

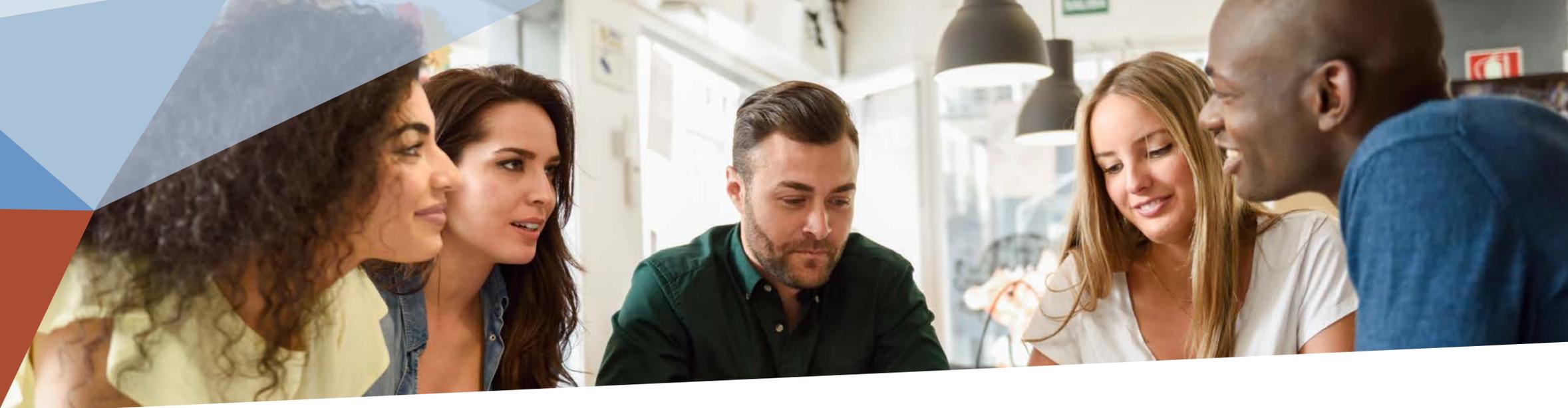
Powering up the Workforce

The future of the UK
offshore energy workforce

September 2023

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Executive summary

“Key will be investment in UK capabilities to deliver a fast-growing programme of capital projects”

The pursuit of net zero targets by the UK and devolved governments could be transformative for the UK offshore energy industry – and the people who work in it.

This report presents a range of workforce outcomes that could materialise over the coming years. All are based on the extent to which governments and industry realise their energy transition targets.

It moves the debate forward because these new findings are based on data from a specially-devised workforce visibility tool, which creates fresh levels of rigour and accessibility.

Overall, this report serves to underline the present-day reality for the UK energy industry and its various stakeholders: the big prize of a significant jobs gain is still within our collective grasp, but falling short on energy transition targets and ambitions will mean the opportunity is lost.

To put the challenge in context, the UK Government’s British Energy Security Strategy of April 2022 targets 50 GW of offshore wind, 10 GW hydrogen and up to 30 million tonnes of carbon capture and storage for the UK by 2030.

If those targets are met, they will serve to sustain and grow the offshore energy workforce in the UK by around 50%, from just over 150,000 in 2023 to close to 225,000 by 2030. That will be the number required to deliver the anticipated capital and operating activities across all energy sectors.

If these headline targets are missed, workforce numbers could drop by around 15%, to approximately 130,000, by 2030.

Key to avoiding this will be investment in UK capabilities to deliver a fast-growing programme of capital projects, which in turn will also help to realise the goals set for UK content driving the transition.

This report builds on the findings in both Robert Gordon University (RGU)’s UKCS Workforce Transferability Review (2021) and the North Sea Transition Deal (NSTD)’s Integrated People and Skills Strategy (2022).

However, it also highlights that – in the context of a dynamic external environment – there is significantly more downside risk than upside potential.

Key findings

1. Follow the money

- Of a projected spend of up to £200 billion in the UK offshore energy system over the rest of this decade, it is estimated that around 90% (approximately £175 billion) will be spent in the supply chain. The remainder is associated with operator and developer activities.
- Capital expenditure (capex) and operational expenditure (opex) represent close to 89% of the supply chain spend between now and 2030, with decommissioning and development expenditure typically representing around 9% and 2% respectively.
- Six categories represent up to 80% of the supply chain spend in the UK offshore energy sector: maintenance, wells, subsea, operations, facilities and turbines.

2. Investment drives activities and future workforce

- A successful transition will see the UK offshore energy workforce increase by approximately 50% to 225,000 people by 2030. Failure to realise its full potential will see the workforce decline by around 15% to 130,000 over the same period.

