OEUK OFFSHORE ENERGIES UK

BUSINESS OUTLOOK REPORT 2025

The comprehensive outlook for
the UK's offshore energy resources

BUSINESS OUTLOOK REPORT 2025

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

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

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Cover photograph:

Bacton Gas Terminal, Norfolk UK.

Homes and businesses across Britain have been relying on North Sea gas coming ashore at National Grid's Bacton terminal in Norfolk for almost 60 years. Today, around a third of the gas the country needs flows through Bacton, and the terminal handles well over 100 million cubic metres a day in the winter months.

Domestic gas will remain crucial for the UK's energy security. It will also enable a low-carbon future by repurposing gas infrastructure to support low-carbon hydrogen production, transport blended and pure hydrogen, and deliver low-carbon dispatchable power through gas-fired power plants with carbon capture.

FOREWORD

Dave Whitehouse,
Chief Executive Officer
Offshore Energies UK

The future of the North Sea is in our hands. Our 2025 Business Outlook report arrives as the government holds crucial consultations that will shape the future of this world class sector. The resulting decisions will impact everyone.

OEUK will continue to make the case that those who care about industrial Britain, who care about the future of the UK economy, who care about communities up and down the country, should make their voices heard. These are important times.

Today, 75% of our energy needs are met by oil and gas. Often, we think of energy needs as the fuel and power that heats our homes. But as we are increasingly reminded, energy plays a crucial role in the nation's industrial capabilities, economic growth, and national security. The success of this industry is deeply linked to our national successes.

In launching the consultations, the UK government committed to meaningful engagement on the long-term future of the North Sea. I continue to welcome this commitment.

OEUK and our members are engaging with policy makers, bringing solutions to the table that will safeguard the jobs, energy security and economic growth the UK needs within an increasingly uncertain European and international context. Energy security is national security.

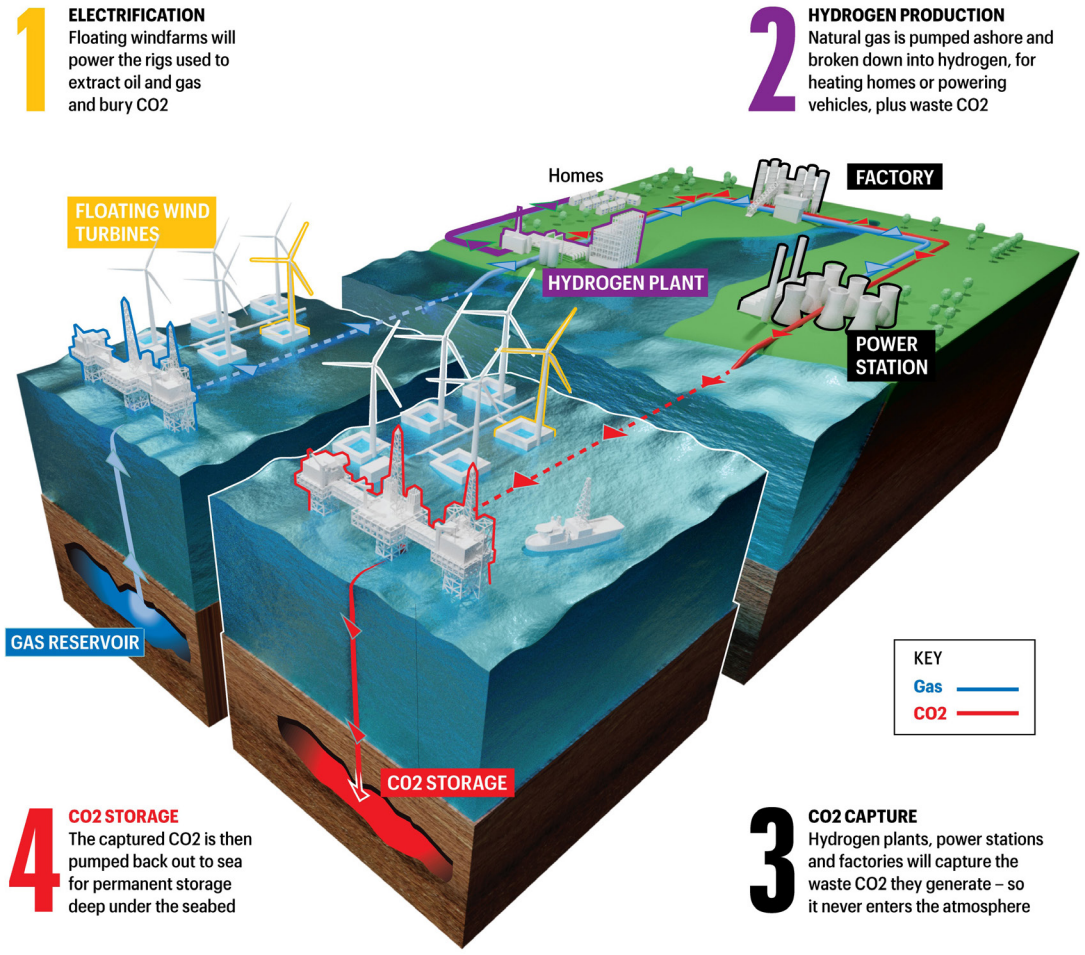
This report is a dashboard for companies and investors looking for opportunities across the UK's energy mix. It also details the challenges - revealing an industry whose brilliant people are driving change but need to be backed with pragmatic policy to compete on the world stage.

As our report finds, latest figures from government show total UK energy production has hit record lows. As a result, the UK has a worrying import gap with more than 40% of total energy demand supplied from overseas. In March, the Office for National Statistics announced the UK economy has contracted by another 0.1%, specifically citing a fall in oil and gas production as a key factor.

While the UK continues to need oil and gas it makes sense to utilise our own resources responsibly alongside the acceleration of renewables.

The tools for growth are in our hands. Our report shows the UK offshore energy sector could invest over £200bn by 2035 in homegrown oil and gas alongside offshore wind, hydrogen, and the carbon capture and storage that can futureproof our heavy industries.

Our report sets out what industry and government can do, individually and collectively, to unlock this investment at pace and scale. Success for Auction Round 7, further clarity on the allocation of funding for Track-2 and non-track carbon capture & storage projects are some of the outcomes long championed by OEUK and our members as an indicator of health for the UK offshore sector.



Alongside this is recognition of the continued role of oil and gas. As this report shows, over 90% of operators and developers among OEUK members say revenues from oil and gas are of critical importance in enabling projects including renewables and low carbon.

Our report highlights that in a scenario where there is economy-wide realisation of net zero by 2050, the UK is expected to use 13-15 billion barrels of oil and gas equivalent over that period.

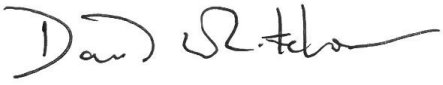
Yet the UK is only on track to realise up to 4bn of those barrels from domestic production.

The gap between the oil and gas we produce and the oil and gas we use comes at a cost. Oil and gas which is imported pays less taxes, supports fewer jobs and are often produced with greater emissions than that which is produced here in the UK.

This report finds we could reduce the UK's energy import gap and produce an additional 2-3bn barrels at home. Unlocking additional resources from waters around the coast of Britain could add £150bn of gross value to the UK economy, on top of the £200bn of economic value expected from current plans.

This is the responsible path for our security, for the environment and the economy. It is also the positive, pragmatic outlook investors need to see as they decide where in the world to allocate capital. We must make our entire energy mix a compelling investment opportunity.

2025 is a pivotal year for a homegrown energy future and for the UK economy. To succeed we must back our offshore energy business and their people to build a North Sea we can all be proud of for decades to come.



SECTION 1:

EXECUTIVE SUMMARY

Key messages

- **2025 will be a pivotal year for the future of the North Sea.** The government is consulting on the future of the North Sea, as well as aspects of the oil and gas fiscal regime and will provide guidance on environmental impact assessments following the Finch Supreme Court judgement. The outcomes of which will significantly impact the business outlook for the basin.
- **The survey shows business sentiment of the basin is fragile.** We see an offshore energy sector and its businesses under pressure. If we get this right this sector can grow the economy, energy security while helping the uk reach climae goals to right the ship, we will need continued support from government to improve the investment environment.
- **UKCS companies are seeing historic low rates of return.** Declining commodity prices, low production output and high taxation rates have pushed UKCS companies' net rate of return to minus 1% for the 12 months to June 2024.
- **The UKCS remains a major strategic asset, used well it can drive growth, provide energy, and support the decarbonisation of the UK economy.** Under the right regulatory and fiscal regime and with the right (industrial and energy) policies, the UKCS could be an engine of growth of the UK economy through the decades to come.
- **The offshore energy sector has the potential to deliver a £110-120bn opportunity over the next five years,** with forecast expenditure in oil and gas of circa £50bn, offshore wind - £55bn and CCS & hydrogen - £10bn.

- The ongoing wave of investment in electricity generation – may bring prices down, but will take time. Diversification of our electricity supply can strengthen energy security.

- **Oil and gas production decline has accelerated over the last five years, averaging 9% since 2020 but can be stemmed.** It has been driven both by declining investment in the basin and other destinations proving more attractive. 2024 saw, what could be a brief, rise in investment in anticipation of the budget last October. Although the supply chain are seeing a sharp drop in their order books going forward. The challenge in 2025 is to drive investment back into the UKCS in the face of continued business uncertainty.
  - Production decline in 2025 appears to have halted because of investments that are currently coming on stream, however, total production could halve by 2030 if investment falls away.
- **There are still substantial opportunities in oil and gas in the UKCS. We have 4bn boe in plans at various states of readiness, with a further 2-3bn boe more available to develop over time.** These resources are from both new and existing fields reflecting progressive responsible recovery of the 12bn boe of reserves and resources identified by the NSTA.
  - The UK is projected to use at least of 13-15bn boe by 2050. Using its own resources would help build energy security, support the exchequer and benefitting the environment.
- **Both wind and CCS investments are facing their own challenges to meet wider UK objectives:**
  - **The total installed offshore wind capacity will need to quadruple by 2030 to meet the National Energy System Operator (NESO) and the Climate Change Committee (CCC) guidance.** This is a big year for wind, the results of AR7 will be critical to delivering upon our goals.
  - **Track 1 & 2 CCS clusters require further clarity on the allocation of funding.** 2024, saw the first Track-1 projects reach FID, following an announcement of funding in October. However, we require greater clarity on funding for Track-2 clusters, the faster this is given the sooner the UK can decarbonise.
- **We are, and will remain, reliant on energy imports to supplement domestic production of energy.** Maximising our domestic resources will ensure that we take hold of our energy future.
- **The UK's energy supply chain tells us it needs greater visibility of the pipeline of work if it is to capitalise on the opportunities, if not we will import the solutions.** For offshore wind, operators and developers need to see that the funding mechanisms are competitive in a very demanding business environment. For CCS, the lack of financial support on Track-2 funding is problematic and increased by the slow pace of contract awards for Track-1 projects.

SECTION 2:

INVESTMENT AND SPEND TRENDS

2

Over the next five years some £115bn could be spent on the UK Continental Shelf (UKCS) including oil and gas development, renewable energy and low carbon solutions. Of this substantial investment, £50bn could be spent on oil and gas, £55bn on offshore wind and £6-8bn on CCS, with the remainder on hydrogen. This is part of a wider long-term development programme which will see over £400bn spent on all aspects of offshore energy by 2040.

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

The current investment climate is damaging the UK's ability to produce oil and gas domestically – the country needs to be seen as a stable and predictable environment to invest in, for both the existing industry and for emerging renewable and low-carbon solution sectors. This requires regulatory and fiscal certainty in the face of international competition.

Oil and gas

Following a few years of higher upstream spending after the immediate investment slump during Covid, the course is now downhill, reflecting investor confidence, maturing assets, and a change in political priorities. A year ago, we had expected the total investment and expenditure on the UKCS in oil and gas to peak in 2023, however, we are now seeing the peak to be 2024. With the right balance of energy and fiscal policies, we could see the investment trend sustained for longer even as the basin matures. As production from the North Sea declines, operators' focus turns to cost efficiency and projected decommissioning activities, as capital and operational expenditure drops significantly.

Last year saw greater capital investment from industry into the basin of £1.5-2bn higher than expected. This surge in investment has come, in large part, as a result of some significant oil and gas developments moving forward over the last couple of years.

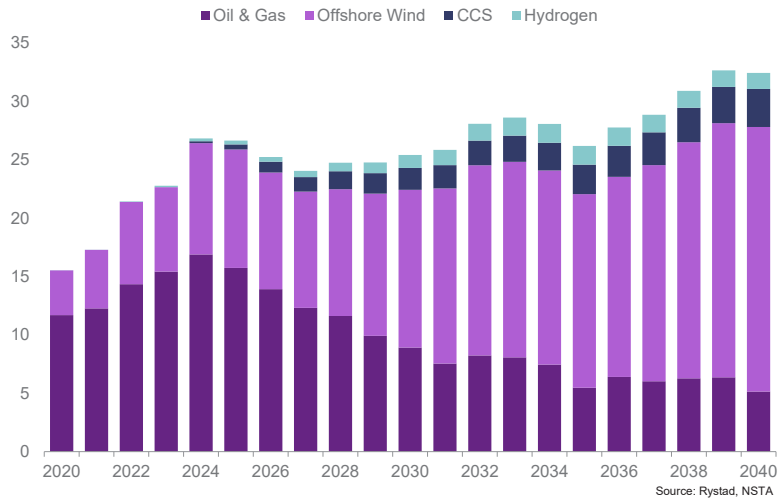


Figure 1a – Total UKCS expenditure profile (£ bn)

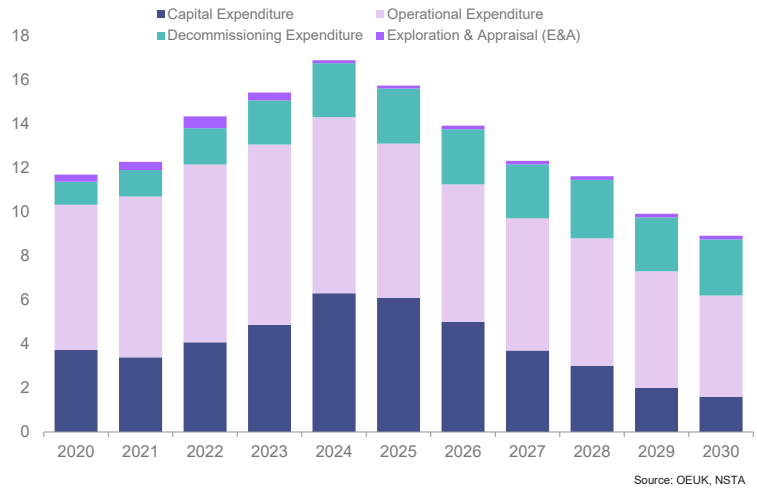


Figure 1b – 2020s UK oil & gas actual and projected expenditure (£ bn)

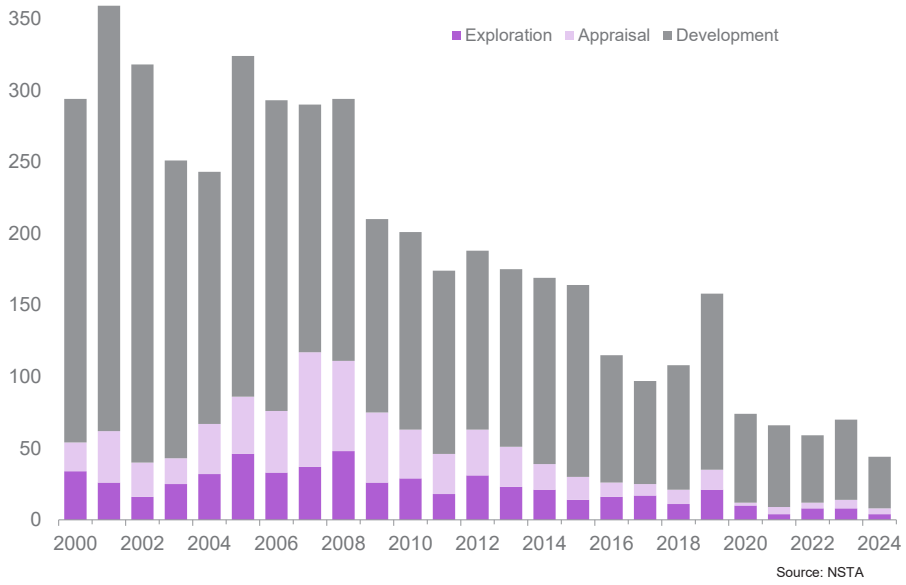
Despite the UKCS being a mature basin that has produced oil and gas for over 50 years there are still significant opportunities remaining, with 6-12bn potential barrels of oil and gas equivalent within our waters. While commodity prices have remained relatively strong in recent years, challenges in the investment climate are holding progress back.

Capital and operational expenditure

As UK upstream oil and gas companies managed to invest approximately £6bn in capital expenditure (capex) in 2024. The difference between earlier predictions and the actual spending is evidence of the optimism the UK supply chain have conveyed in recent years against a continually challenging backdrop. Based on the latest outlook, we are seeing the potential to maintain investment at current rates in 2025, however, investors will need to ensure that the UK remains competitive for investments at a time when international competition for capital remains strong, and resources are tight.

Operational expenditure (opex), though not directly aligned to capital expenditure, is related dependent on the nature of the capital invested and the timeline of its impact. The significant upturn in capital investment last year should help slow production decline over the next few years, particularly if investment can be sustained.

