring continued investment confidence.

- **Powers relating to licensees.** For example, the NSTA could be empowered to take a more robust approach to assessing the fitness of licensees. The change of control considerations the NSTA applies to consenting a change in control of a licensee company could also be reviewed, and we could also consider whether the NSTA's sanction powers should be expressly clarified as applying to both current and former licensees. We will also explore whether the NSTA's sanction powers in respect of onshore activities are sufficiently robust, and/or whether they would benefit from greater alignment with the NSTA's sanction powers in respect of offshore activities.

- **Powers regarding sanctions and financial penalties to carbon capture and storage, and hydrogen**, where the NSTA already exercises some functions (for example, relating to licensing and consents). This could enable a more coherent approach to enforcing regulatory obligations across the range of technologies operating in the basin and may be better aligned with an amended principal objective. Any changes would require careful development with industry and other regulators.

4.2.3.3 Carbon capture and storage, and hydrogen

DESNZ and the NSTA are already working in collaboration to deliver carbon capture and storage for the UK, including the development of fit-for-purpose processes and regulation to ensure that CO2 can be safely stored in the timeframe we need for our carbon reduction targets, and that it stays underground long-term.

We welcome stakeholder views on whether it would be beneficial for the NSTA to take a more active stewardship role in relation to carbon storage. For example, in addition to an extension of the NSTA's powers to impose sanctions and financial penalties, we could consider whether there are other areas where the NSTA should be equipped with similar powers in respect of carbon storage to those it has in relation to oil and gas. This could cover areas such as meeting attendance, collaboration powers, information-gathering and disclosure (if these are not already sufficient), and the ability to enforce binding milestones in licenses and work programmes, which may be particularly helpful for encouraging activity during the appraisal term of carbon storage licenses.

Changes such as those considered above could support the regulator in operating in line with any new or amended principal objective. Some changes may merit more gradual implementation (as the longer-term regulatory needs of carbon storage activities become clear) and would require collaboration with the NSTA and Ofgem to ensure the industry is regulated appropriately and proportionately.

We also welcome stakeholder views on the broader question of whether it would be beneficial for the NSTA to take a more active stewardship role in relation to hydrogen in the future. Again, this could involve the extension of the NSTA's powers to cover a broader scope of activities and to ensure adequate enforcement levers are in place to support industry in meeting their obligations.

The government may also consider how the NSTA should support other related sub-sectors as part of the evolving energy transition and we welcome any further views from stakeholders on this point.

Question 14a: What are your views on the ideas for reforms to the NSTA's powers considered above?

Question 14b: In addition to those explored above, are there any other areas of the NSTA's powers which could benefit from reforms?

Next steps

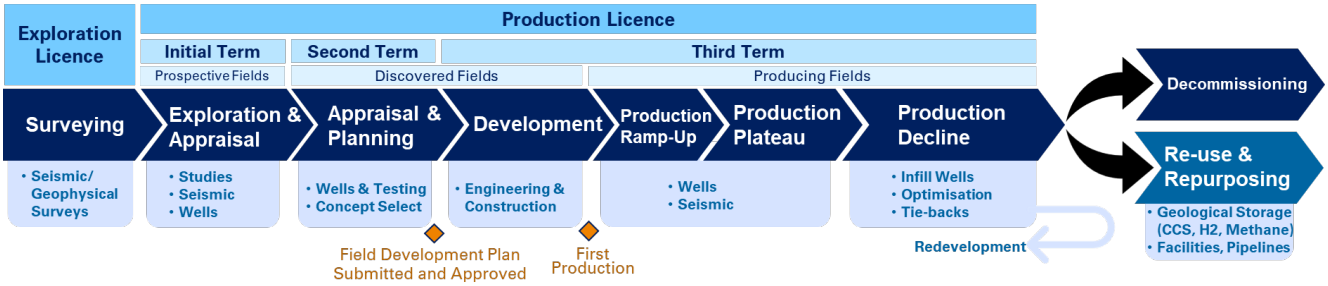
During the consultation period, the government will hold a series of engagement activities including a range of round table meetings with core groups of stakeholders across regions of the UK where businesses and communities have close links to the oil and gas sector. This will be done to increase transparency around the consultation, to encourage dialogue, and solicit written responses. This will include a programme of dialogue and engagement with industry, unions, environmental groups, and citizens.

The government intends to produce a plan for the North Sea based on responses to this consultation. It is determined that this plan is drawn up after all stakeholders have had a say so that it can command maximum confidence. In particular, we are determined to work with North Sea communities to ensure they have a prosperous and positive future.