- A managed and just transition from oil and gas to renewables will see the oil and gas workforce numbers decline from 120,000 today to around 87,000 by 2030 (in line with production decline and decommissioning activities). A more rapid decline in the oil and gas sector, through a halt to new investment and an accelerated production decline, could reduce the oil and gas workforce by 50% to around 60,000 people by 2030.
- Over the same timeframe and depending on the level of ambition realised, the UK offshore renewables workforce is expected to increase from around 34,000 in 2023 up to 138,000 in 2030.
- In 2023, around 65% of workforce activities in the offshore energy industry are related to opex, with the remaining 35% linked to capex. As the UK builds its new energy future, the future workforce is likely to become more regionalised and localised, with the workforce balance shifting closer to 50% opex and 50% capex.
- The top five job families (out of twenty two) in the industry – operations, engineering, technicians, projects and procurement & supply chain management – represent approximately 70% of all jobs in the UK offshore energy sector.





3. The future workforce is (in large parts) already here

- With over 100,000 people expected to move across or enter the UK offshore energy industry during the 2020s in the success case, there will be a key requirement to introduce readily-accessible induction training to support the various energy sectors.
- In a successful transition, approximately three in five people in the offshore energy workforce are expected to support the renewables industry by 2030, compared to one in five in 2023. With a slower transition, which falls short of the energy transition ambitions outlined by governments and industry, this ratio is likely to be closer to 50/50 by 2030.
- Over 90% of the UK's oil and gas workforce possess skills that have medium to high transferability to the offshore renewables sector.
- Those working in UK-focused subsurface, drilling and offshore facilities management services and catering roles will be disproportionately impacted by the changing nature of the basin.
- For those in offshore facilities management services and catering roles, there will be equivalent roles available onshore, either in the region or across the UK. For those in the drilling and subsurface job families there will be ongoing workforce demand in the UK or globally (including oil and gas, hydrogen storage, carbon capture and storage and geothermal activities), but this will require people to work more flexibly or to move to where new opportunities arise.

4. The value of UK content

- For the purposes of this report, UK content is defined as the percentage of products and/or services made or provided in the UK by a UK supply chain and delivered by a UK based workforce (rather than being imported).
- The North Sea Transition Deal (NSTD) sets an ambition for up to 50% capex UK content for new projects by 2030, whilst the Offshore Wind Sector Deal (OWSD) reflects a commitment to 60% UK content by 2030 in the offshore wind sector. The current level of UK content for capital activities is typically less than 35%.
- In the success case, it is estimated that each additional 1% of UK content in the UK offshore energy industry could equate to around £275 million spend and to around 3,800 additional direct/indirect jobs in 2030.

5. The right workforce at the right time and in the right place

- A new workforce model will emerge, with future jobs concentrated around key energy clusters across the UK. There will be a more transient workforce, with an increased focus on capex and vocational work, resulting in people moving from project to project across the country.
- Depending on the level of ambition realised, the UK offshore renewables workforce is expected to exceed the oil and gas workforce from the late 2020s onwards.
- There is a workforce ‘goldilocks zone’ during the period 2024/28 when the UK supply chain capacity/capability can be sustained and developed, and the transferability of the offshore energy workforce can be optimised.

6. Scotland’s energy workforce is in the spotlight

- Close to one in thirty of the working population in Scotland is currently employed in or supports the offshore energy industry.
- Around one in five of the working population in the North-East of Scotland is currently directly or indirectly employed in the offshore energy industry. Including induced jobs, it means one in three people in the region is working in or supporting the offshore energy industry.

- The Scottish-based offshore energy workforce could increase by 25% from 79,000 to close to 100,000 if the energy transition and UK content ambitions are successfully attained.
- However, if Scotland is unsuccessful in capturing the full range of offshore energy and UK content opportunities, the workforce could fall by almost 40% to below 50,000 by 2030.

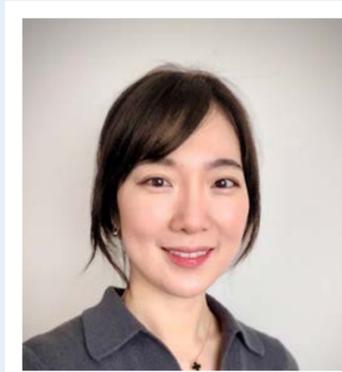
Given the ever-evolving nature and characteristics of the transition – and the many moving parts which constitute it – we believe this report is timely in presenting a data-led, up-to-date picture of the huge opportunities while being clear about the risks that need to be recognised and managed.

It highlights the needs for a well-managed, closely co-ordinated just transition which accelerates the net zero agenda whilst at the same time capturing the material supply chain and workforce prizes for the UK and the devolved nations.