Figure 2 – Oil and gas drilling activity continues to decline (number of wells)



Operational and maintenance (O&M) costs are seen to be declining gradually for oil and gas production, reflecting the drive for continued efficiency as well as progressing the decommissioning of depleted fields. The multidecadal experience of operating and maintaining assets offshore, lessons learnt, and expertise can be brought forward to the broader energy industry, including CCS, floating wind, and eventually in hydrogen too.

Of the circa £115bn in expenditure opportunities over the next five years, it is forecasted £65bn to be capital investment into all types of energy projects, while the additional £50bn is set to be spent on operations, maintenance and decommissioning through the current decade. Over a ten-year timeframe, the supply chain should expect to see over £200bn of opportunity, and over £400bn through to 2040, owing to the ramp-up of renewable and low-carbon opportunities expected through the 2030s.

With the right policies in place and a concerted drive to make the most of the existing energy supply chain, around 60% of this sum could be targetable by companies operating in the UK. The UK's offshore energy supply chain needs to be carefully positioned to make the most of the investment in domestic energy supplies and infrastructure. This means better visibility, predictability, and certainty of upcoming work scopes, or else the lack of confidence to invest in future activity will continue to persist.

Exploration, appraisal and development

The number of offshore wells being drilled annually has seen a staggered decline over the last 25 years. The 2000-2008 average of almost 300 wells/yr is now down to 36 development, four appraisal and four exploration wells were drilled last year. Well count has been relatively low for several years, as would be expected for a declining basin with fewer discoveries left to be made.

This has led to a gradual reduction in the number of drilling rigs active in the UK region of the North Sea, which is now down to eight floating and thirteen jack-up rigs. This is a significant reduction from the numbers seen a decade ago and any further departures could reduce capacity to an unstainable basis, restricting the capabilities to support ongoing oil and gas operations and decommissioning, as well as slow down the development of carbon stores.

Decommissioning

Decommissioning of offshore oil and gas infrastructure in the UKCS is an essential and unavoidable process as fields reach the end of their operational lifespan, requiring the safe removal and disposal of platforms, wells, pipelines and other equipment, while ensuring minimal environmental impact and compliance with regulatory requirements.

In 2023, the basin managed £1.7bn of total expenditure across decommissioning projects. The subsequent forecasted spend for 2024 was £2.3bn, while the total forecasted spend for the period 2024-2033 is around £25bn.

The estimated £2.3bn expenditure last year is to account for 187 wells, 14 topsides, 14 substructures and 9.1 km of pipeline removed. There were also 326 km of pipeline, 10,668 tonnes of subsea infrastructure and 3,851 subsea mattresses decommissioned. All of which are substantial increases on the previous year.

UKCS rate of return

UKCS companies are seeing historic low rates of return as oil and gas prices in 2024 returned to levels last consistently seen prior to the Ukrainian invasion. Returns have been hampered by declining commodity prices, low production output and high taxes. Reflected in the latest ONS net rate-of-return figures for UKCS companies averaging -1% for the 12 months to June 2024. Such poor performance further illustrates the need for reform to increase certainty for investors, to improve on the current investment climate and drive growth.

Renewable and low-carbon investment

The government mission to encourage a strong investment pipeline in offshore wind, CCS and hydrogen is taking time to gain momentum. The regulatory landscape for clean energy investment is complex, with multiple bodies having oversight of project approvals and consents. As oil and gas activity declines in the basin, the UK must 'mind the gap'; to avoid a loss of supply chain capabilities, we must ensure investment is sustained across the energy mix to avoid importing the energy transition.

It is important that the government ensure that existing regulators have aligned goals, are adequately resourced and have aligned processes to establish robust, efficient, and predictable regulation. Consenting remains a lengthy, resource-intensive and complex process and is causing significant delays to projects. OEUK welcomes Mission Control's task of reducing the consenting process and priming ongoing investment in the transmission infrastructure as well as the full range of clean energy generation and storage resources.

Offshore wind

Fixed-bottom wind has been the driving technology in the build out of offshore wind with over £50bn of cumulative investment estimated to have been spent in the pipeline of UK projects over the last 10 years. The fixed-bottom offshore wind sector growth rate is anticipated to level-out with projected expenditure to remain high, exceeding £9bn every year from now to the end of next decade.

OEUK expects to see large growth towards the end of the decade and into next, from the build-out and adoption of floating wind technology. Significantly larger turbines can occupy acreage further out to sea, taking advantage of stronger and more consistent wind speeds, transferring more reliable power back to shore. The nascent sub-sector is currently struggling to agree preferred foundation solutions amongst the many demonstration projects, is projected to outpace annual expenditure of fixed-bottom wind by the late-

Figure 3 – Actual and projected annual UK offshore wind technology expenditure 2014-2040 (£ bn)

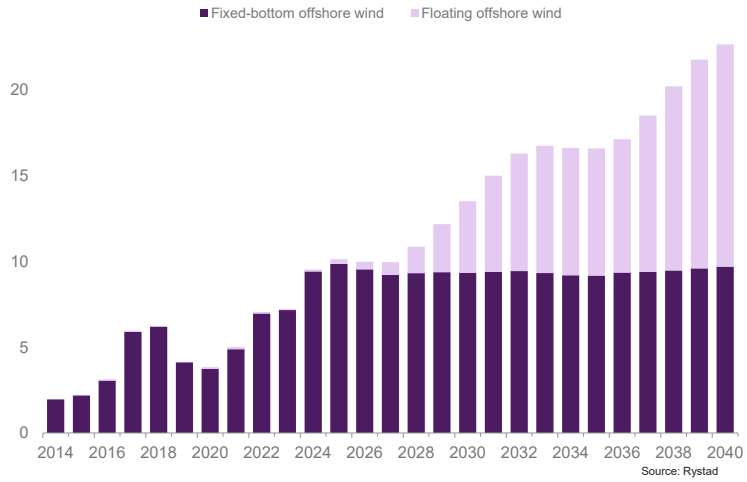
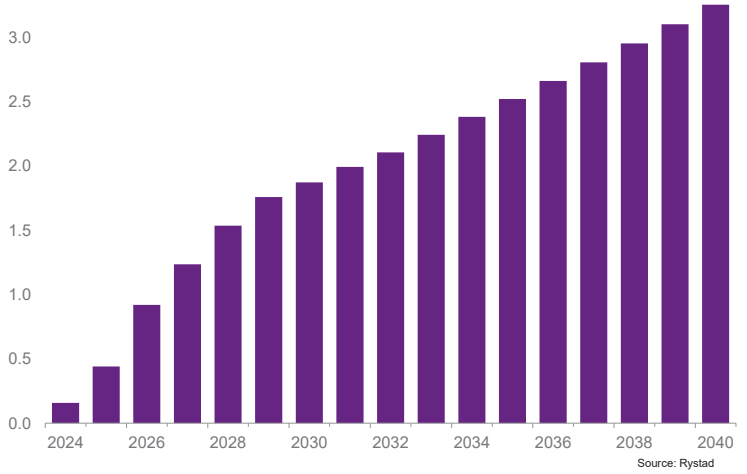


Figure 4 – CCS expenditure in the UK (£ bn)



2030s. Funding awarded to Green Volt in the latest allocation round was a welcome commitment of spending from government.

The successful build out of floating wind is dependent on the clearing price. For floating wind to scale, the levelised cost of energy (LCOE) must drop as quickly as possible. Cost reductions will be fundamental for the deployment and industrialisation of floating offshore wind in the UK. DNV forecasts that LCOE for floating offshore wind will reduce by 80% in the next 25 years.

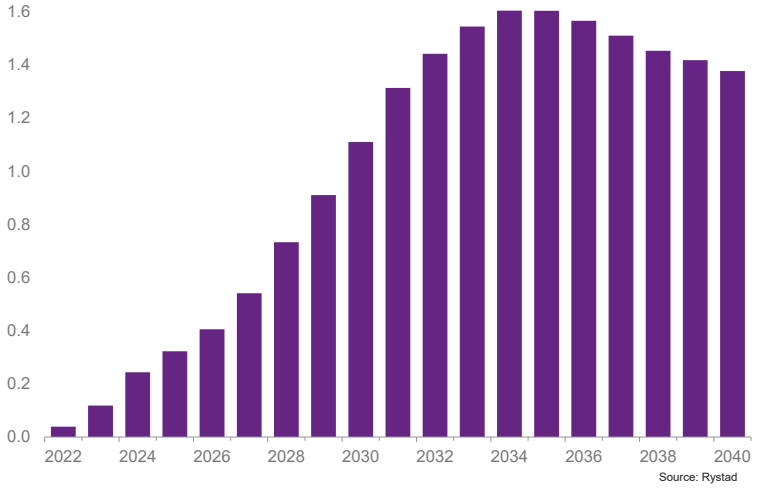
Analysis from RenewableUK outlines 'success' with targetable CfD clearing prices of under £100/MWh by 2030 (a 30% reduction on the 2024 price) and prices under £70/MWh by 2050. Floating offshore wind will not be competitive in the energy mix until this significant cost reduction can be achieved. Cost reductions can be achieved as pace either through narrowing down in the number of concept or an emergence of a preferred concept. Larger turbines and industrialisation will follow, with larger wind farms allowing for economies of scale.

As this is an area the existing UK supply chain is well positioned to take advantage of, it is crucial the government provides support and gains alignment with industry as fast as possible.

Carbon Capture and Storage

The confirmation of £22bn funding in October 2024 for Track-1 clusters over 25 years is a major milestone for the sector which has enabled the East Coast Cluster to take final investment decision (FID) and prepare to start construction in 2025. Hynet, the other Track-1 project, is expected to take FID in early 2025.

Figure 5 – Hydrogen expenditure in the UK (£ bn)



These projects, alongside Track-2 clusters Viking and Acorn, will build the necessary infrastructure to jumpstart the UK's CCS sector. But the 2030 and 2035 targets of 20-30mn tonnes/yr and 50mn tonnes/yr, respectively are not easy. Many emitter projects, especially those outside the Track-1 clusters, lack clarity on eligibility for government support. Expansion for Hynet and the East Coast Cluster is slow, leaving uncertainty around future projects and level of support to expect. A clear Track-2 deployment plan is critical to maintain momentum and ensure long-term confidence in the sector.

While 27 CO_2 storage licences have been awarded, OEUK estimates that more than 100 licences will be needed by 2050, underscoring the urgency for rapid industry development. OEUK members are already making significant investments across the CCS value chain, including billions spent on front-end engineering design (FEED), carbon store appraisals, and engaging the supply chain. Over the next 15 years, Rystad Energy analysis commissioned by OEUK forecasts over £30bn will be spent, presenting a major opportunity for the oil and gas supply chain to transition into this growing sector.

Hydrogen

Investment and total expenditure for hydrogen is anticipated to see a swift ramp-up over the next 10 years, reaching a crest of £1.6bn in the mid-2030s. Based on the government ambition of achieving 10 gigawatts (GW) of hydrogen production by 2030, with at least half coming from electrolytic hydrogen.

The governments 'Net Zero Hydrogen Fund' sits at £240mn via two strands. Strand 1 provides development expenditure for front end engineering design FEED and post-FEED activities, aiming to build the pipeline of hydrogen production projects to measurably move these closer to deployment. Strand 2 provides capital support for hydrogen production projects that do not require revenue support through the Hydrogen Business Model (HBM).

Green hydrogen development requires a more capital-intensive investment with around 55-60% of project expenditure allocated to capex, compared to 45-50% for blue hydrogen projects. The UK percentage share in global annual hydrogen expenditure is projected to be consistent around 2%.

Across the energy mix, from oil & gas to renewable and low-carbon solutions, regulatory and planning uncertainty continues to create delays for projects seeking investment and onward development, hampering companies' ability to plan their activities in the UK. Building up energy infrastructure will be critical, whether for electricity transmission, CO_2 transport, or natural gas and hydrogen storage. Rapidly upgrading such capacity will provide confidence and attract substantial investment in the coming decade.

SECTION 3:

BUSINESS SENTIMENT AMID UNCERTAINTY

3

Business sentiment is fragile across the oil and gas sector, though substantially more positive in CCS and offshore wind.

An uncertain policy landscape discourages capital investment, disrupting the entire value chain. A visible flow of project activity, backed by a government signalling industry confidence, gives the established and highly capable UK supply chain assurance to allocate and keep resources in the UK.

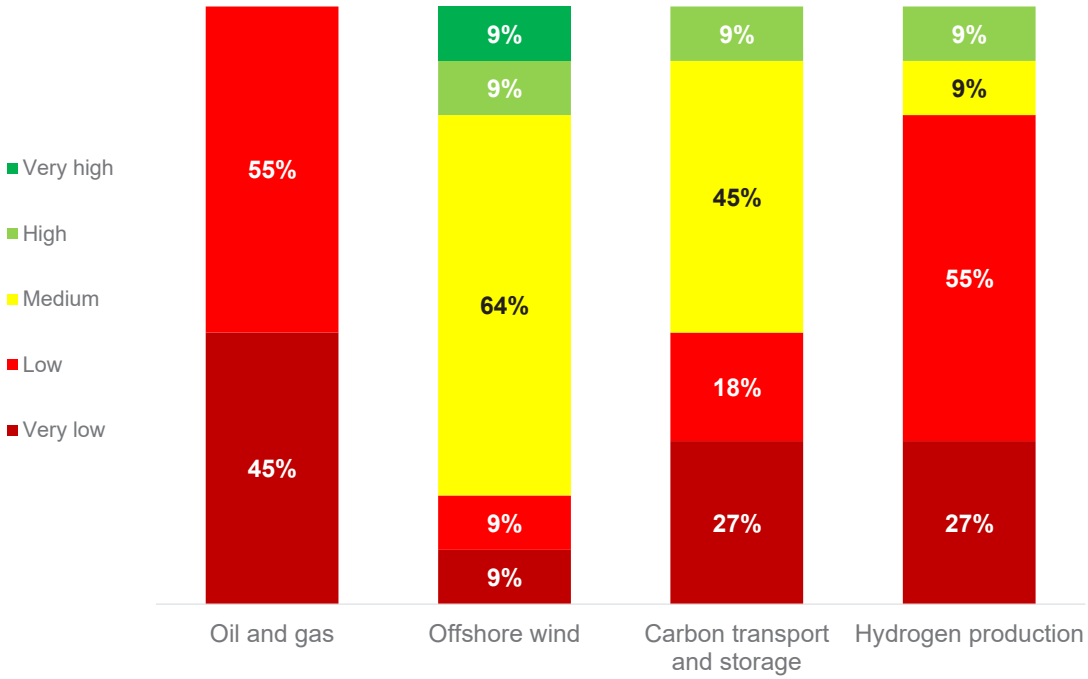
Operators', developers', and supply chain companies' general business sentiment at the beginning of 2025 compared with the start of 2024.

When asked to rate their company's general business sentiment at the beginning of 2025 in comparison to 2024, 91% of operators stated it was worse or significantly worse than one year ago. While service companies had a much more varied view of the business environment, with companies evenly split (39%) on sentiment being about the same compared to worse. In contrast to operators and developers, 23% of supply chain respondents reported an improved business sentiment compared to the same point last year.

The tax regime presents by far the greatest challenge for investing in their UK businesses, the survey showed. This was followed by licensing and regulatory and consenting issues.

Figure 6 – General business sentiment for UK operators and supply chain, at the start of 2025 vs 2024

Figure 7 – Q: Rate the extent to which your company views the UKCS as a competitive and attractive proposition for investment across energy verticals



Operators and developers

Over 90% of operators and developers said that revenues from oil and gas were of critical importance in enabling their plans to progress projects, whether oil and gas or low-carbon and renewable developments.

Operators overwhelmingly view the UKCS as uncompetitive for investment in oil & gas, especially compared to overseas opportunities, as well as in comparison to offshore wind and carbon capture and storage. Hydrogen production is also poorly regarded as an attractive investment proposition for these business in the current landscape. Offshore wind in particularly is viewed quite positively in the UK and is echoed by the more favourable overall sentiment reported by supply chain companies.

When asked what they perceive as the greatest challenges in investing in their UK business, operating companies cite the long-term uncertainty of the tax regime, regulatory issues with scope 3 requirements unknown, and political uncertainty as the three main obstacles. Issues around planning consents, increasing operating costs and more attractive international opportunities are also constraints companies are facing to attract investment here.

Additionally, no operators and developers view the funding mechanisms for new energies to be suitable and sufficient. Track-1 expansion delays and uncertainty for both Track-1 and Track-2, as well as Hydrogen Allocation Round 2 (HAR2), are major concerns for companies willing to invest in these energy transition technologies.

Outside of the cluster sequencing process, operators report a challenge to engage with government about their support for non-track projects.

UKCS operators and developers plan to commit investment across a variety of initiatives to reduce operational emissions in 2025. These include flaring and venting reductions, plant modification and upgrades, flaring and venting reductions including investment specifically towards net zero flaring, as well as electrification projects and other power generation alternatives.

Supply chain

Many UK supply chain companies exhibit a more optimistic outlook for the business environment than the operators.

Q: What proportion of your revenue comes from oil & gas compared to renewable and low-carbon solutions?