Annex 1: The oil and gas project life cycle

Delivering an oil and gas project is a major undertaking with significant upfront costs. New projects constitute major infrastructure developments. It typically takes several years to go from an early concept through to first production, with production then often continuing over a multi-decade time horizon. The diagram below provides a simplified overview of some of the key stages of this development process.[143]

Figure 11 Simplified overview of the oil and gas project lifecycle from initial surveying through to decommissioning, re-use and repurposing



Following exploration activities, there are four main stages in the process of extracting oil and gas – this is an overview and not a comprehensive explanation.

Exploration and Appraisal

The initial exploration phase for oil and gas can take several years. Companies must first analyse which sites they could extract from, and then apply for a production licence to the NSTA. This step can take four to nine months.

The search for potentially viable oil and gas sources is conducted through geological studies, seismic activities, drilling exploration wells, and other activity. After discovering a site potentially containing relevant resources, the developer conducts further tests, including drilling, to establish whether extraction will be profitable.

If operators are satisfied with their findings, they will pursue the development stage and develop detailed plans to take forward the project. Concept Select Documentation is submitted to the NSTA for assessment. An approved Field Development Plan is required before any new field or significant extension of an existing field can be developed.

During assessment and authorisation, the NSTA will ensure that the developments align with the central obligations in the OGA Strategy published in 2021 (obligating relevant persons to take necessary steps to secure that the maximum value of economically recoverable petroleum is recovered from the strata beneath relevant UK waters, and to take appropriate steps to assist the Secretary of State in meeting the net zero target).

To secure final consent, full information on intent, scale and hazards, including a full environmental impact assessment are provided to OPRED for consideration.

[143] Simplified overview of the oil and gas project lifecycle from initial surveying through to decommissioning, re-use and repurposing. CCS = Carbon Capture and Storage. H2 = Hydrogen.

Development

Once all necessary regulatory consents are secured, the Final Investment Decision is made by the operator, and the site can be further developed to establish the necessary infrastructure and prepare for production.

Construction can take several years and is often challenging due to the harsh offshore working environment, reliance on specialist skills and supply chain, and significant scale of projects.

Production

Production can take place over many decades. Development activity will continue during the production phase to optimise production of hydrocarbons; for example, additional wells might be drilled while the site is being maintained. After extraction, oil and gas are transported for processing and distribution.

Production will fluctuate over the duration of the entire operation, and various constraints can be placed on it (e.g. decarbonisation targets). It usually slowly declines towards the end of the field's commercial lifetime. Further licensing may be necessary.

Decommissioning, Re-use and Repurposing

When a field reaches the end of its life and production stops, the associated infrastructure must be re-used to support oil and gas production, repurposed for other energy sectors such as carbon capture and storage, or decommissioned. Decommissioning involves securing wells and removing infrastructure, including, jackets, topsides and pipelines, where appropriate.

During this stage, operators often collaborate with experts in demolition, waste management, and other relevant fields.

Annex 2: More detail on the supply chain

The oil and gas supply chain can broadly be broken down into five subsectors.

Name	Description
Wells	Drilling and well interventions including steel tubes
Reservoirs	Geoscience, seismic data acquisition and exploration activities
Facilities	Engineering, operations, maintenance and decommissioning contractors
Marine and Subsea	Provision of vessels, equipment and contractors including remotely operated vehicles (ROVs) and semi-submersible heavy lift vessels
Support Services	Recruitment, Health and Safety services, legal, caterers, inspection services, transport and logistics, including ports

Supply chain companies are also frequently split into ‘tiers’:

Name	Description
Tier 0	Operators and duty holders
Tier 1	Large oilfield service companies
Tier 2	Subcontractors, e.g. for drilling
Tier 3	E.g. original equipment manufacturers and installers

Consultation questions

Question 1a: What role can government play to ensure that local workers can benefit from the growth of these new energy sectors?

Question 1b: In addition to the investments in clean energy industries outlined in this section, are there any other areas you think should be targeted for investment?

Question 1c: What opportunities do you foresee for the oil and gas industry to invest into clean energy?

Question 1d: Which locations offer the best opportunities for investment in clean energy industries?

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?

Question 3a: What support is required for oil and gas workers to transition into low carbon sectors that align with the UK's longer-term environmental and economic ambitions, as proposed within this consultation? In your response, please consider the transition through different lenses – for example, by location (domestically and internationally) or by demographic.