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Introduction

Sustaining a world class offshore energy basin

The UK has set an objective of achieving net zero greenhouse gas emissions by 2050 (2045 in Scotland), pursuing targets along the way of a 68% reduction by 2030 and a 78% reduction by 2035. Delivering these ambitious targets will fundamentally change the UK's energy ecosystem, with renewable energy becoming the largest contributor to the UK's energy mix (figure 1).

The transition from oil and gas production to renewable energy sources potentially creates a secure and opportunity-laden future for the UK offshore energy workforce – one in which most can capitalise on the skills and experience they have accrued over many decades.

That is because meeting these targets will entail significant new investment, will anchor the supply chain in the UK and can create sustainable high-quality jobs.

RGU's [UK Offshore Energy Workforce Transferability Review](#), published in May 2021, highlighted that around 200,000 skilled people would be needed in the UK offshore energy industry in 2030 to ensure delivery of anticipated capital and operating activities across all sectors.

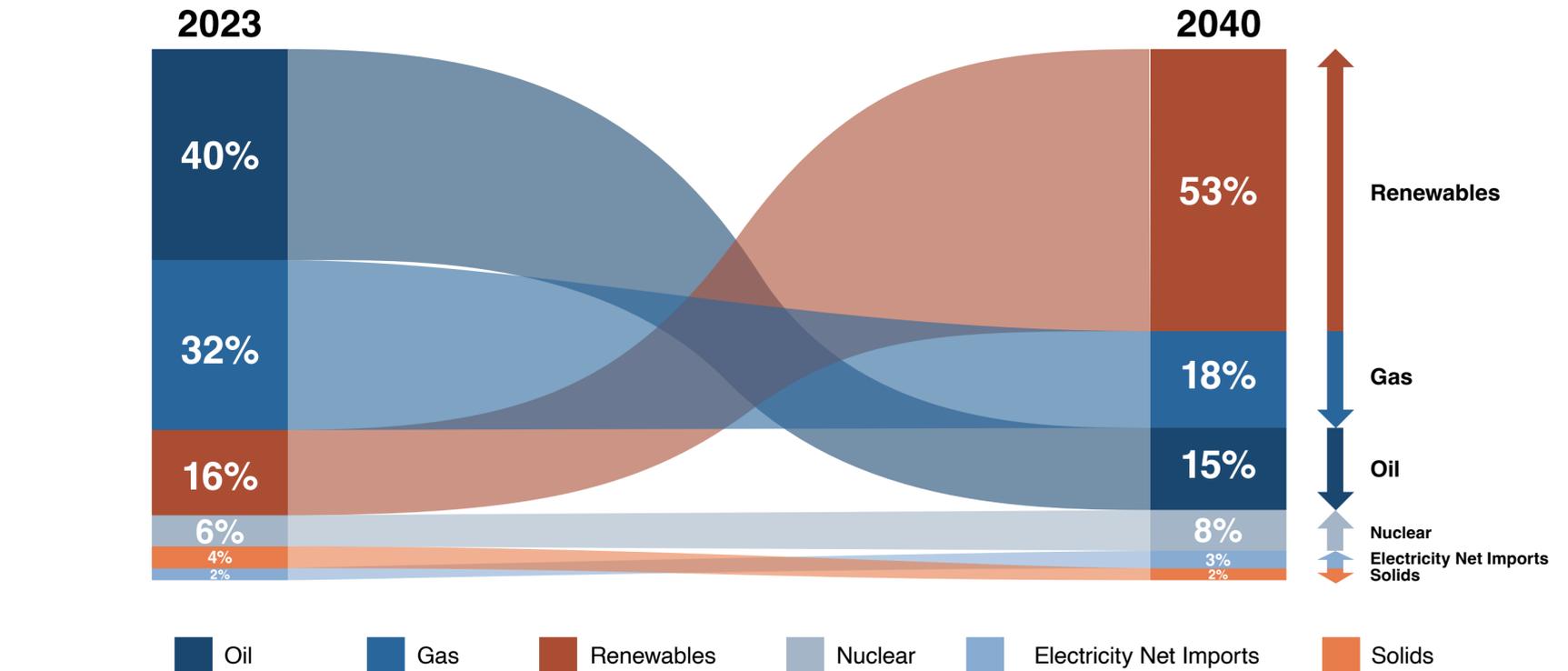


Figure 1 - Projected UK primary energy demand 2023 - 2040

Source: DESNZ UK primary energy demand (2023-2040) & Committee on Climate Change report UK oil and gas demand forecast for 2040 (March 2023 report) & RGU analysis

The same report also set out several industry scenarios for 2030, with associated workforce levels ranging from 140,000 to 220,000 people.