	0%	<20%	20-40%	40-60%	60-80%	80-99%	100%
Oil and gas	2%	8%	10%	8%	19%	31%	23%
Offshore wind	55%	32%	10%	2%	2%		
CCS	66%	34%					
Hydrogen production	73%	27%					
Other	50%	27%	13%	7%	3%		

Table 1 – Proportion of revenue from different energy verticals

Few supply chain companies at present rely on other energy verticals for more than 20% of their revenue, as oil and gas remains the primary revenue driver for these companies crucial to servicing the energy transition. However, the majority of supply chain companies forecast growth and an increase in business in offshore wind in the next 12-24 months. Nearly half of companies also anticipate increases in business in hydrogen and CCS over this period.

Figure 8 – Q: Does your company expect to see growth and in increase in the level of business you do in offshore wind, CCs and hydrogen in the next 12-24 months?

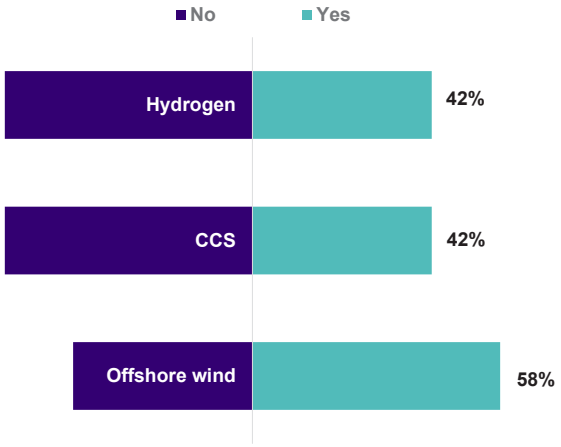


Figure 9 – Q: Does your company have sufficient visibility of the business opportunities in offshore wind, CCS and hydrogen?

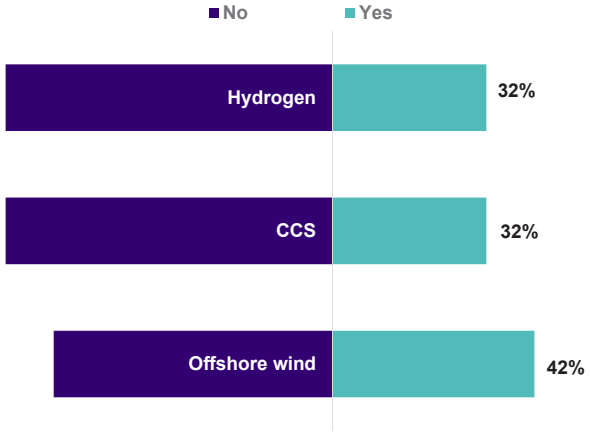


Figure 10 – Q: What proportion of company revenue comes from UK business?

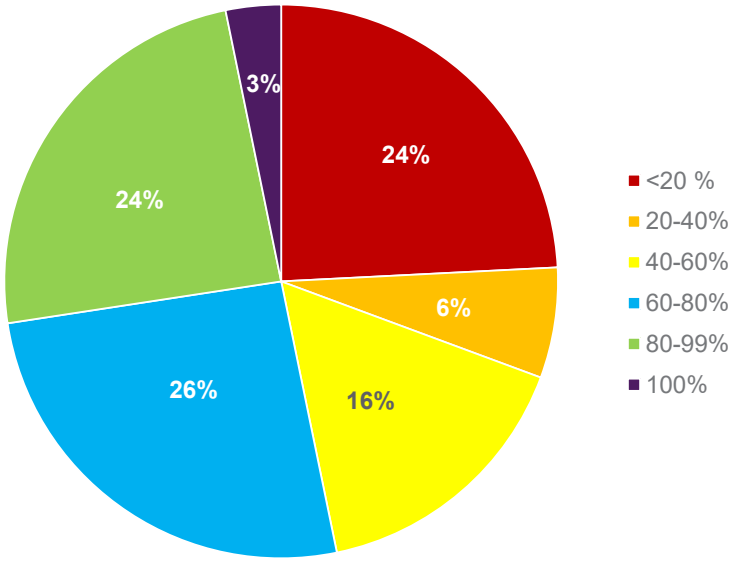


Figure 8 – Q: Does your company expect to see growth and in increase in the level of business you do in offshore wind, CCs and hydrogen in the next 12-24 months?

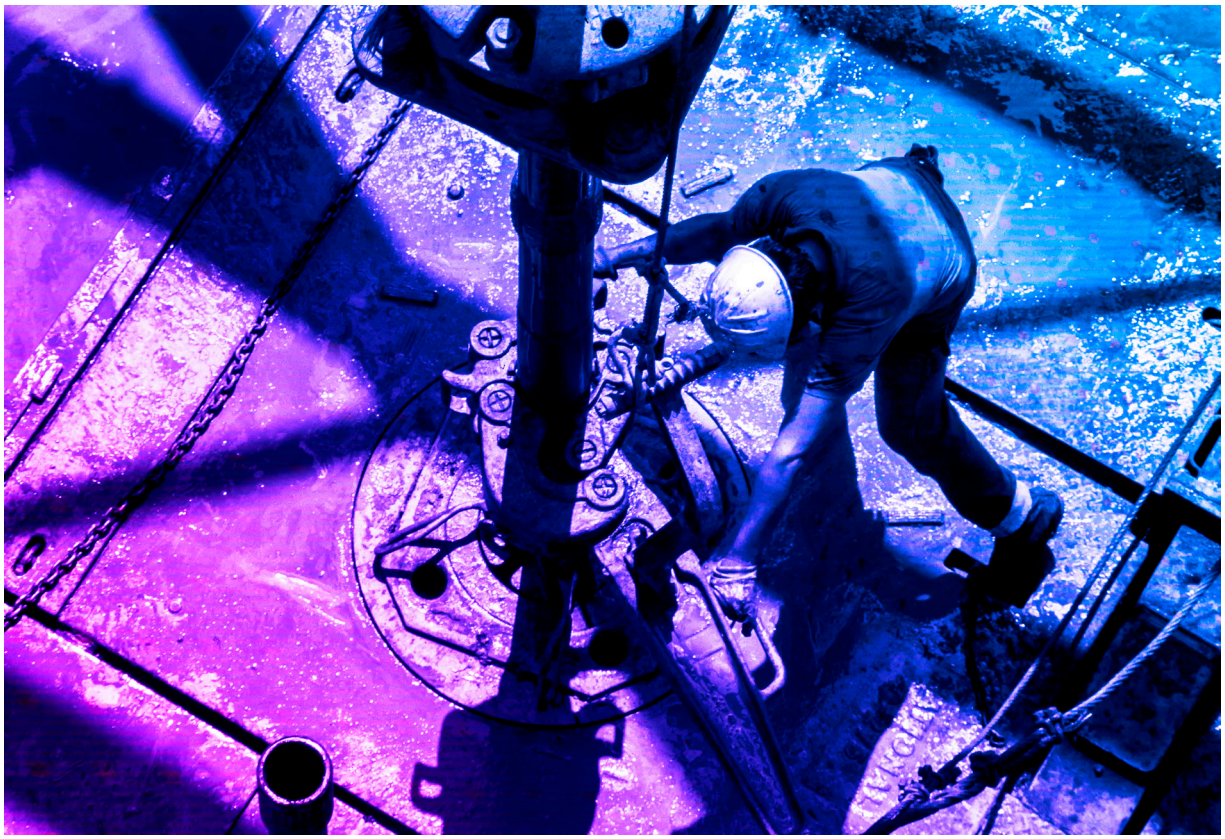
Despite the expected increase in business, most companies reported a lack sufficient visibility of the business opportunities for all three new energy verticals.

Figure 9 – Q: Does your company have sufficient visibility of the business opportunities in offshore wind, CCS and hydrogen?

More than half of supply chain companies report that 60-100% of their company's revenue comes from the UK. While 89% of all respondents have aspirations to increase the amount of non-UK business they will do over the next 12-24 months.

Figure 10 – Q: What proportion of company revenue comes from UK business?

Many of the supply chain companies submitting a more positive business sentiment this year cite overseas opportunities, particularly in oil and gas, as a primary reason for better sentiment compared to the start of 2024. The vast major of these companies also state that 80-100% of their revenue currently comes from oil and gas. Through more attractive overseas opportunities and a lack of visibility and confidence in the pipeline of non-oil & gas projects in the UK, the country is at risk of losing a significant amount of supply chain capacity over the coming years, crucial in the build-out of renewable projects. This loss will result in the UK giving an increasing amount of renewable and low-carbon contracts to other countries' supply chains, with energy security, wealth, jobs and economic growth lost overseas.



SECTION 4:

KEY ISSUES TO NAVIGATE IN 2025

4

Last year was an important year for the energy industry. Some significant changes included the general election and a new government. This year promises to be another critical year for the future of the North Sea, with a series of hurdles to be overcome and challenges to be navigated including important government consultations on industrial strategy, licensing, environmental impact assessments and a new permanent mechanism to respond to future oil and gas price shocks. In addition to the UK's dynamic with a 2nd Donald Trump term in the White House.

Fiscal

In the Autumn Budget, the new UK Government further reformed the Energy Profit Levy (EPL) to increase the rate by 3%, extend to 2030 and remove the investment allowances. Government did however retain the first-year allowances which allows companies to expense their capital in the first year. This is a fundamental principle in all OECD tax regimes and important it was retained.

The softening of both oil and gas prices since the EPL was originally introduced in 2022 is stark, particularly in the Brent market, however, the Energy Security Investment Mechanism (ESIM) has not been triggered yet. Despite the fall in prices, sectorial inflation remains high and opex costs continue to challenge some project economics.

The current uncertainty in the fiscal regime continues to adversely impact activity across the basin, with a consensus formed across businesses that unless changes are made to the regime before 2030 the resources, capability and hard-earned expertise will move overseas.

The recently launched HMT consultation sees government committed to introducing a new permanent mechanism to respond to future oil and gas price shocks. This mechanism will form part of the permanent regime and looks to give certainty to both industry and government. Industry look forward to continuing to engage with HMT on this important consultation.

Operators and supply chain companies alike identified the fiscal regime as the biggest obstacle in the way of UK investments.

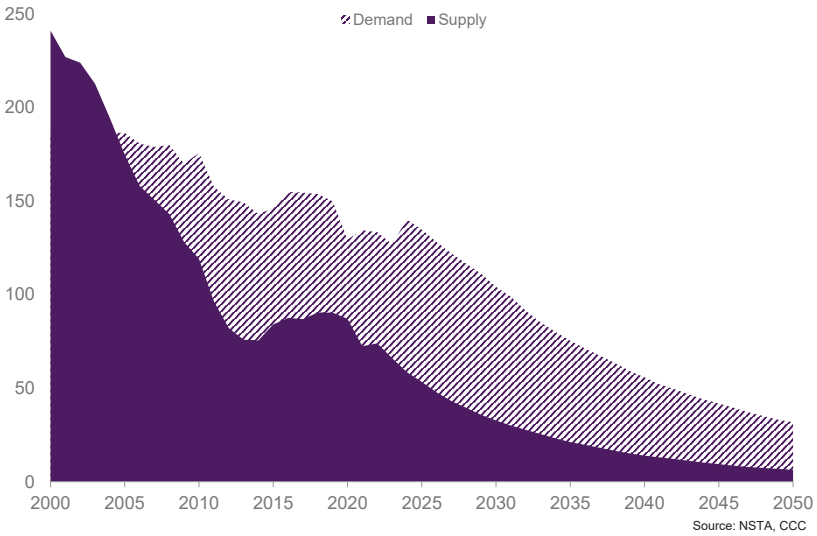
The following principles should be considered alongside broader UKCS fiscal regime reform:

- **Long-term certainty and stability:** fiscal certainty supports investors' confidence and increases the likelihood and quantum of investment.
  - To ensure that investors and lenders have sufficient confidence in their project economics, fiscal rules should be stable and predictable over a typical project lifecycle to enable investment.
  - Changes should be prospective, i.e., not retroactively applied to ensure that they can be effectively factored into investment decisions.
  - Targeted taxes like the EPL should be responsive and capable of swiftly rebalancing when the conditions change. The mechanism by which a tax is applied and then unwound should be clear and transparent to investors. Proposed changes should be clearly communicated and made following consultation with industry prior to their implementation to mitigate unintended consequences and help provide certainty.

- **Balanced risk and reward:** supporting the UK's competitiveness for attracting capital on an international scale, it is crucial to recognise the importance of balancing competitive returns for both the government and investors.
  - The fiscal regime should allow both government and companies to make a competitive return. The tax burden must be appropriate to the maturing nature of the UKCS and the size of the opportunities.
  - Targeted taxes should be profit-based and only applicable to exceptional profits, ensuring that increased costs associated with production during a high-pace environment are considered. Investors should be entitled, at a minimum, to the full recovery of capital costs through tax relief at rate that is in line with well-established corporate and international tax norms.

- **Objective-driven:** fiscal policy should be designed with clear objectives in mind. In the North Sea context:
  - Targeted taxes should support the priorities of the government. Investors should be encouraged to invest in facilitating these priorities through investment stimulus such as targeted investment allowances applicable to decarbonisation projects.
  - The direct and indirect impact of such taxes should be carefully considered to ensure that they do not undermine specific short- and long-term policy aims, such as increasing economic growth, protecting jobs, or delivering net-zero.

Figure 11 – NSTA and CCC oil & gas supply demand outlook (mn tonnes of oil equivalent)



Licensing

The NSTA has paused consideration of granting any further licences from the 33rd Licensing Round pending the finalisation of the government's consultation process into the future of licensing. This has raised significant concerns and challenges for the industry and wider economy, resulting in investor uncertainty increasing in the basin. The UK has increasingly imported more and more oil and gas from overseas, while abandoning its own resources.

As a function of reducing domestic supply outpacing the decline in the demand of oil and gas, the UK has been a net importer of oil & gas since 2005, receiving over 1bn tonnes to date. The view of the NSTA and CCC is that an additional 1.3bn tonnes of supply deficit will occur from now through 2050, further accelerating our reliance on, and transfer of wealth to, other countries.

The UK is projected to be import-reliant for half of our oil and 90% of our gas in 2050, the target year for reaching net-zero.

Billions of barrels of oil and gas equivalent remain undiscovered in the UKCS. A lot of commercially viable discoveries are in unlicensed acreage. They were waiting their turn behind more economically viable projects in acreage where the licences have since lapsed. If we are to unlock the full potential of the resource remaining in the basin companies need access both to resources that have been previously licensed as well as fresh acreage.

This shutting down of opportunities not only disqualifies potential discoveries from being made and resources being developed but is also known to be an impediment of investor confidence in the existing licences, as it often takes multiple licence awards to bring a successful development forward to UK consumption. In the short term, investors have withdrawn from the basin in favour of overseas opportunities. They may not be willing to return for energy-transition investment opportunities, although they may have some of the lowest emissions intensity profiles of any developments (see the NSTA Emissions Monitoring Report 2024).

Regulatory

In June 2024, the UK Supreme Court ruled in favour of Sarah Finch's challenge against the fossil fuel industry, ruling that downstream emissions must be considered within environmental impact assessments (EIAs) for fossil fuel projects. Being that scope 3 emissions are foreseeable and have significant environmental impact their exclusion from assessment unlawful.

OEUK and the wider industry recognises the importance of ensuring the EIA process is legally compliant and supports developing an approach that aligns with the principles and outcomes of the ruling, which must be a pragmatic and effective approach to the assessment of scope 3 emissions.

In effect, the ruling put the approval process on hold while the regulator and policy makers reviewed the arrangements for EIAs. This pause has had an inevitable economic impact, with projects approaching assessment stage effectively put on hold without an exact resolution date.

Hundreds of millions of pounds of investment have already been sunk into projects that are frozen or are being held in limbo until new guidance is approved.

OEUK submitted an industry response to the EIA supplementary guidance consultation in January and expects the government to release the updated supplementary guidance in the spring 2025. This guidance is critical to establish a foundation for regulatory compliance and investor confidence for future oil and gas developments on the UKCS.

Purpose of an EIA

An important function of an EIA is to ensure and demonstrate that both the direct and indirect environmental effects of a project are understood, and avoided where possible, and that any residual environmental effects are mitigated as far as possible. The relevant information is collated and made available to the consenting authority and the general public. The authority then determines whether these residual risks are acceptable give the wider benefits of the development.

With the government committing to a resolution by Spring 2025, and this issue being a significant barrier to investment, it is imperative the government moves this forward without being linked to other consultations.

Clean Power Mission 2030

In November 2024, the newly formed National Energy System Operator (NESO) published a report titled 'Clean Power 2030' (CP30), setting out recommendations to the UK government on the design of a future clean power grid by 2030.

The report outlines two pathways the country could take to achieve a clean power system by the end of the decade:

'Further flex and renewables' aims to quicken the pace at which renewables are deployed (50 GW of offshore wind, 27 GW of onshore wind, and 47 GW of solar PV by 2030), but envisages no new dispatchable power available by 2030. Instead it relies on quintupling the current battery storage capacity to 27 GW. This pathway also sees the highest levels of societal engagement with expected consumer and industrial demand flexibility going up to four or five times more than 2023 levels.

'New dispatch' projects similar growth in renewables but at a marginally lower rate for offshore wind deployment (43 GW) than to 'further flex and renewables'. This pathway envisages some new dispatchable power including 1.4 GW power-related CCS and 1.3 GW hydrogen-to-power, alongside 4.1 GW of nuclear and 0.9 GW of bioenergy with carbon capture and storage (BECCS). This leads to a lower overall reliance on battery storage (23 GW).

Both pathways see increased electrification of transport, heat and industry by 2030 as needed to meet economy-wide carbon targets. Energy efficiency improvements continue in both cases, and require increased digitalisation, open data and innovation.