Question 3b: How do you think we should approach measuring the transition of workers from the oil and gas sector to low-carbon industries? Do you have a view on what metrics we could be using to measure the transition of workers from the oil and gas sector to low carbon sectors?

Question 3c: How would you define a good work opportunity within the low-carbon economy? In your response, please consider fair remuneration, the role of trade unions and creating jobs that are inclusive and contracted with financial security.

Question 3d: What, if any, other key occupations not already listed could oil and gas workers transition into that you think are important to supporting the transition to a low carbon economy?

Question 3e: Do you think the UK has a sufficient skills base to underpin the transition? What role will the oil and gas sector play in the availability of critical skills?

Question 4a: How can government and industry develop the skills passport into a meaningful and effective mechanism for workers to transition from oil and gas into other industries? What is the correct role for industry and government to make this happen?

Question 4b: What can we do to further support specific local communities that are heavily reliant on oil and gas through the transition?

Question 4c: Are you aware of any examples of successful collaborations between regions or sectors that could serve as a model for facilitating worker transitions?

Question 5a: We would welcome any evidence you can share on any of the barriers mentioned in this section (pay, geography, policy uncertainty, employer incentive to support retraining, aging workforce).

Question 5b: What, if any, additional barriers not already mentioned in this section are you aware of?

Question 5c: What do you think could be done to improve the pay and standards of the clean energy sector and help ensure a proper role for trade unions?

Question 6: How can we enhance diversity within the sector? In your response, please consider the role of external organisations (such as employers and trade unions) and detail which group or persons this intervention would benefit.

Question 7a: Which parts of the oil and gas industry supply chain do you think will be most affected by the transition, and what impacts will it have on the workers within those businesses?

Question 7b: What potential barriers exist for current oil and gas supply chains to transition to alternative sectors?

Question 7c: What additional measures can we take to support these supply chains during the transition?

Question 7d: What are the current existing key strengths in the UK supply chains for these sectors?

Question 7e: Do you think that UK supply chain companies will be competitive in accessing growing clean energy sectors in the North Sea? What role can government play in supporting them?

Question 7f: What key export opportunities do you anticipate will be open to the UK supply chain, as a result of the development of clean energy sectors in the North Sea?

Question 7g: Where do you see the main opportunities in a) offshore wind b) floating offshore wind, c) CCUS (T&S) d) hydrogen e) decommissioning for the oil and gas supply chain?

Question 8: How can we improve our understanding of the interconnected basin, including its opportunities and risks? Do you have any evidence you can share about this?

Question 9: How can we manage future oil and gas production from existing fields, in a way that accounts for the interdependencies across existing assets and supports an orderly transition across the basin? We would welcome examples of technical or commercial dependencies including timing-related considerations if relevant.

Question 10: How can decarbonisation projects or asset repurposing support an orderly transition of the basin, or vice versa? Please share any evidence to support your suggestions.

Question 11a: To what extent do you agree or disagree that this position on new licenses will support the UK to set a globally leading example in tackling climate change?

Question 11b: Is there anything else you think should be considered in the Government's definition of i) licensing and ii) new fields? What would be the case for doing so, including consideration of the commercial and environmental impacts?

Question 11c: Aside from oil and gas, are there any other sectors you think would be affected by these proposals? If yes, how would they be affected?

Question 11d: Do you anticipate any situations where additional targeted interventions might be needed or beneficial to support the government's climate and North Sea objectives? If so, what criteria or mechanism do you think should be used to determine whether such situations have arisen?

Question 12a: What, if any, impact do you think these policy considerations could have on businesses? Please consider if small and micro and/or medium-sized businesses would be disproportionately affected.

Question 12b: What, if any, impact do you think these policy considerations could have for individuals with protected characteristics? If there are negative impacts, what potential mitigations could be explored?

Question 13a: Which of the following options for revising the principal objectives, if any, do you prefer?

Revised single principal objective

Introduction of sub-objectives

Multiple primary objectives

Other: Please specify

Don't know

Prefer not to say

Question 13b: Please share your rationale for your answer to question 13a. If you prefer the introduction of a revised single principal objective, or the introduction of sub-objectives or multiple primary objectives, please outline what you think the objective(s) should cover.

Question 14a: What are your views on the ideas for reforms to the NSTA's powers considered above?

Question 14b: In addition to those explored above, are there any other areas of the NSTA's powers which could benefit from reforms?

This consultation is available from: www.gov.uk/government/consultations/building-the-north-seas-energy-future

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