In 2022, the industry skills organisation OPITO published the [Integrated People and Skills Strategy](#) as part of the North Sea Transition Deal (NSTD). It highlighted that more than 211,000 offshore workers will be required by 2030.

Prepared by the RGU Energy Transition Institute (ETI), this new report builds on these reviews and provides key insights on how it will be possible to pursue a managed and fair transition for the offshore energy workforce in the UK.

Given the dynamic nature of the sector, this review has been prepared as the latest in a series to help inform decision makers and other stakeholders.

Understanding tomorrow today



Increasing visibility of future UKCS activities

The UK's offshore energy sector has been powering the nation for over 50 years. With the emphasis shifting to a lower carbon future, the sector is forecast to invest close to £200 billion over the remainder of this decade on offshore wind, hydrogen, carbon capture and storage (CCS) and oil and gas projects. [Offshore Energies UK \(OEUK\)'s Economic Report 2023](#) underlines the scale of opportunity for the UK in putting the offshore energy industry and its workforce at the heart of the race to net zero.

The UK is estimated to spend up to £25 billion per year on offshore energy related activities, of which approximately 50% (or £13 billion) is projected to be spent in the UK and executed by a UK-based workforce. The remainder is assumed to be spent on overseas activities.

Given the nature and structure of the offshore energy industry in the UK, typically close to 90% of all the spend in the sector is executed by companies in the supply chain, either by a workforce based in the UK or based overseas. The remaining 10% represents spend by operators and developers.

Significant parts of the existing UK offshore energy supply chain are already well positioned to support the rapidly growing offshore renewables industry. Previous RGU analysis indicated that over 90% of the UK's oil and gas workforce have medium to high transferability to the offshore renewables sectors.

Maintaining and growing a healthy and capable supply chain in the UK will be critical to ensuring that the nation has the capability and capacity to deliver the energy transition and meet legally binding emission reduction targets.

New rigour, new visibility, new insight

Against this backdrop, RGU has developed a new, interactive workforce and supply chain visibility tool. The tool has been used to generate much of the data in this report and underpins its findings. It maps out the spend and workforce requirement by:

1. Individual offshore energy sectors (offshore wind, oil and gas, hydrogen and carbon transport, processing & storage)
2. Future UK offshore energy scenarios (representing rapid transition, medium transition, slow transition)
3. Type of expenditure (development expenditure - devex, capital expenditure - capex, operational expenditure – opex, and decommissioning expenditure - decex)
4. Sub-sectors (including operations, maintenance, facilities, subsea, logistics, drilling and wells)
5. Four nations of the UK (England, Scotland, Wales and Northern Ireland)
6. UK content scenarios (representing high, medium and low UK content forecasts)



Figure 2 Model inputs and outputs

The model captures key input data and activity forecasts from RenewableUK, Offshore Energies UK (OEUK), North Sea Transition Authority, Carbon Capture and Storage Association, Hydrogen UK, Offshore Wind Industry Council, UK Government, Scottish Government, government agencies, companies and many other sources (figure 2).

This process ensures the model input represents a fair and reasonable reflection of future industry activity and demand.

The tool is highly interactive and can instantly model specific scenarios, policy choices, the impact of changing assumptions on supply chain spend and associated workforce requirements.

The tool is currently set up to model the UK oil and gas, offshore wind, carbon transportation, processing & storage and offshore hydrogen sectors (including associated onshore support activities). However, the model is country and energy sector agnostic so can be readily adapted for other geographic regions and to include other energy sectors.

Shaping a new, lower carbon energy future

Scenarios & UK content cases

The UK offshore energy industry is uniquely positioned to capitalise on the opportunities associated with the energy transition and to deliver on the UK and Scotland net zero targets. This includes contributing to:

- The [UK's British Energy Security Strategy](#) targets of 50GW installed capacity for offshore wind, 10 GW of hydrogen capacity and up to 30 million tonnes of carbon capture and storage by 2030
- Ambitions set in the [North Sea Transition Deal](#) (NSTD) and the [Offshore Wind Sector Deal](#) (OWSD)
- Regional hydrogen and carbon capture and storage cluster activities being pursued across the UK
- The [Draft Scottish Energy Strategy and Just Transition Plan](#) of 5GW of green hydrogen by 2030
- ScotWind ambitions to develop up to 28GW of new offshore wind capacity
- Other targets and ambitions set by regional development organisations, industry and governments.

2023 UK Offshore Energy Baseline

Energy Sector	
Offshore Wind - Fixed	12
Offshore Wind - Floating	< 1
Carbon Processing, Transport and Storage	< 1
Hydrogen	< 1
Oil and Gas	1.3

2030 UK Offshore Energy Scenarios

	Scenario 1	Scenario 2	Scenario 3	
	45	39	30	GW
	5	1	< 1	GW
	30	20	15	MtCO ₂
	10	5	2.5	GW
	0.9	0.7	0.5	million boe/d

Figure 3 UK offshore energy scenarios by 2030

Recognising the uncertainty around what the UK could look like in 2030, three scenarios were developed to characterise the range of possible energy futures for the country (see figure 3).