Battery storage capacities need to multiply by 4.6 in the 'Further flex and renewables' pathway and 5.4 in the 'New dispatch' pathway in just six years.

NESO recommendations imply record levels of renewables deployment, requiring between 4 GW and 10 GW in both of the next two CfD allocation rounds. The annual deployment will have to be at a scale 'multiple times higher than ever achieved before'.

Clean Power 2030 is a challenge with £40bn/yr in funding required until 2030, compared with £11bn in recent years; as well as an 11% growth in electricity demand. The mission can only be achieved with bold action and sustained momentum across an array of objectives and a series of crucial time-bound steps.

While the 2030 target cannot be taken as a certainty, achieving 'clean power' by 2030 will put the GB energy system in a strong position, while also providing widespread high-value job creation in the build-out to 2030 and beyond. It is crucial that the government, NESO, and other key stakeholders ensure policy actively drives growth of the UK supply chain to support the delivery of Clean Power 2030, securing investment for companies across the UK.

The US play a bigger role in Europe's energy markets

The US has taken a leading role in supplying gas to Europe, capitalising on the import gap left by Europe's decision to cease imports of Russian gas. It is important to recall that this is not a Washington-led initiative but the consequence of several decades of negotiations between traders and suppliers, with the final destination of cargoes depending on where the return is greatest.

Last year, the US was second only to Norway for imported gas to the EU. The UK gas market is a similar picture with the US our second largest source of imported gas consecutively for the last three years. Over 7 bcm (17%) of UK gas imports - nearly 70% of all Liquefied natural gas (LNG) imports – came from the US in 2024.

Imported LNG from the US comes with higher associated emissions than Norwegian gas, which is the least carbon-intensive form of gas. It has a carbon intensity of 8 kg CO_2/boe, owing to electrified hubs and a long-standing ban on flaring. US gas imports, which have been produced, compressed, liquefied, transported a few thousand miles by tanker and regasified and compressed once more are almost 10 times greater, 78 kg CO_2/boe, and roughly four times that of domestically produced gas, according to the NSTA Emissions Monitoring Report 2023.

While the UK relies on the cleaner Norwegian gas for the majority of our gas imports, the Nordic country is unable to meet our demand. Substituting domestic supply for cheaper but dirtier US LNG imports will have a significant impact on the UK's overall emissions profile.

In January, the US Administration announced intensions to expand oil and gas drilling, declaring a 'national energy emergency', outlining plans to boost US oil and gas production. If realised, these plans could increase oil and gas supply in the market, potentially driving commodity prices down. While this may stabilise consumer energy bills, there is a risk that cheaper gas, over a prolonged period, could hamper UK renewable and low-carbon developments and the ability to meet its Clean Power 2030 and net zero by 2050 ambitions.

While the pound has bounced back against the US dollar in recent weeks, a weak pound will compound the impact of any increase in oil prices as these are dollar-denominated.

SECTION 5:

SUPPLY AND DEMAND

Energy is the backbone of the economy – powering industries, transportation networks, and technological innovation while propelling job creation and economic growth. Above the economy, energy is essential for daily life enabling food production, electricity and heat for homes, and healthcare. A reliable and affordable energy supply ensures stability. A country having a supply of natural resources of its own is fortunate, providing energy security through reducing dependence on imports and geopolitical risks.

Look-back

Energy consumption

The UK economy has become less energy intensive over the last 25 years due in large part to economic restructuring, including the gradual loss of heavy industries and manufacturing observed over several decades, in addition to increased technological efficiencies, policy interventions and changing consumer behaviours. Since 2000, UK energy intensity has halved, falling from 4.72 TJ/£mn of output to 2.31 TJ/£mn in 2022[1]. This means the UK needs less energy to create economic wealth as an economy, reflecting the UK's position as a service-led economy.

From 2004, the UK began relying on imports to meet annual consumption. This import gap peaked in 2013 with indigenous production accounting for less than 53% of total primary energy demand, as total imports of fuel reached an astonishing 181mn tonnes of oil equivalent (mn toe), compared with only 113mn toe of UK production. The UK consumed 164mn toe in 2024, less than 1% lower than in the previous year but a 26% reduction from 2010, and a 30% reduction from 2000.

Oil and gas remain by far the largest sources of our energy use, continuing to account for 74% of energy demand. This is despite a 2% reduction in gas use year-on-year. Looking beyond 2025, the energy mix will continue to diversify but oil and gas will still be needed, meeting over a fifth of our energy needs in 2050, as outlined in the Climate Change Committee Balanced Net Zero Pathway scenario.

Total fossil fuel consumption as a per cent of our demand energy mix has reduced from 90% to 75% over the first 25 years of the century. The phase out of coal being the major contributor to the changing energy mix. Over this period oil's proportion of the energy mix has increased from 33% to 38%, highlighting the criticality of the fuel source. While absolute coal and gas usage has dropped significantly as the country has expanded into other sources for electricity generation.

[1] Energy use: by industry reallocated to final consumer and energy intensity - Office for National Statistics

Figure 12 – Domestic production and total primary demand of fuels (mn tonnes of oil equivalent)

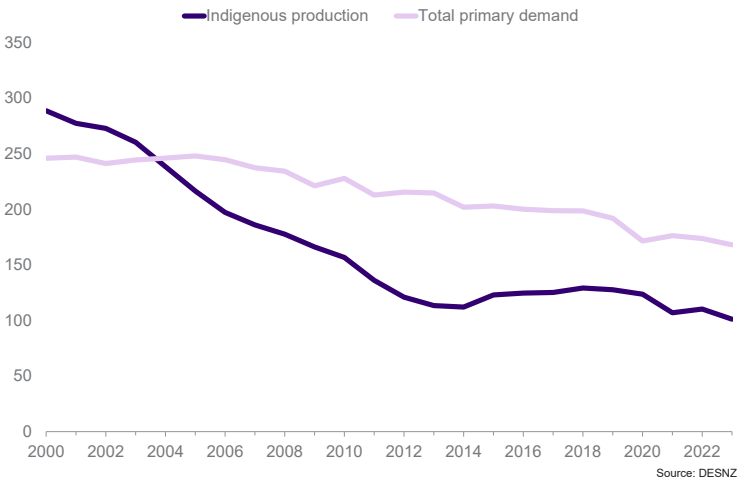


Figure 13 – Historical energy consumption (mn tonnes of oil equivalent)

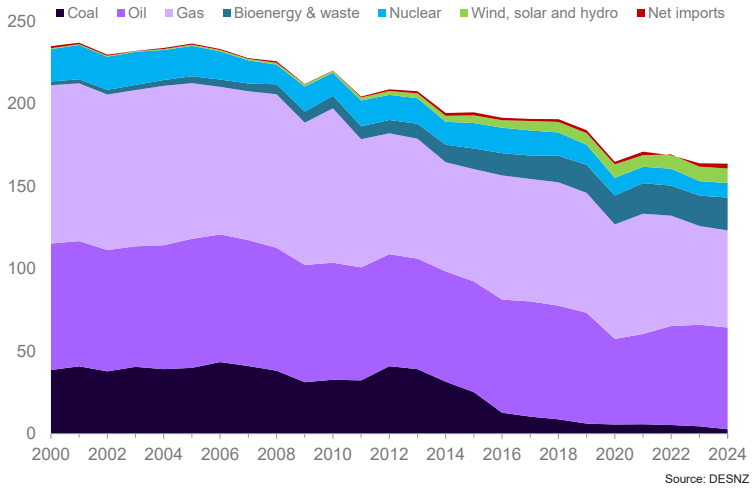
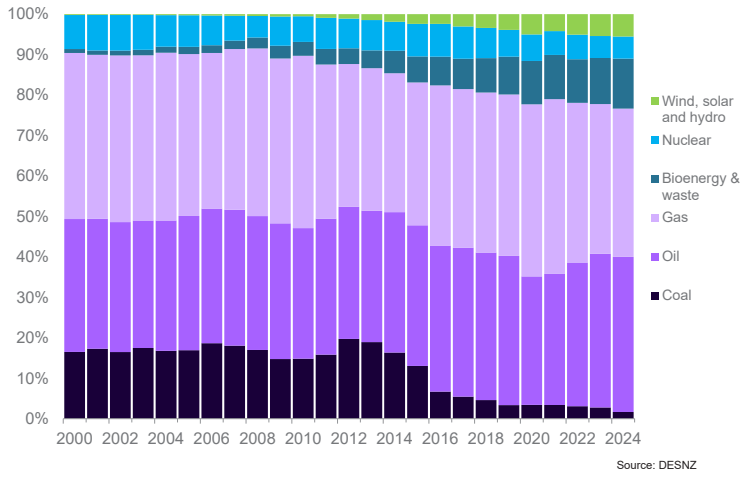


Figure 14 – Consumption source mix as proportion



The decreasing use of gas

Over the course of the 21st century, total annual oil demand in the UK has declined at a rate of 0.9% per year (a 20% reduction in total), falling from 77 to 62mn toe. While gross gas has declined at a faster rate of 2% per year (a 39% reduction in total), reducing annual gross gas demand from 96 to 59mn toe (111 to 68 bcm). While oil annual consumption has reduced by a fifth since 2000, natural gas consumption has decreased by over a third (39%).

The decline in gas consumption, however, has been significantly outpaced by the decline in domestic production. Since 2000, gas production in the UK has fallen 74%, dropping from 108mn toe (126 bcm) in 2000 to 28mn toe (33bcm) in 2024. This rapid fall in domestic production has seen the UK transition from being a net exporter of gas to a net importer, reducing the UK's gas security. This lack of security leaves the country exposed to external instabilities and price shocks as we rely on overseas supplies.

During this period UK energy consumers have scaled up their reliance on gas for heating and power. Today, approximately 73% of households in the UK depend on gas central heating systems. Alongside this, gas contributes to over 30% of the UK's power supply, providing dispatchable power to supplement the intermittency of renewables.

Gas demand in the UK has fallen by 39% over the last quarter of a century, driven by falls in industrial activity, particularly energy intensive sectors, and improved energy efficiency. The one area where gas use continues to dominate is in industrial and domestic heating, where gas demand could continue to rise.

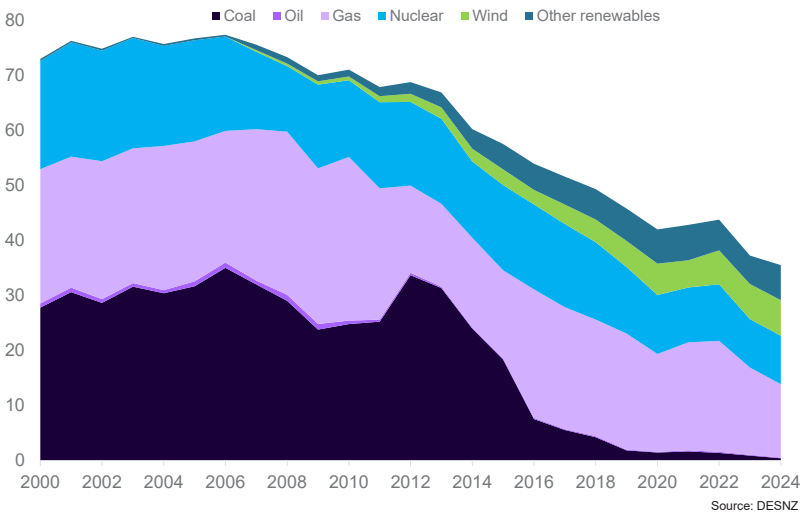
Replacing gas as a source of heat in domestic applications will continue to be challenging. Heat pumps are the main competitor but so far their take-up has been slower than anticipated with approximately 280 thousand heat pumps now installed in the UK, a rate of only 412 per 100,000 households. Whereas the European average is over 3000 per 100,000 households. In 2022, the UK reportedly installed a total of 55,000 heat pumps; the same year the government outlined the goal to install 600,000 heat pumps annually by 2028, in order to meet home decarbonisation targets. The CCC has since advised that this number would need to be 450,000 per year by 2030 to meet their Balanced Pathway Scenario.

Electricity

The production and consumption of electricity in the UK has undergone meaningful changes over the last few decades, reflecting a marked transition to cleaner energy and greater efficiency. Historically reliant on coal, the UK has replaced coal with gas, as well as wind and other forms of renewable generation.

Of the 164mn toe (1,902 TWh) the UK consumed for energy in 2024, around 35mn toe (22%) was used as fuel for the generation of electricity – generating 413 TWh of electricity. Coal has seen the greatest reduction in usage in the generation of electricity, from 323 TWh (28mn toe) to being removed from the generation system, over the course of the 21st century to date, and will not be a part of the electricity generation mix going forward.

Figure 15 – Fuel consumption for electricity generation (mn tonnes of oil equivalent)



Coal

2024 saw the phase out of coal as a fuel in the UK. Indeed, the UK's cessation of coal-fired power generation in October 2024 marked a major milestone in the country's energy transition, ending a 142-year era of reliance on what was once the primary energy source in the UK. Coal remained consistently, until quite recently, a cornerstone source of energy consumption from 1880s through this millennia. Even in 2012 coal supplied nearly 20% of the UK's energy mix at 41mn toe, the recent peak caused by the imminent introduction of the LCPD, (Large Combustion Plant Directive) and subsequent carbon floor price which together drove coal off the power generation system.

The UK has imported the majority of it's coal consumption since 2003, with annual imports being on average equivalent 71% of coal demand until this year.

Nuclear

Additionally, the use of nuclear energy as a fuel for electricity generation has more than halved (-55%) from 19.6mn toe to 8.8mn toe over this same 25 year period. Although, because total consumption has dropped 30% from the start of the millennia, the proportion of nuclear used within our energy mix has only reduced from 8% in 2000 to 5% for the year 2024.

Supply

While fuel for electricity has decreased dramatically since 2000, total electricity consumption has seen as more gradual decline from 357 TWh in 2005 to 274 TWh in 2023. Although, total UK electricity consumption rose last year to approximately 280 TWh, electricity demand has fallen by 22% over the past 20 years. However, and similar to gas, albeit at a smaller scale, the UK has had to turn to importing power from overseas in order to meet domestic demand.

Figure 16 – UK electricity generation and electricity supplied (TWh per quarter)

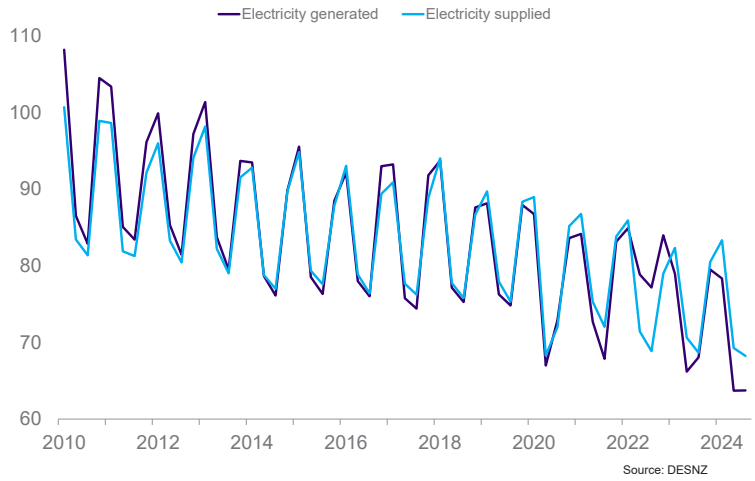
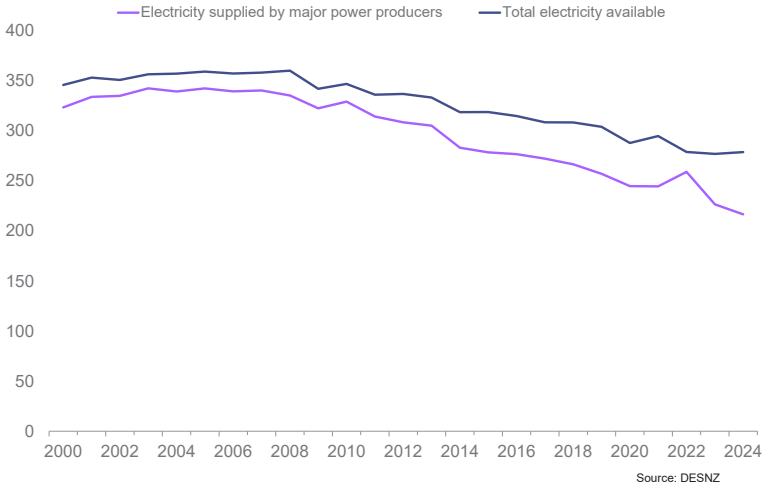


Figure 17 – Total electricity supplied by major power producers (MPPs) vs total electricity available from the public supply system (TWh)



UK electricity generation has fallen against the amount of electricity delivered to end-users (grid losses account for around 5-8% of lost generation to end-users during transmission and distribution) as net imports make a higher proportion of the total electricity supplied from around 2012 onwards.

The difference between the electricity available from the public supply system and that generated by major power producers, less own use, is made up from net imports and net purchases from other sources (the amount of electricity generated from autogenerators to the public system). 'Autogenerators' refers to companies which produce electricity as part of their manufacturing or other commercial activities, but whose main business is not electricity generation.

Looking ahead

As the energy mix is becoming more diverse, oil and gas are projected to meet a fifth of energy demand in 2050 as demand is increasingly electrified, according to the CCC Balanced Pathway Scenario. Despite that, oil and gas will provide the largest cumulative share of energy up to this point, accounting for half the total demand over the next 25 years.