Scenario 1 reflects the ambitions set out in the British Energy Security Strategy (April 2022). The scenario assumes successful delivery of 50GW of installed wind capacity, 10GW of installed hydrogen capacity and 30 million tonnes of CO₂ injectivity by 2030. The 50GW installed wind capacity target reflects 45GW of fixed wind and 5GW of floating wind capacity.

Scenario 2 represents a mid-point scenario and assumes offshore wind, hydrogen and CO₂ injectivity reach 40GW, 5GW and 20 million tonnes by 2030 respectively.

Scenario 3 reflects significantly slower progress toward delivering a successful energy transition, with offshore wind, hydrogen and CO₂ injectivity reaching 30GW, 2.5GW and 15 million tonnes by 2030 respectively.



The scenarios reflect the range of prospective contributions the individual sectors can make based on existing activities, approved projects and future plans. The scenarios also serve to describe the potential size, shape and requirements of the future offshore energy workforce. It is important to underline that the scenarios are possible future outcomes rather than specific forecasts.

The scenarios developed include the upstream production, generation, transportation, processing and storage of oil, gas, hydrogen, carbon capture and storage and offshore wind, but do not include the full range of energy jobs associated with the downstream use, distribution or consumption of energy.

The scenarios are primarily used to illustrate the impact on the UK offshore energy workforce and in effect anticipate the formation of a new-look UKCS workforce able to deliver on a range of energy activities.

One of the key factors impacting the offshore energy workforce demand is around UK content assumptions associated with future offshore energy activities. For the purposes of this report, UK content is defined as the percentage of products and/or services made or provided in the UK by a UK supply chain and delivered by a UK based workforce (rather than being imported).

The NSTD set an ambition for up to 50% capex UK content for new projects by 2030 and the ambition in the OWSD is

UK Content Cases

% Capex Executed by UK Supply Chain

100% UK Content	100%
Offshore Wind Sector Deal/ North Sea Transition	40 - 50%
Selective Growth	30 - 40%
Status Quo	25 - 35%

Figure 4 UK offshore energy sector UK content cases by 2030. Opex assumptions under all UK content cases are assumed to be up to 85%

to increase UK content to 60% by 2030. The current level of UK content for capital activities is typically less than 35% and up to 85% for operating activities.

To reflect a range of outcomes, four different UK content cases were developed. It ranges from 100% of all offshore energy activities executed by a UK workforce in the UK to more modest assumptions, in which between 25% and 50% of capex and up to around 85% of opex activities are executed by a UK workforce in the UK (figure 4).

Combining the three 2030 scenarios with the four UK content cases enables more granular insight in terms of future workforce demand and future workforce transferability requirements.

Key finding 1

Follow the money

With investment driving activity and activity, in turn, driving future workforce requirements, this review looked at the investment requirements by the operator and developer communities to deliver the outcomes described in the three scenarios. Of the projected £200 billion spend in the UK offshore energy basin over the remainder of this decade, around £175 billion will be within the supply chain.

This investment has been disaggregated into type of spend (level 1 – development expenditure - devex, capital expenditure - capex, operating expenditure - opex and decommissioning expenditure – decex) (figure 5) and more granular supply chain spend by specific energy sector (level 2 and 3).