Figure 18 – UK energy mix out to 2050 (mn tonnes of oil equivalent)

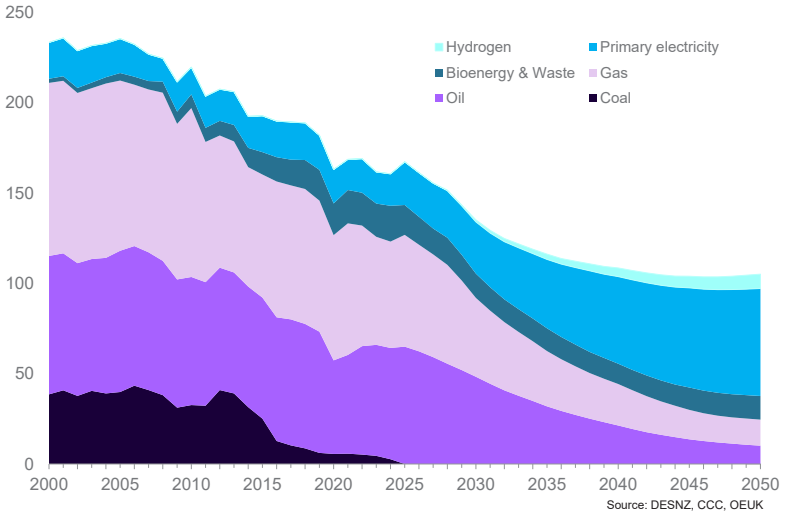
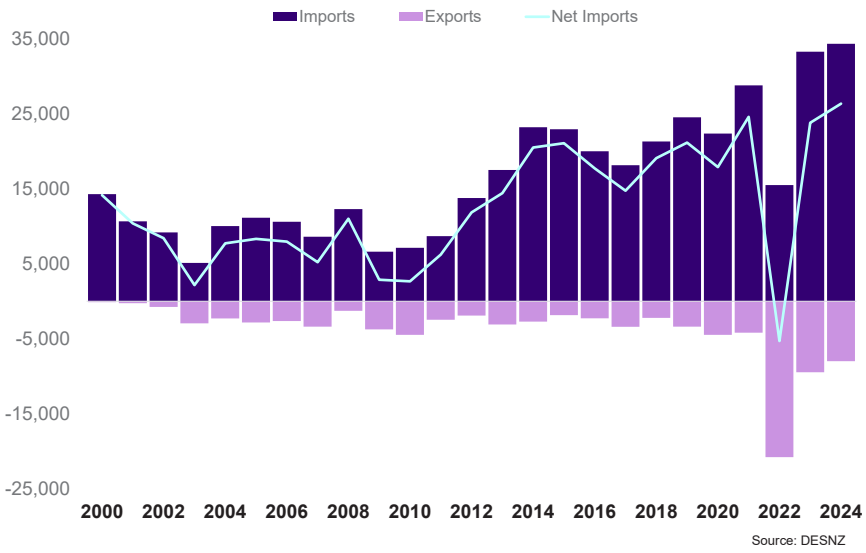


Figure 19 – UK electricity imports and exports 2000 – Q3 2024 (GWh)



Import gap

The UK has relied on net imports for over 40% of total fuel consumption in the last two consecutive years for the first time since 2014. As the import gap continues to widen, the UK is now reliant on imports for half its oil and gas supply, without continued investment in the basin, there is a potential for the import gap to exceed 75% by the turn of the decade. Expanding the current import gap could increase consumer bills and the UK's exposure to geopolitical events.

Electricity imports

Net imports of electricity have steadily increased from 2.7 TWh in 2010 to 26 TWh over the first three quarters of 2024. Increasing the proportion of which imports account for demand from 2-4% in the early 2000s to now around 10%. In 2022, the UK became a net exporter for the first time in more than 40 years with net exports of 5.3 TWh, primarily due to increased demand for exported electricity to France because of widespread outages in their nuclear fleet.

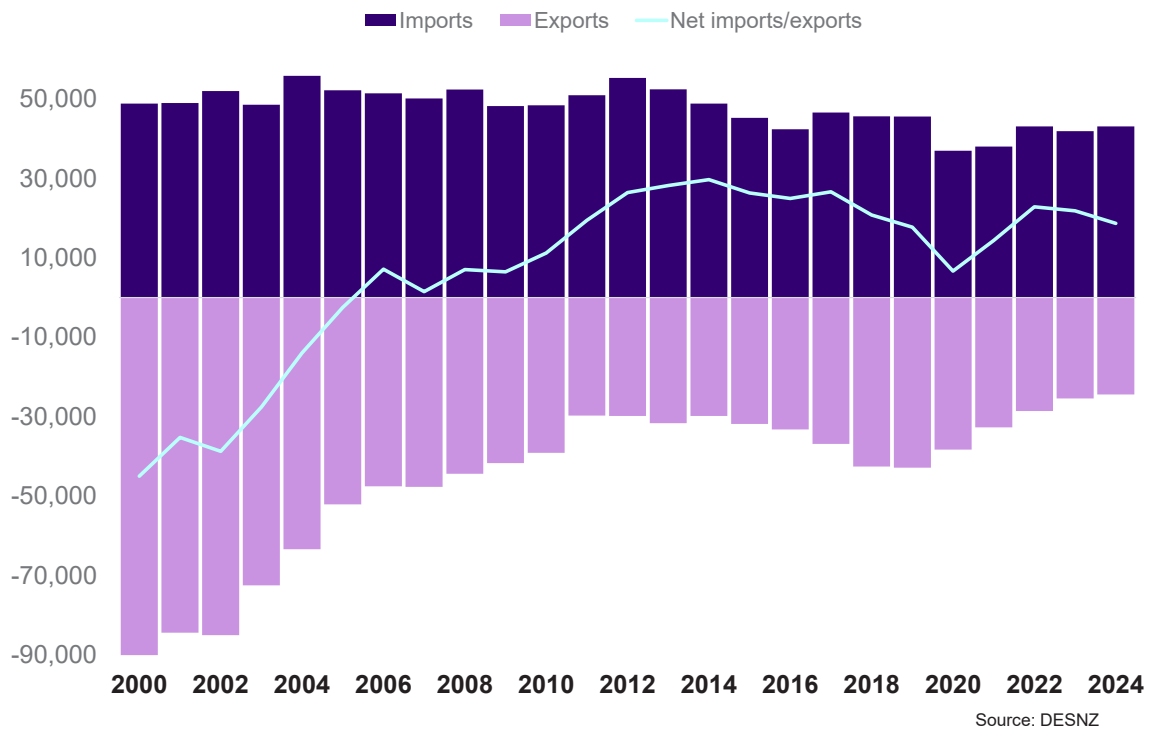
Oil imports

The UK has been a net importer of oil (crude, NGLs, process oils and petroleum products) since 2006. However, most imports have consisted of refined oil products as domestic refinery capacity has fallen, the UK has turned to exporting crude to mainland Europe, to take advantage of cheaper and more efficient refineries, before importing volumes back as refined product.

Gas imports

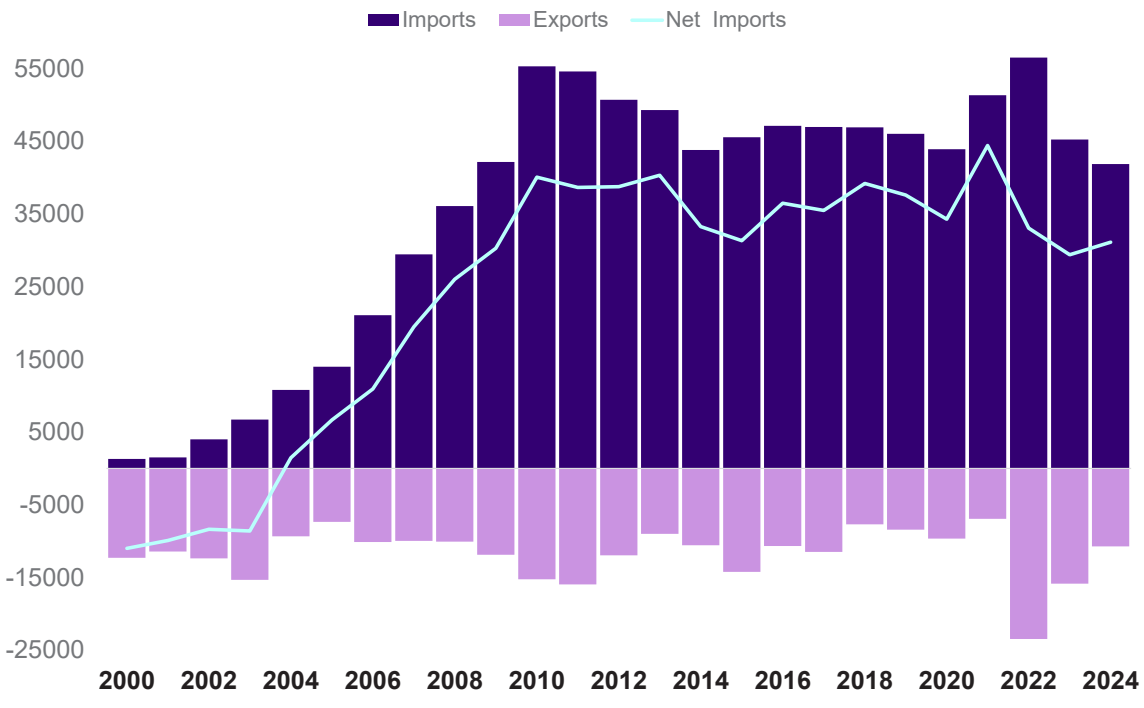
The UK has been importing around four times the amount of natural gas it exports per year since 2005. The UK acts as a transit hub for gas to Europe, through major LNG terminals, Isle of Grain and South Hook, and interconnector pipelines (IUK) to Belgium and (BBL) to Netherlands. The UK will become less important to EU supply security as German import capacity grows.

Figure 20 – UK oil imports and exports 2000 – 2024 (thousand tonnes)



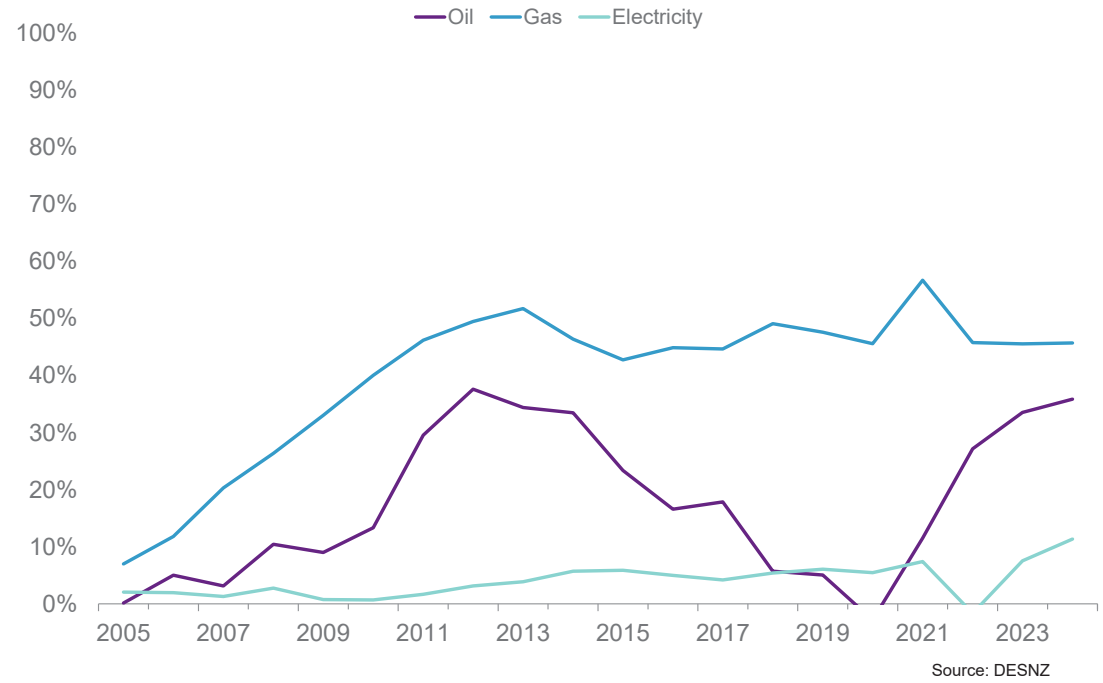
Source: DESNZ

Figure 21 – UK natural gas imports and exports 2000 – 2024 (mcm)



Source: DESNZ

Figure 22 – Net imports of Oil, Gas and Electricity as share of total demand (to Q3 2024)

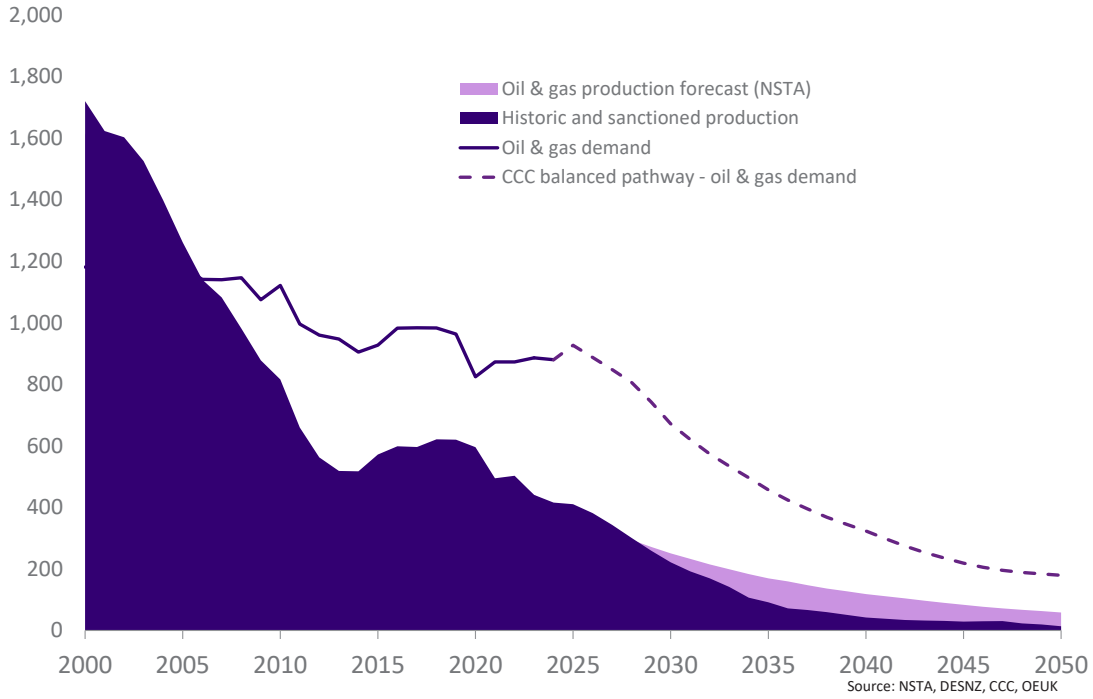


Since 2000, the UK has imported nearly 900bn cubic metres (bcm) of natural gas, about 27% of which came as LNG.

In recent years, LNG price have gone up sharply. The Russian invasion of Ukraine and subsequent sanctions on imports of gas from Russia to Europe has meant that Europe has had to expand its reliance on the LNG market. Resulting increases in domestic demand for LNG and increase competition from the Asian markets post-covid has meant that in recent years the global cost of LNG has significantly risen. As we look beyond 2025, competition with Asian markets will play a significant role in defining the UK's LNG pricing landscape.

Shipments of LNG are generally more expensive than pipeline gas due to process and transportation costs. While offering flexibility in gas supply, an increased reliance on LNG imports would increase consumer bills.

Figure 23 – Oil & gas production and consumption (mn barrels of oil equivalent)



UKCS production outlook

Oil and gas production in the UK is continuing to fall, since 2020 the output of the basin has declined at a rate of 9%/yr (33% cumulatively). Over the last two years this has accelerated to 11%, driven by increasing volatility in the fiscal regime and rising uncertainty on the future of the basin. By 2030, the NSTA predicts production could halve from today's amount, itself the lowest for four decades.

In 2020, UK operators projected that they could recover 5.5bn boe of oil and gas this decade. Five years on, these expectations have lost over a bn barrels of production, with expectations now being less than 4.5bn boe will be recovered from the UKCS this decade, reflecting a changing business environment, fiscal uncertainty and project delays.

A decline in domestic production is not unexpected in an economy making a concerted effort to transition to net zero, but the rates of decline are plummeting to the country's detriment. Slowing the decline to a reasonable 6%/yr could be achieved under the right business environment. This would require a strong alignment and collective commitment across the government and industry.

Oil and gas will continue to form a significant part of the UK's energy consumption mix in the coming decades with 13-15bn boe cumulative projected to be needed through to 2050. Making the most of the UK's oil and gas resources as part of a wider energy and industrial strategy is good for both the economy and the environment.

Figure 24a – Historic vs year-on-year NSTA production oil & gas projections (mn tonnes of oil equivalent)

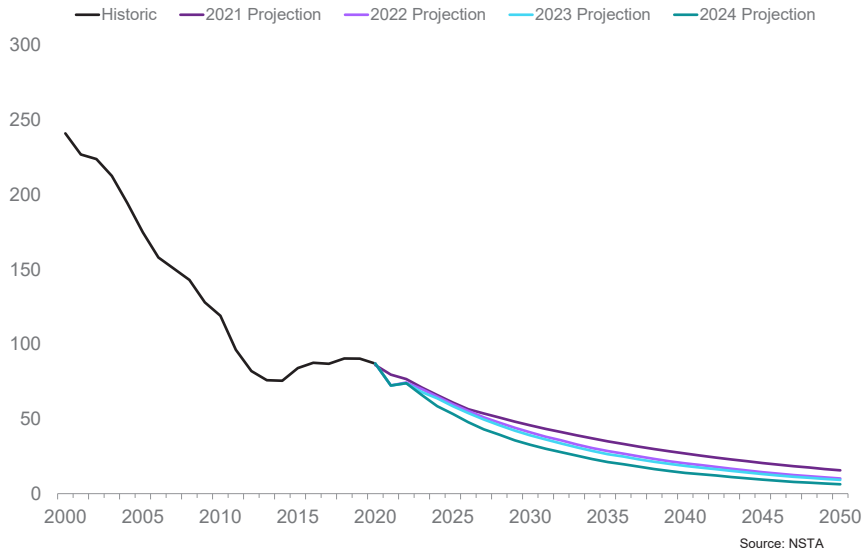
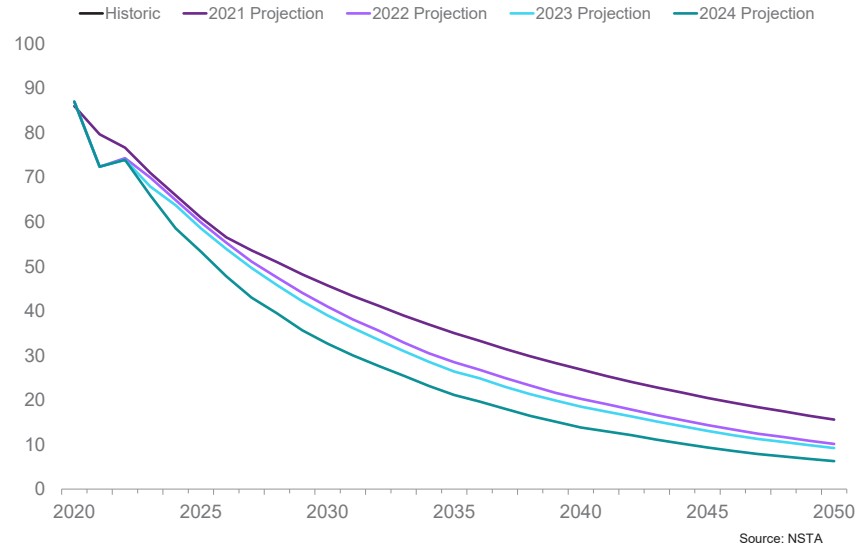


Figure 24b – NSTA Projections 2020-2050 (mn tonnes of oil equivalent)

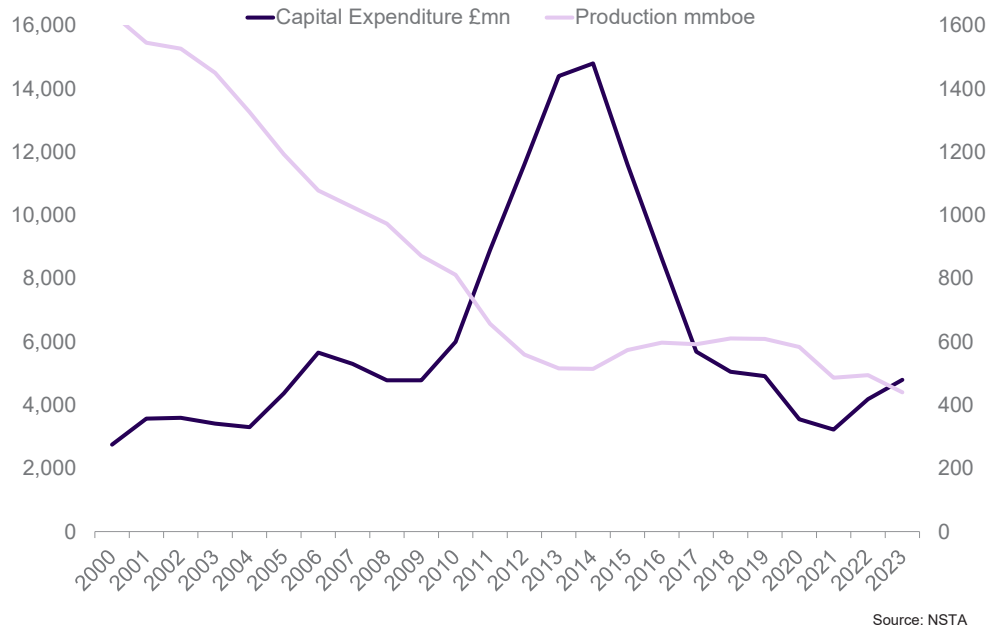


The NSTA publishes projections of UK oil and gas production twice annually to inform the fiscal forecasts produced by the Office for Budget Responsibility (OBR) and are based on the informed judgement of the NSTA. For the period 2025-2050, the NSTA has cut its projected production year-on-year from 863mn toe in their 2021 projections to 555mn toe in its October 2024 release, a write-down of 36%. Over 160mn toe of oil and nearly 130mn toe (151 bcm) of gas domestic production were lost over this period.

However, with new fields coming online in 2025, we could see a modest uptick in production for 2025 and 2026, temporarily stifling the decline profile.

Since 2024, much of the commentary on declining domestic production has revolved around the EPL. But the NSTA had been writing off considerable volumes of production before the tax change was announced.

Figure 25 – Historic nominal capital expenditure (£10's mn) and oil & gas production (mn boe)



Despite a steep decline in production over the last 25 years, capital investment has remained relatively strong, evidencing the industry's willingness to continue to push for development, despite the ongoing obstacle.

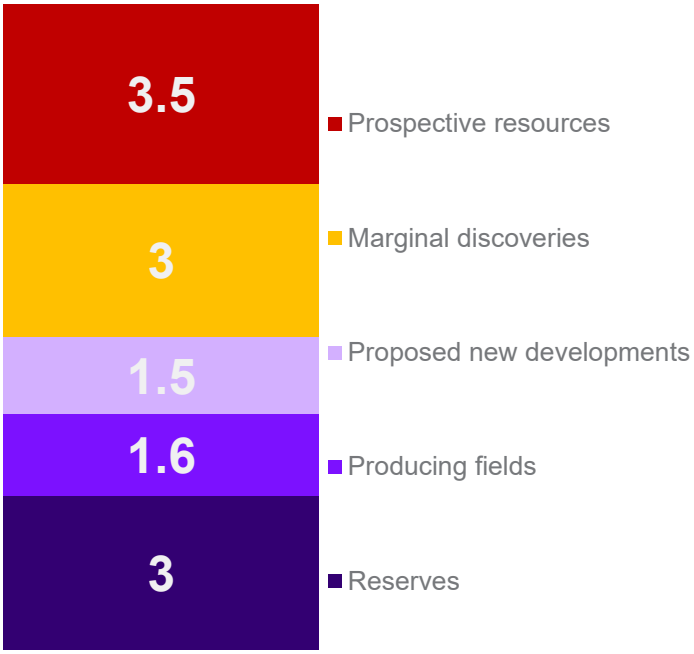
Opportunity available (resources)

Although the UKCS has been producing oil and gas for over 50 years new opportunities still remain. There are at least 12bn boe of potential hydrocarbon resource within the basin. The NSTA annual Reserves and Resources Report shows there are over 3bn boe of 2P reserves in the basin: this is oil and gas sitting within development plans that should be extracted through business-as-usual operations.

A further 6bn boe of contingent resources lie within the basin associated with either additional resource identified in producing fields, proposed new developments confirmed as technically viable and more challenging or smaller marginal discoveries.

An additional 3.5bn boe of undiscovered hydrocarbon prospective resources are identified as potential future exploration targets the UK could go after to prudently extend the life of the basin.

Figure 26 – NSTA 2P reserves, 2C contingent and mean prospective resources (projected as of 1st January 2025) (bn boe)



Source: NTSA

Under current plans, a further 4bn boe should be extracted from UKCS over the next few decades from a combination of existing reserves and identified resources in producing fields and new developments. However, the basin has the potential to deliver substantially more than this, from a continued programme of progressive stewardship.

Ongoing investment in existing fields and already identified developments could see recovery from the UKCS rise to above 5bn boe. If at the same time the UK continues to responsibly pursue exploration of new opportunities and the opening up of new opportunities, then remaining recovery could add another 1-2bn boe over the next three decades. Unlocking these additional resources, could add an additional £150bn of gross value to the UK economy, on top of the £200bn from current plans.

It is anticipated that the UK will consume at least 13-15bn boe over the next two decades through to 2050. Whilst we still have significant resources in place on the UK Continental Shelf, we will never be able to meet all the projected demand, however we can do much better than current forecast suggest. With the right long-term policies, we can support many more jobs within an industry built through decades of hard work and innovation. For this, it is essential to maximise the potential of our basin and our people and make the most of our resources we know we are going need, while we still have the capacity to do so.

154,000 jobs in the UK are directly or indirectly related to the offshore oil and gas sector, with 120,000 of those specifically within the oil and gas sector and a further 80,000 jobs are attributed as induced by the same industry and spread across communities all over the country. These 200,000 jobs provide an estimated gross value add (GVA) of £25bn/yr.

Implementing the necessary changes to reverse the trend in the current business environment is difficult but with a concerted effect or collaboration between government and industry it is achievable.

SECTION 6:

ENERGY PRICING IN FOCUS

The cost of energy is crucial to all of us. Commodity prices underpin energy costs but network costs, getting energy to consumers, and wider utility and carbon prices also play a meaningful part. The United Kingdom has faced enduring high energy prices in recent years with detrimental effects on both households and businesses.

Following the period of unprecedented volatility in the oil and gas markets after the invasion of Ukraine, prices have since been relatively steady for two years with oil trending downwards and gas upwards over the last 12 months, diverging trends as to be expected in an energy transitioning economy.

The cost of energy supplies for consumers (both industrial and domestic) in the UK are among the most expensive in the G20, when energy commodity prices are significantly lower.

6

Brent crude price

The Brent crude oil price remains the main price marker in Europe, with oil being fundamental to all aspects of the economy (transport, industry, heating, etc.). The last ten years have seen high levels of volatility, from near zero for a month or so during the pandemic to highs over $120/bbl in the fall out of the Russian invasion of Ukraine two years later. However, recent months have indicated a period of greater stability in brent crude prices, settling in the range of $70-90/bbl. Prices were relatively low between 2015-2017 due to the oil price crash in 2015 caused by oversupply, before a 2-year period of recovery prior with moderate stability averaging £68/bbl for 2018-19, to covid shutting down the economy. Post-covid prices surged to over £100/bbl in early 2022, influenced by supply distribution as a function of the Ukrainian invasion. Following 2022 highs, prices have steadily fallen albeit with considerable volatility reflecting ongoing economic uncertainty and disruptions in market equilibrium.

The value of the British pounds sterling against the US dollar has seen significant movement over the past 20 years. In 2008, the British pound crashed against the US dollar due to the global financial crisis, falling from $2 per £1 to around $1.4 per £1. The pound was able a recover somewhat and averaged around $1.55 per £1 until year end 2015.

The Brexit referendum took place in 2016 seeing the UK vote to leave the European Union (EU) and the pound falling against the dollar, due to uncertainties of the outcome both before the vote took place and after the results were confirmed.

Following a level of recovery post-Brexit, political instability and Brexit deal negotiations dragging on the exchange rate saw a prolonged period of decline into the early months of the covid-19 pandemic.

Figure 27 – Brent oil price GBP vs USD in Nominal terms

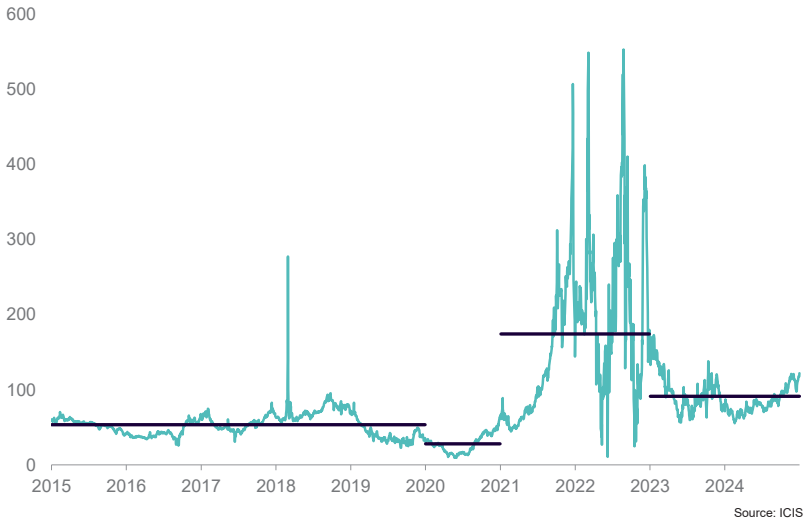
Figure 28 – GBP/USD historic exchange rate 12 Jan 2015 – 10 Mar 2025

The third significant, and most prolonged, drop in rate between the pound and dollar over this period came in late-2021 due to a number of factors including political instability putting off investors, and economic challenges of high inflation and cost-of-living crisis, against a backdrop of a bolstered US dollar becoming more attractive as the Federal Reserve aggressively raised interest rates.

In nominal terms oil prices have risen over the 10-year period, but taking inflation into account, the dollar value of oil has been pretty flat over the last decade. In pound terms however, the strengthening of the dollar against the pound has meant oil prices in pound-terms are above those in 2015.

Figure 29 – Brent oil price GBP vs USD in real-terms

Figure 30 – NBP nominal gas price (p/th), 4 notable period averages



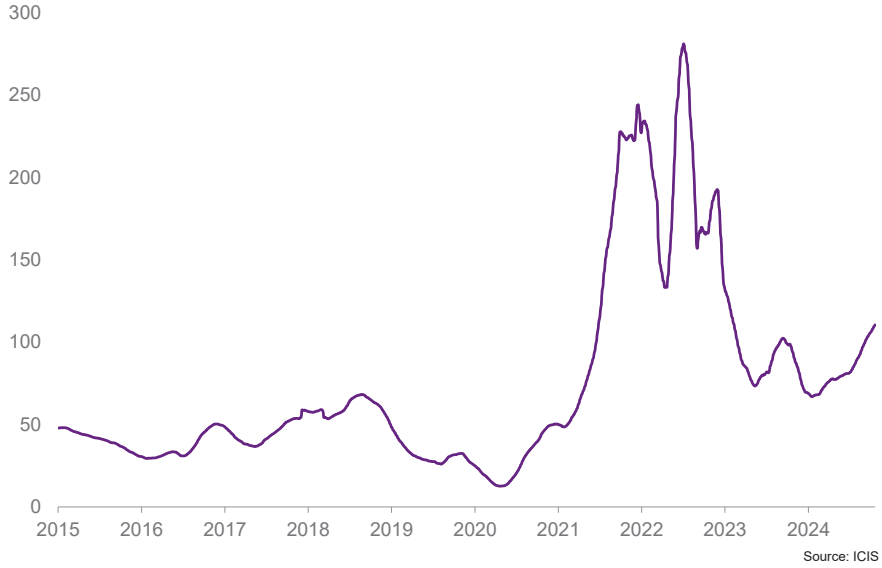
Brent has averaged £57/bbl over the last 10 years in real terms, very near where the price currently sits, despite two major geopolitical events, Brexit and Ukraine invasion, as well as a global oil consumption increase of nearly 11% over the same period. However, as the pound falls against the US dollar, oil will feel more expensive in the UK than in the US.

Gas (NBP) price

The price of natural gas, much like oil, is a key determinant of the UK economy. Some 73% of households in the UK use gas central heating; it is vital in backing up renewable electricity generation, and is used for around a third of the fuel used for generation; and many of our industrial processes rely on gas.

Gas has been the dominant fuel of choice for producing electricity for the past 30 years – due in no small part to reliability and flexibility (dispatchability). Gas prices also influence wholesale electricity prices as the most expensive unit of electricity needed to meet demand sets the overall market price.

Figure 31 – NBP nominal gas price 3-month rolling average (p/th)



UK gas averaged 84 pence per therm (p/th) last year for day-ahead delivery at the national balancing point (NBP), 15% lower than 2023 (99 p/th) and 59% lower than 2022 (204 p/th) but prices are more than three times higher than they were in 2020.

Spikes are seen in the NBP price on rare occasions where price shocks occur due to real concerns on the shortage of supply. Smoothing out the gas price profile using a three-month rolling average illustrates the NBP price movements better over time through seasonal and long-term supply and demand dynamics.

For the five-year period 2015-2019 the UK saw relatively stable wholesale gas prices average 43 p/th in real terms (inflation-adjusted cost), before dropping to an average 25 p/th through 2020 due to the economic shutdown brought on by coronavirus. 2021 and 2022 saw unprecedented market turbulence and with it an average wholesale price of 160 p/th for that two-calendar-year period, followed by 91 p/th average prices observed the past two years.

Gas storage capacity reduces exposure to short term price volatility and is a strategy for managing seasonal fluctuations in gas prices as well as trading. By purchasing and storing gas during summer months when prices are typically lower, reserves are built and released during winter months when prices rise in response to higher demand.