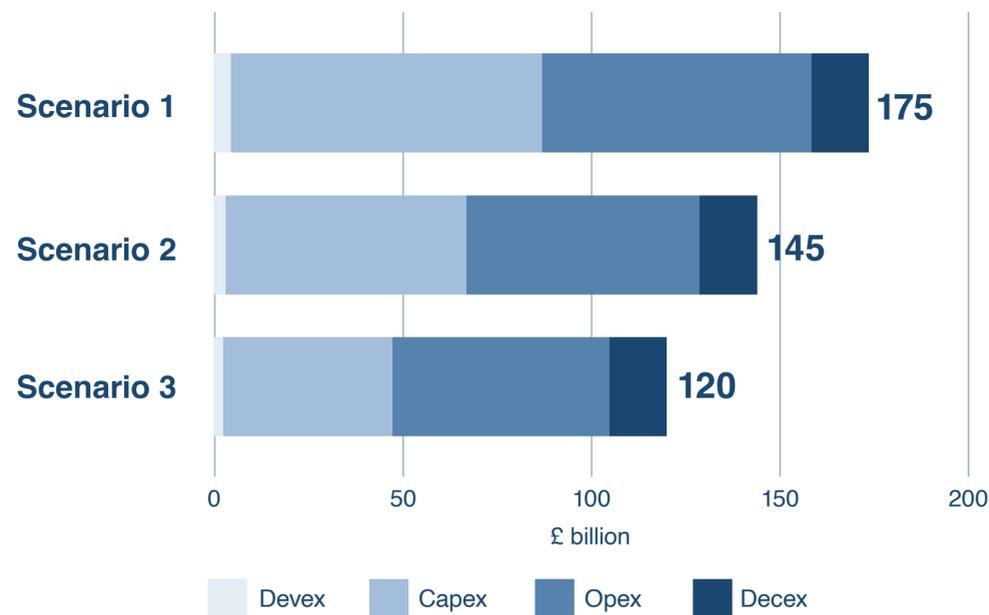


Figure 5 UKCS supply chain spend by spend type 2023-2030

As illustrated in figure 5, capex and opex represent close to 89% of the expenditure between 2023 and 2030, with decex and devex typically representing up to around 9% and 2% respectively. The difference in supply chain spend between the more ambitious Scenario 1 and Scenario 2 is close to £30 billion, and between Scenarios 1 and 3 is around £55 billion between 2023 and 2030.

Combining the detailed supply chain spend across the different sectors provides cross-sector visibility and insight by key supply chain categories (figure 6). The cross-sector analysis also highlights the critical supply chain areas for the UK and identifies where the UK may need to invest and/or build critical new capacity to set the energy transition up for success.

As illustrated in figure 6, the top six cross-sector spend categories (maintenance, wells, subsea, operations, facilities and turbines) are projected to represent around 80% of the supply spend in the UK offshore energy industry by 2030.

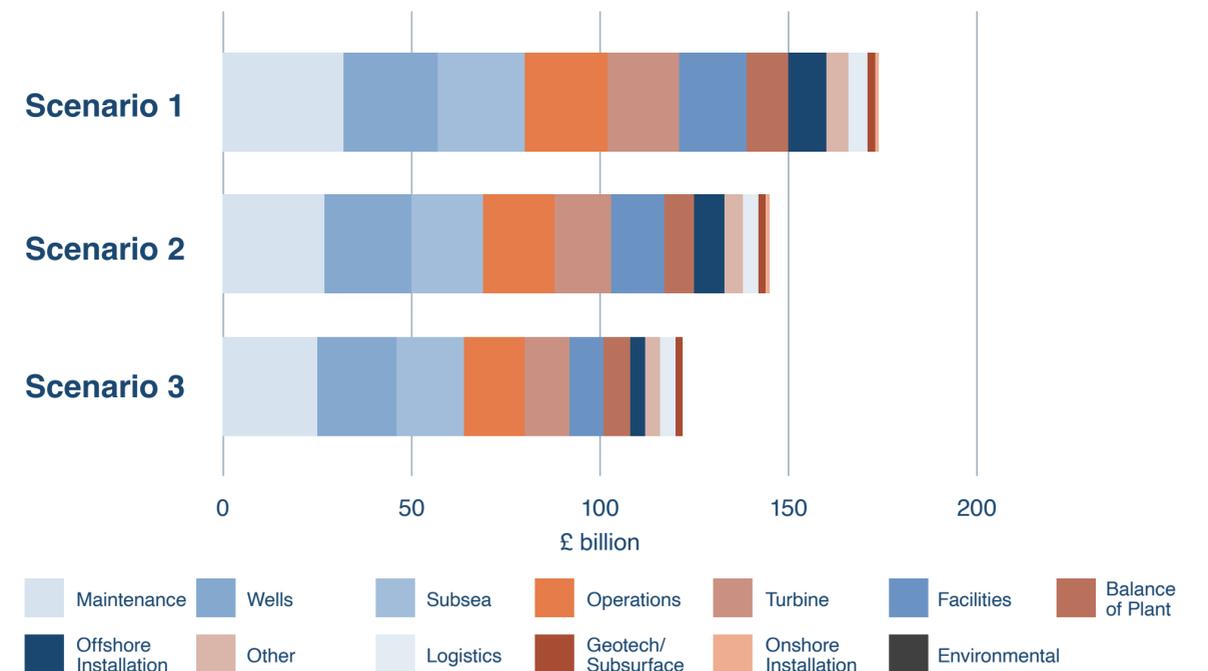


Figure 6 UKCS supply chain spend by cross-sector category 2023-2030

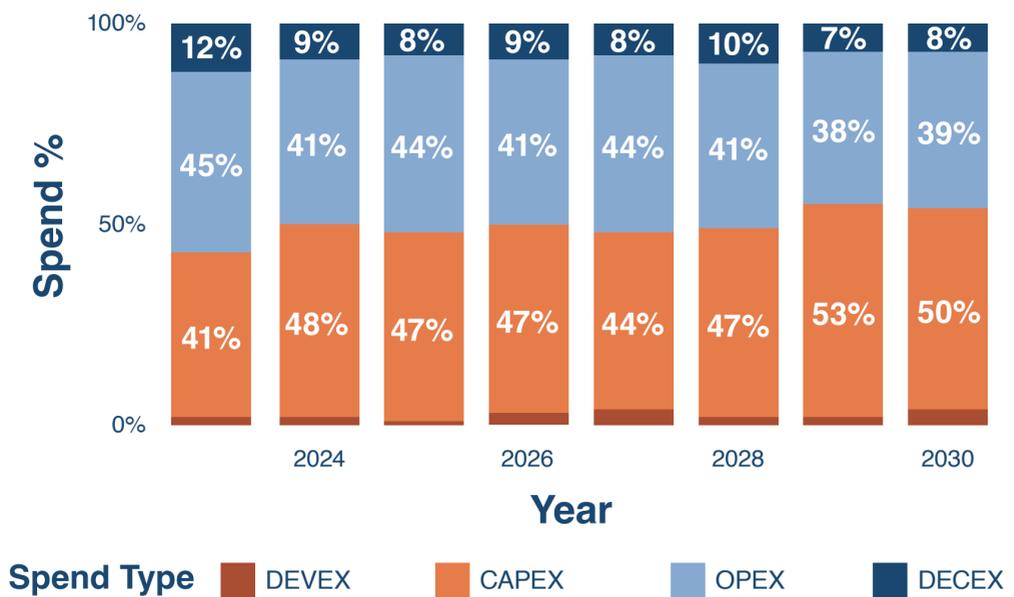
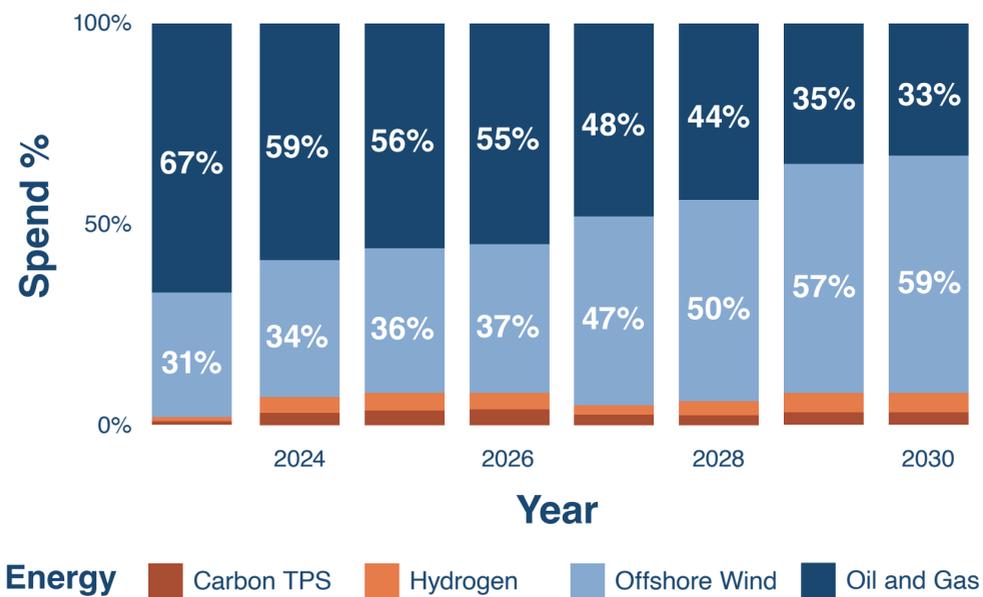


Figure 7 Projected UKCS supply chain spend by energy sector and spend type 2023 – 2030 (Scenario 1, 100% UK content)

By 2030, offshore wind could account for close to 60% of all spend – up from around 30% in 2023 – while capex will account for 50% of spend, increasing from around 40% in 2023 (figure 7).

“Investment needed now in domestic capabilities to anchor renewables fabrication work and associated jobs”

Combined, these trends underline the growing importance of investing in domestic capabilities to anchor renewables-focused fabrication work and associated jobs in the UK.

The visibility of level 2 and level 3 data also enables operators and developers to understand what the market for goods and services could look like and what the implications and timing of placing specific contracts in the market could be.

From a government and trade association perspective, the data in the visibility tool provides insights about critical sectors, potential pressure points, new investment opportunities and areas requiring additional industry/ government support.