Figure 32 – Gas storage capacity and utilisation, across Europe; UK ranks 14th, March 2025 (TWh)

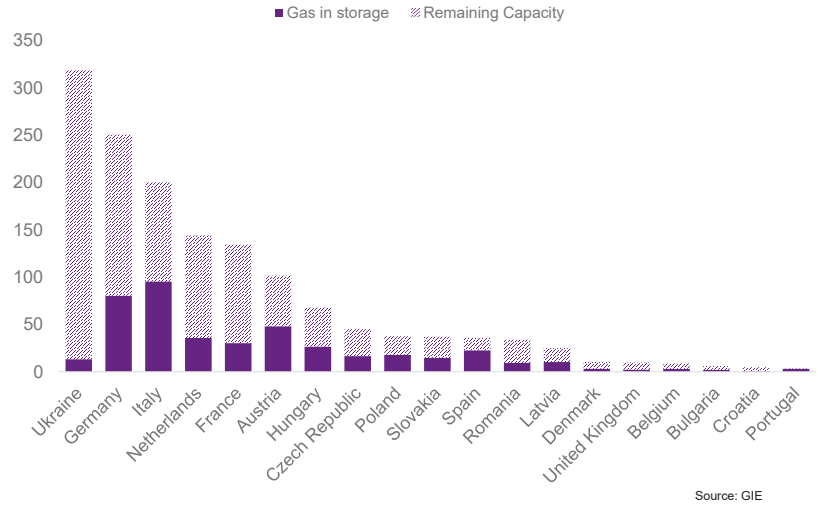
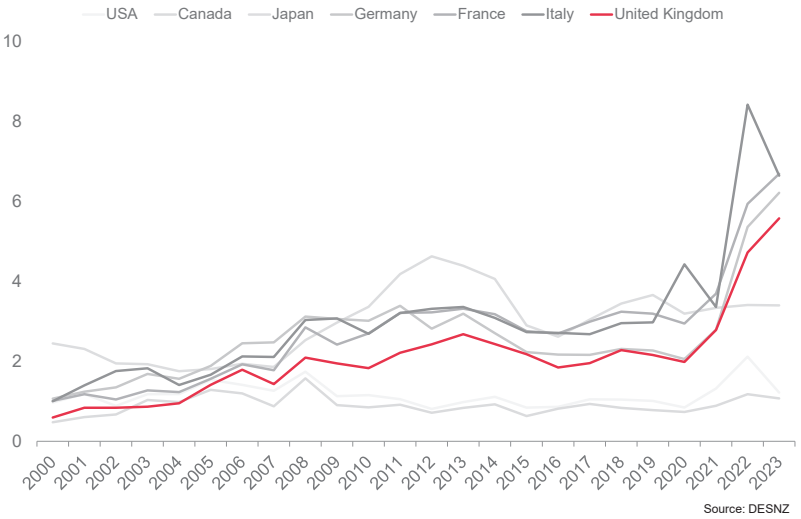


Figure 33 – Real terms (2023 prices) industrial gas prices across G7 countries (p/kWh)



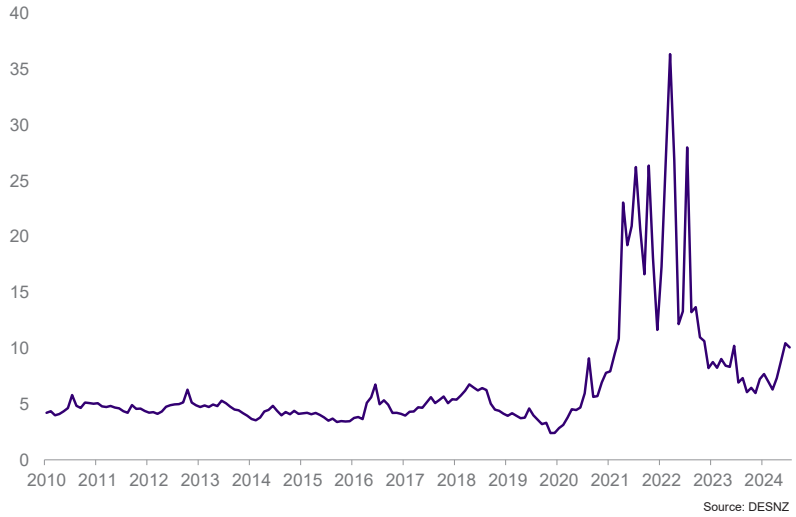
Storage is an important means to help balance supply and demand over the year, and to meet short-term demand peaks when supplies are under high pressure, taking some sting out of the price.

The UK has much less storage than other European countries, on both an absolute and per capita basis. A lack of storage was less consequential in the past as the Southern North Sea (SNS) could increase production and readily meet gas demand when required throughout the year. As production capacity in the basin has declined, most gas fields are now operating at maximum capacity and are unable to ramp-up production in support of swings in demand.

Long-term gas storage was prioritised in the past as a means to ensure supply in winter months. However, the importance of long-term gas storage has diminished in recent years and the UK now relies on imports via pipelines and LNG terminals. With rising competition for LNG and pipeline imports, the UK's storage capacity is beginning to matter more and the lack of storage is beginning to hurt.

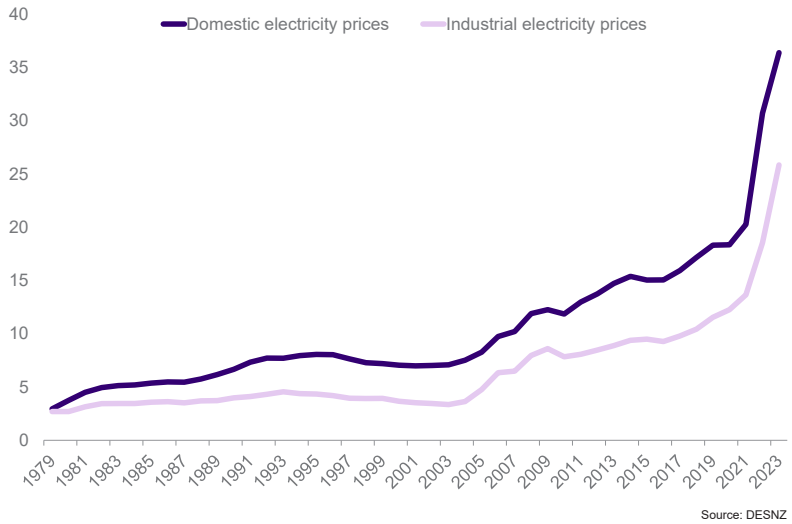
Increasing domestic production of natural gas would lead to lower gas prices for the end consumer, for both industry and households. Countries like the USA, which are predominately self-sufficient with high levels of domestic production, benefit from lower gas prices compared to import-dependent nations, as the UK has increasingly become over the past 20 years.

Figure 34 – Wholesale electricity price (Day-ahead baseload contracts – monthly average) (p/kWh)



Source: DESNZ

Figure 35 – Industrial and domestic electricity prices (p/kWh) in the United Kingdom over 45 years



Source: DESNZ

Electricity price

The wholesale price of electricity makes up nearly half of the total household bill consumers face. Electricity price, much like gas, experienced massive increases as the economy reopened through 2021 and Russia invaded Ukraine in early 2022. The monthly average price was consistently above £100/MWh from August 2021 to April 2023, averaging £192/MWh over the period.

Electricity prices in the UK have risen significantly over the past two decades, driven by market volatility, policy changes, compounding green levies, and a shifting in generation mix and costs as the country transitions towards net zero, against a macroeconomic backdrop of high interest rates and inflation. These domestic influences are worsened by global supply chain distributions and geopolitical events inducing fuel supply shortages.

Industrial electricity prices have increased nearly 10-fold, while domestic electricity prices have increased more than 12-fold.

Figure 36 – Real terms (2023 prices) industrial electricity prices in G7 countries (p/kWh)

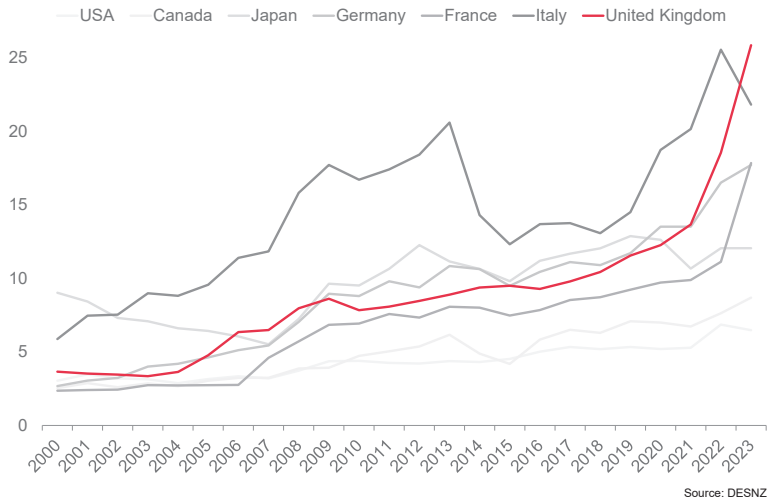
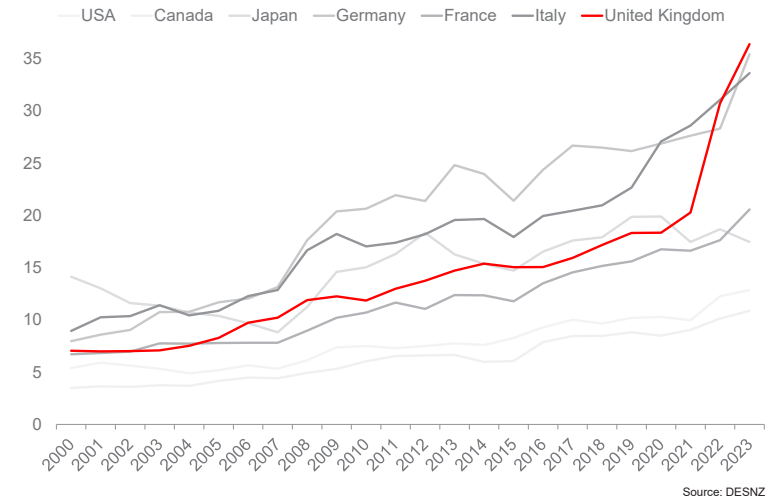


Figure 37 – Real terms (2023 prices) domestic electricity prices in G7 countries (p/kWh)



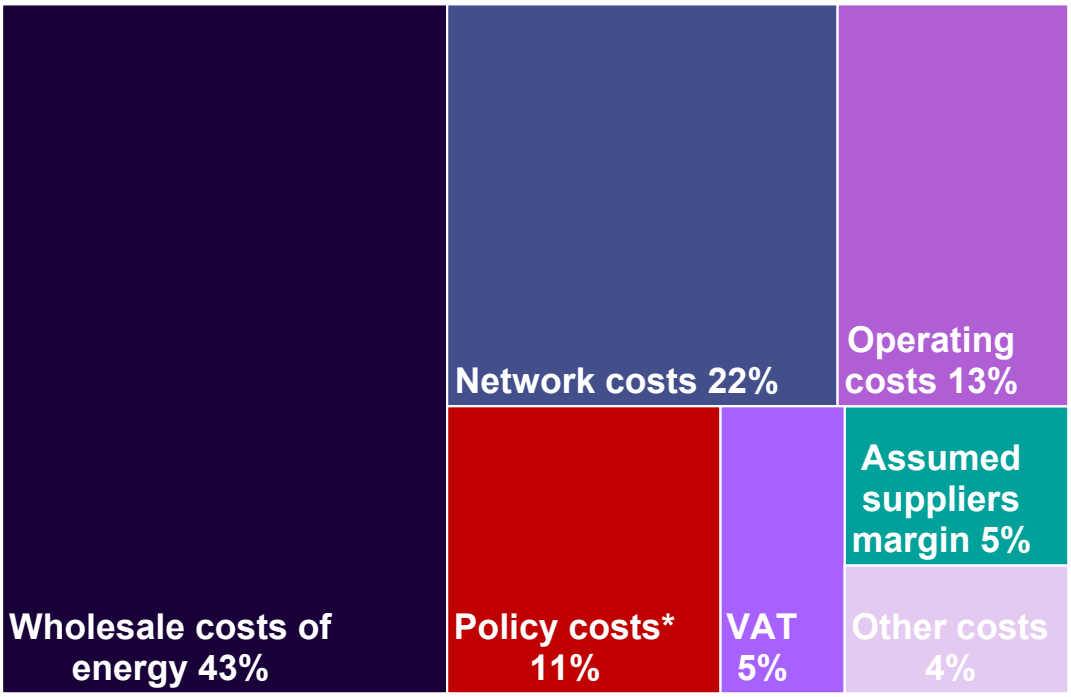
Industrial & domestic consumer prices

Electricity prices borne by industry have gone up from 3.7 p/kWh in 2000 to 25.9 p/kWh in 2023, in real terms to 2023 pricing. In doing so, the UK has moved from relatively normal pricing to the most expensive when compared to Europe, Asia and North America.

At the start of the millennium, the UK was quite averagely placed for electricity prices in comparison to other countries. In comparison to G7 countries electricity costs per cheaper here than in both Italy and Japan and was only marginally more expensive the USA. Ten years on, a kilowatt-hour in Great Britain was lower than Italy, Japan or Germany. The UK has since surged beyond all other countries and is now the most expensive place, not only in the G7 but against all other comparative countries, for electricity price.

Similarly, domestic prices of electricity has followed the same pattern.

Figure 38 – October to December 2024 cost breakdown



Price cap

The UK energy price cap covers utility bills for both gas and power for domestic users and applied for at least a quarter. It limits the maximum amount energy suppliers can charge customers on standard variable tariffs for each kilowatt-hour, aims to ensure fair pricing for households not on fixed-rate deals, protecting customers from excessive charges. The cap is reviewed and adjusted quarterly based upon factors such as wholesale energy costs, network maintenance expenses, and policy costs.

In October 2024, the cap was raised by 10%, setting the average dual-fuel energy bill at £1,717/yr, given average electricity consumption. In January 2025, the cap was raised an additional 1.2% bringing the annual typical household bill to £1,738. In February 2025, the energy price cap was raised an additional 6% to £1,849.

As Ofgem continue to increase the price cap for consumers, although it is designed to protect customers from exorbitant prices, it comes with some risks. If it is set too low without allowance for suppliers to cover their costs, it can create financial pressures on the suppliers. As a consequence of any profit cap, investment in the sector can be deterred with a higher risk of suppliers exiting the market, resulting in reduced competition for customers. This reduced competition could lead to supply shortages and increased instability in the market. These pressures in combination could subsequently force the price cap to be removed, with customers then exposed to unpredictable price spikes and a less stabilised market than what would have been in absence of a price cap system.

Grid upgrade

An urgent priority for National Grid and the transmission operators is the grid infrastructure, which was designed for centralised power generation, not the intermittent generation of renewables. Or the increasing loads incurred by the country's transition away from fossil fuels, as renewable sources of generation are rapidly enrolled into the system.

Bottlenecks in transmission and distribution networks are causing constraints on renewable deployment and inefficient grid balancing. Delays in grid connection times have been an issue, growing more and more prevalent, with some projects confronting waiting times of over a decade to connect.

Insufficient grid infrastructure is a key component of high electricity prices in the UK. Upgrading connections will allow electricity to flow where it is needed and help end the practice of sparsely located wind farms being paid to switch off while more centrally located gas turbines continue to generate power.

Upgrading the UK's electricity grid is reported to cost up to £77bn by 2030, with National Grid alone investing £35bn. Offsetting the magnitude of capital required for this major infrastructure project, is that billions of pounds are expected to be saved in constraint costs, create thousands of jobs, and contribute up to £11bn of gross value added to the economy.

A more flexible and decentralised grid will be key to managing costs, with the potential to reduce end-user electricity prices, by minimising curtailment and optimising the use of cheap renewable energy particularly as offshore wind booms over the coming decades.

Merit order and the marginal cost of electricity

The marginal cost is the additional variable cost incurred in producing one more unit of electricity, with the existing equipment in place.

In electricity markets, demand during a day is intrinsically variable and can be covered by a diverse mix of technologies with broad variations in terms of capital, variable and marginal costs, and generation flexibility.

Generally, inflexible power plants serve as the baseload demand (minimum electricity demand in a market), running at a constant output. While renewable sources can provide baseload power only when available.

Intermediate demand, above baseload but lower than peak, can be covered by more flexible combined cycle gas turbines (CCGT). Peak demand is covered by flexible power plants such as open cycle gas turbines (OCGT) or oil-fired plants; which can start and stop at short notice, providing supply flexibility.

Merit order is the ranking of the available electrical generation technologies based on ascending order of their bid from lowest to highest, creating an aggregate supply (merit order) curve. Power plants are then dispatched in order of their marginal cost.

Power plant operators generate electricity for a price which covers the cost of the next MWh of electricity produced i.e. the marginal cost. Renewables and nuclear can offer a lower price and are therefore called upon more often than those with higher marginal costs such as gas-fired power plants.

The UK uses a marginal pricing system in its wholesale electricity market. The price is set by the marginal cost of the most expensive plant required to meet demand at a given time.

The UK's commitment to net-zero emissions means carbon costs are increasingly factored into the marginal cost of fossil fuel plants, making renewables and nuclear more competitive within the merit order.

Contracts for Difference (CfD's)

It is important to note that many renewable projects in the UK are supported by CfD's, guaranteeing a fixed price per MWh for their electricity generation, called the strike price. If the wholesale price of electricity is below the strike price, the government pays the difference to the generator; if the wholesale price is higher than the strike price, the generator pays the difference back to the government. This mechanism is widely used as it reduces revenue volatility for the generator without discouraging generation at any wholesale prices, as the marginal costs of operation for a windfarm are low enough that profit can be made even at low prices.

Total payments made to renewable energy project developers through the CfD scheme for the period 2023-24 was nearly £2bn. The cumulative net value of CfD payments from when the scheme started to the end of August 2024 is £8.9bn.

	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Forecast (£ billion)	1.8	2.3	2.2	2.8	2.7	2.6	3.1

Table 2 – Outturn and forecast CfD payments – October 2024 Economic and fiscal outlook

Green levies

The OBR October Forecast projects receipts from environmental levies are expected to be £12.0bn for the year 2024-25. Receipts for environmental levies were £9.9bn for the year 2023-24.

	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Environmental levies (£ billion)	9.9	12.0	12.9	15.2	14.3	14.4	14.8

Table 3 – OBR Economic and fiscal outlook – October 2024, Environmental Levies

In the UK, green levies are policies which, directly or indirectly, add additional charges included in energy (typically electricity) bills aimed at supporting government energy policies to drive the low carbon objective.

In recent years, policy costs have accounted for around 10-15% of the typical household electricity bill, and a much smaller proportion of gas bills.

The policy costs cover:

- Renewables Obligation (RO): supports large scale renewable generation, paid on electricity bills
- Feed-in Tariff (FiT): supports small scale renewable generation, paid on electricity bills
- Contracts for Difference (CfD): supports large scale low carbon generation, paid on electricity bills
- Energy Company Obligation (ECO): supports energy efficiency measures for fuel poor/vulnerable households, paid on gas and electricity bills
- Warm Homes Discount: provides a discount to vulnerable households, paid on gas and electricity bills
- Assistance for Areas with High Electricity Distribution Costs: paid on electricity bills
- Green Gas Levy: funds the Green Gas Support Scheme, paid on gas bills

Cost drivers for consumers

The offshore energy industry welcomes the drive to switch to low carbon power, but it has come with a very high cost and is unlikely to significantly cut domestic energy bills for some time. There is a very high capital investment in new energy resources, such as offshore windfarms, and transmission infrastructure that will need to be paid over time. For this reason the government is consulting on longer CfD terms. Additionally, it will take significant time and investment by households to repurpose domestic energy consumption from gas to electricity supplies.

Energy prices are of vital importance for both households and the broader economy, from cost of living to the successful operations and growth of businesses. Energy prices, gas and especially electricity, have been increasing in the UK at an unsustainable pace, much faster than other countries with comparable economies. More broadly, energy prices influence inflation, economic growth, and national competitiveness. It is a fundamental issue for policymakers to prioritise.

SECTION 7:

OPPORTUNITIES THE OLD AND THE NEW

7

With an attractive investment environment and supportive government policy, UK offshore energy companies could invest £200bn over the next ten years alone to accelerate development of fixed and floating offshore wind, develop carbon storage at scale, unlock the hydrogen economy, while producing homegrown oil and gas, and meeting our decommissioning commitments.

Long-term clear business models are needed to deliver a self-sustaining low carbon energy sector at pace and to scale, that allow for an appropriate balance of risk and reward. Price support mechanisms, such as CfD have a crucial role to play in scaling offshore wind, carbon storage and hydrogen but investors need clarity on such support mechanisms. The national goal should be to grow emerging sectors at pace at breakeven for Treasury, ending subsidies and delivering wide economic value.

Oil and gas

With the projected demand for oil and gas to 2050 nearly quadruple what the UK is currently on track to produce, and with billions of barrels of additional resource remaining in the basin outside of ongoing production and development plans, significant opportunities exist to pursue on the UKCS.

The government should take all possible actions aiming to eliminate LNG from our energy consumption mix. This can be achievable with the right policies in place to support increased domestic production of natural gas, as discussed throughout this report. Additionally, the UK could move to fully using UKCS produced gas for the generation of electricity.

Offshore Wind

The UK has the second-largest offshore wind pipeline globally. An estimated 2.6 GW of capacity is expected to come online in 2025, adding over 1,800 turbines to the grid. This reflects the country's strong commitment to offshore wind development. With an advanced project pipeline compared to other nations, the key challenge now lies in optimising processes to enhance efficiency across the supply chain and ensure the seamless delivery of electricity.

The UK's regulatory framework is continuously evolving across all aspects of the energy sector. With over 700 GW of electricity capacity awaiting grid connection, offshore wind farms do not receive any preferential treatment. The ageing grid infrastructure presents challenges in integrating renewable energy sources, and NESO is undertaking a connections reform moving from "first in, first serve" to "first ready, first needed, first served". The grid system needs to be upgraded to integrate the decentralised capacity of wind, solar and storage battery, significant grid upgrades are required. NESO recommends investing over £60bn by 2030 in both onshore and offshore infrastructure to develop a network capable of supporting this diverse energy mix.

The seabed is becoming increasingly congested as offshore wind farms continue to scale up. With a substantial number of installed platforms in the North Sea, marine spatial planning is emerging as a critical issue which can worsen with the further growth of CCS offshore. There is a growing need for solutions to optimise the use of marine space efficiently and sustainably alongside other users of the sea: trade route, fishing activities and the public.

Undoubtedly, there is significant potential for the offshore wind supply chain, with the sector expected to invest £8-10bn in the UK in 2025, primarily focused on engineering, procurement, and construction (EPC). However, a large proportion of offshore wind farm resources and components are currently imported from Europe and China. The supply chain is dominated by foreign companies, making the UK heavily reliant on imports. Nevertheless, this does not mean the UK cannot enhance its supply chain competitiveness. According to Rystad Energy, 73% of floating offshore wind spend and 66% of fixed wind

spend to 2040 could be targeted by UK supply chain companies. The scale of investment and capability clearly indicates a substantial opportunity, provided the right strategy is in place. To achieve this, the government is introducing a Clean Industry Bonus (CIB) in the upcoming CfD Allocation Round 7 (AR7). This initiative aims to encourage greater collaboration between offshore wind projects and the domestic supply chain across all aspects of development with early investment easing the time pressure for supply chain.

The CIB is a mechanism to emplace an obligation on developers to commit a minimum investment in the supply chain prior to CfD auction. Developers going beyond minimum standards could obtain a bonus in terms of a financial reward. Under the new obligations, all developers must commit to meeting these standards. The standard of investment varies by project type, with fixed-bottom and floating offshore wind projects eligible for £100mn and £50mn, per GW of capacity, respectively. This could address a key limitation of the existing framework, which prioritises the lowest price and has historically constrained supply chain development. By unlocking additional funding, the CIB is expected to drive cleaner and more impactful auctions for the supply chain.

The UK currently boasts the largest floating wind pipeline in the world, with capacity up to 9.4 GW by 2035. While floating offshore wind technology is still in the maturation phase, it offers the UK an opportunity to become an innovator and market leader in this emerging sector. The UK already hosts the world's first commercial floating wind project, the Hywind Scotland wind farm, which began operations in 2017. The potential for floating offshore wind is vast, particularly due to its ability to access deeper waters, which alleviates the problem of a congested seabed while providing a significant boost to the UK supply chain and economy. A recent OWIC report estimates that the floating offshore wind sector could generate £38bn in GVA in the UK by 2050 which could sustain 27,000 jobs per year between 2030 to 2050. Furthermore, Green Volt, the first commercial-scale floating offshore wind farm in Europe, secured a 15-years CfD in AR6, reinforcing the financial viability of the project. This development alone is expected to create over 2,800 jobs during construction, with a £2.5bn capital investment, marking a key milestone in solidifying the UK's position in the floating offshore wind market.

Carbon Capture and Storage (CCS)

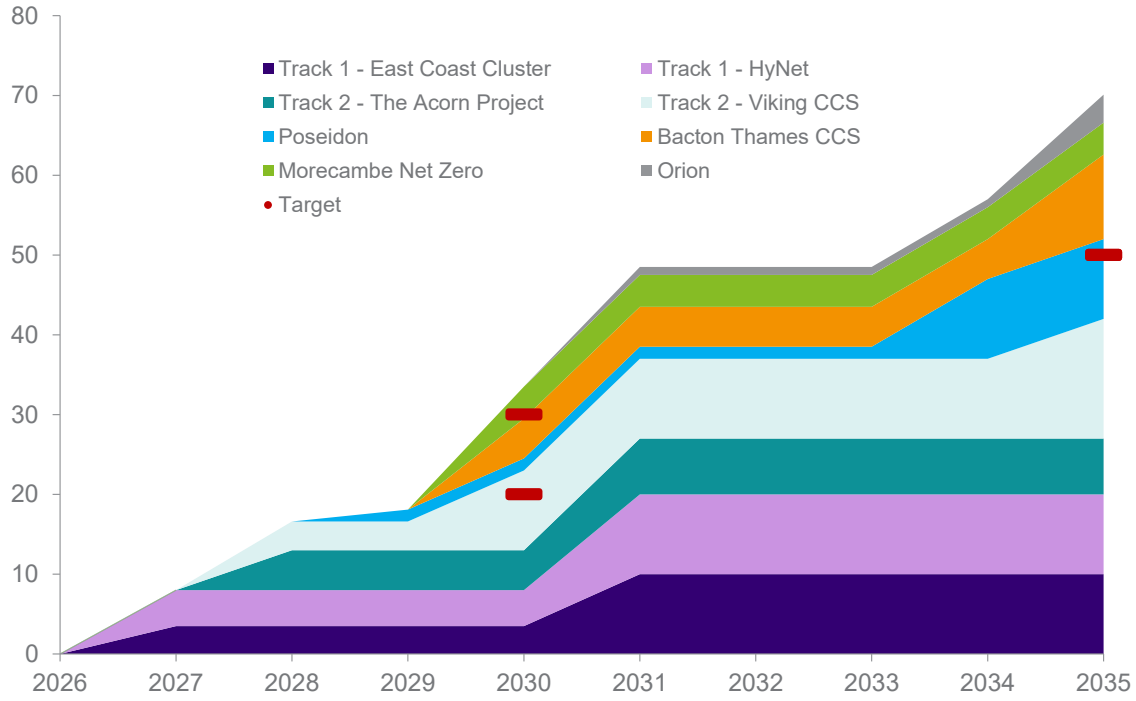
With the largest offshore CO_2 storage potential in Europe (78 Gigatonnes), a rich history of production on the UKCS and a world-class supply chain, the UK has all the capabilities to house a thriving CCS sector.

The successful deployment of CCS technologies in the UK is essential for the country to reach net zero. It is needed to decarbonise hard-to-abate industrial sectors, like cement and lime production, protecting around 100,000 jobs. They will also play a significant role in the UK's energy security as an enabler of low-carbon dispatchable power generation and hydrogen production. Supporting an increasingly intermittent renewables-based power system.

In October 2024, the UK's CCS market received a huge boost, as £21.7bn, spread over the next 25 years, was allocated to the Track-1 clusters East Coast Cluster and HyNet, preceding an FID taken on the East Coast Cluster in December. Securing this investment kickstarted the UK's CCS sector, decarbonising industry and promoting the UK as a market leader in CCS development.

The Track-1 clusters aim to capture and store 8.5mn tonnes of CO_2 per annum by 2030, some way short of the 20-30mn tonnes target. Continued investment from the government and private sector will be required to actualise the UK's CCS ambitions. This includes funding for Track-2 clusters and granting access to business models for projects outside of the cluster sequencing process such as Morecambe Net Zero (MNZ) and Bacton Thames CCS cluster projects. Securing the required investment for projects will only be achievable if the UK is able to present a stable and predictable environment to investors.

Figure 39 – UK CCS capacity possible outlook (mn tonnes/yr)



Source: Offshore Energies UK

The total pipeline of CO_2 storage projects in the UK will likely outgrow domestic demand, opening the door for international imports of CO_2 from European nations. To develop a cross-border market for CO_2 several blockers will need to be addressed. These include the lack of mutual recognition between UK & EU emissions trading schemes, the inability to trade CO_2 in the absence of a bilateral agreement under the current London Protocol, lack of mutual CCS standards, limited infrastructure and uncertainty about long-term liabilities of transport and storage. Unlocking cross-border transportation of CO_2 will:

1. **Expand the UK's carbon storage market**
2. **Reduce the cost of storage for the UK and Europe**
3. **Generate additional revenue for UK store operators, accelerating the transition to a self-sustaining CCS market**

Hydrogen

Low carbon hydrogen has potential to support the decarbonisation efforts of industry, power and transport. There has however, been slow progress in the development of hydrogen production capabilities in the UK. This is partially due to factors such as cost, lack of demand, supply chain uncertainties and unaffirmed policies.

The UK government are supporting a twin track approach, where both CCS-enabled hydrogen and electrolytic hydrogen production are used to reach targets of 10 GW by 2030. According to HydrogenUK, if this production capacity can be achieved, the UK has the potential to add £7bn/yr in terms of GVA by 2030.

The current pipeline of projects means that the UK could have the capacity to achieve the government's target by 2028. However, due to issues around the cost of the deployment of hydrogen, many of these projects remain in the concept stage. It is therefore unlikely that the UK will achieve its 2030 targets.

To support the production of low carbon hydrogen, the government have launched Hydrogen Allocation Rounds (HAR), auction rounds to for projects to compete for government support from the Hydrogen Production Business Model (HPBM). The HARs were intended to operate in a similar manner to the CfD scheme and provide funding support to successful hydrogen projects across the UK in a yearly auction. Table 5 outlines the 11 successful applicants from the first round of funding (HAR1).

Although the first round of funding has been awarded, only three of the eleven projects have signed contracts. The proposed mechanism to fund the business model is likely to be a levy on gas shippers starting in 2027. The details of the mechanism are still outstanding and they need to be clarified to provide certainty over how future rounds will be funded.

Hydrogen Allocation Round	MW	Launch Date	Contract Award Date
HAR1	125	2023	2024/2025
HAR2	850	2023	2025
HAR3	750	2025	2026
HAR4	750	2026	2027
HAR5	TBA	2027	2028
HAR6	TBA	2028	2029
HAR7	TBA	2029	2030

Table 4 – Hydrogen Allocation Round Pipeline

Project	Developer	Location	Capacity (MW)
Barrow Green Hydrogen	Carlton Power	North West	21
Bradford Low Carbon Hydrogen	Hygen	Yorkshire	24.5
Cromarty Hydrogen	Scottish Power and Storegga	Scotland	10.6
Green Hydrogen 3	HYRO	South East	10.6
HyBont	Marubeni Europower	Wales	5.2
HyMarnham	JG Pears and GeoPura	East Midlands	9.3
Langage Green Hydrogen	Carlton Power	South West	7
Tees Green Hydrogen	EDF Renewables Hydrogen	North East	5.2
Trafford Green Hydrogen	Carlton Power	North West	10.5
West Wales Hydrogen	H2 Energy and Trafigura	Wales	14.2
Whitelee Green Hydrogen	Scottish Power	Scotland	7.1

Table 5 – Successful HAR1 Projects

The second hydrogen allocation round aims to provide funding for 875 MW of hydrogen production capacity. This was launched at the end of 2023 and applications for this allocation round has since closed with HAR2 being oversubscribed. This shows that there is a good pipeline of electrolytic hydrogen projects and that there is an increasing development of the twin track approach. To give the supply chain more certainty around planning of investment and resources, the government has announced that allocation rounds from HAR2 onwards will need to show that the projects will be operational within three years.

Geothermal

Geothermal energy is a valuable resource which could be further utilised to help decarbonise the heating sector and as a source of renewable energy in the transition to net zero.

Geothermal sources including ground source heat pumps (GSHPs), deep geothermal direct-use and mine geothermal schemes supplied 0.3% of the UK's heat demand in 2021, using only a fraction of the UK's estimated accessible geothermal heat. In the UK, geothermal energy is not yet recognised as a natural resource, unlike other natural resources such as water or gas. There is no bespoke regulatory system for the licensing, ownership and management of geothermal heat (geothermal developments are regulated, and the regulations governing them vary by the type of heat extraction technology used).

Geothermal provides the opportunity for improved energy security, as the technology is available to generate at all times of the day and year, reducing reliance on imports. Building out the technology will support job creation and economic growth; Germany, a country geologically similar to the UK, has created a significant number of jobs across geothermal projects. Additionally, a significantly reduction in carbon emissions could be achieved by providing industrial scale heat source and local heat networks to all 1.5mn new homes under Labours Manifesto pledge.

In late-2024, OEUK expanded its remit to include geothermal within its membership. With members focusing upon, though pre-dominantly onshore, geothermal energy as an alternative to solely relying on electrification. UK geothermal opportunities provide a significant contribution to national CO_2 reductions and is estimated to have a 10 GW potential for heating.

Renewable geothermal energy has three primary roles: heat generation, power generation & mineral extraction. Primarily the opportunity for the UK is in heat generation, with a few regional exceptions such as southwest England where opportunities for both power generation and mineral extraction exist. These benefits have been demonstrated in the United States, France, Germany, Belgium and the Netherlands, among others. The National Geothermal Centre has reported that geothermal expansion in the UK has the potential to create 50,000 jobs for the future and result in an annual avoidance of 10mn tonnes of CO_2 emissions.

In order to make the most of the Geothermal opportunity OEUK recommends:

- Introducing a minimum market price to establish a base case with a regressive nature to ensure projects do not fail early and equally must establish themselves at pace
- Developing UK Government policy that supports the scale up of decentralised energy, including the role for geothermal in this
- Underpinning these with UK published targets that rewards the regions on successful implementation of projects with public data sharing promoted

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

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

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