With activity driving future workforce requirements, the spend visibility also provides insights into what type of jobs and skills are going to be required in the coming years. Aligning workforce demand (number of jobs) and type of jobs required (by job family) to specific activities and UK content assumptions enables the education and training sector to develop more targeted and bespoke up-skilling, new-skilling and re-skilling solutions.

Key finding 2

Investment drives activities and future workforce

Based on the 2022 NSTD Integrated People and Skills Strategy report, close to 154,000 people on a full-time equivalent basis were estimated to be directly and indirectly employed in the UK offshore energy sector in 2023.

Previous RGU analysis highlighted that approximately 80% of the UK offshore energy workforce supports oil and gas activities, with the remainder supporting the wider renewables agenda.

Around 65% of the workforce activities in the offshore energy industry are predominantly opex related, with the remaining 35% linked to capex and decommissioning related activities.

The top five job families (operations, engineering, technicians, projects and procurement & supply chain management) represent around 70% of all the jobs in the UK offshore energy sector.

Roughly half of the UK's offshore energy workforce is based in Scotland, with the remainder based in England and other UK nations (figure 8).

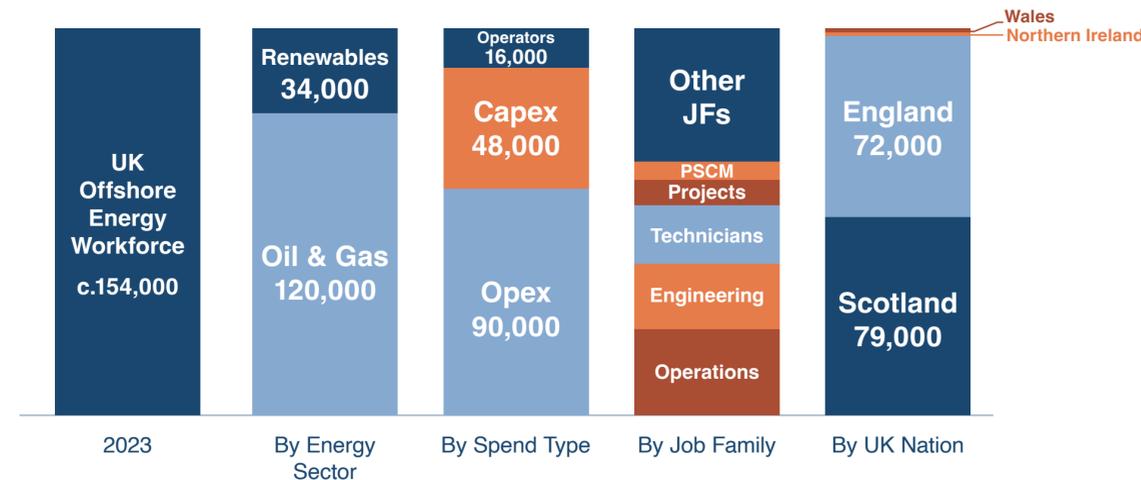
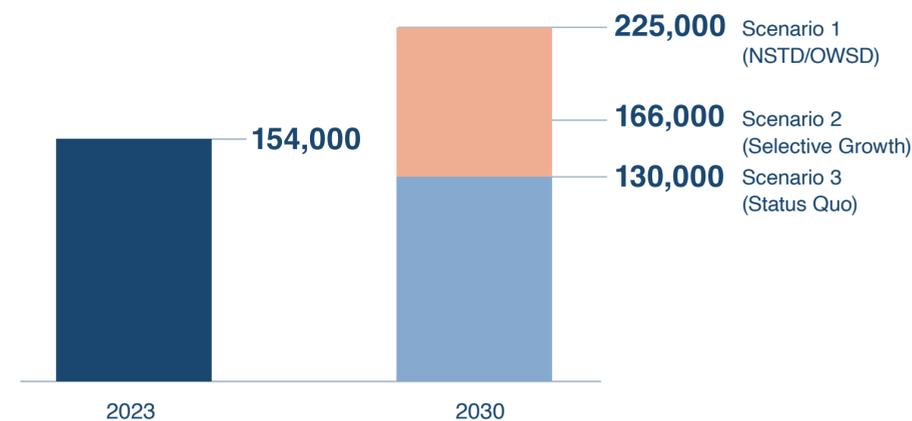


Figure 8 UK offshore energy workforce 2023 characteristics

As the UK builds its new energy future, a successful transition as outlined in Scenario 1 and aligned to both the OWSD and the NSTD assumptions will see the UK offshore energy workforce increase by approximately 50% to 225,000 by 2030. Failure to realise its full potential as characterised by Scenario 3 will see the workforce decline by around 15% to 130,000 over the same period. Under Scenario 2 assumptions the workforce is forecast to be close to 166,000 by 2030, up by 8% from 2023 levels (figure 9).



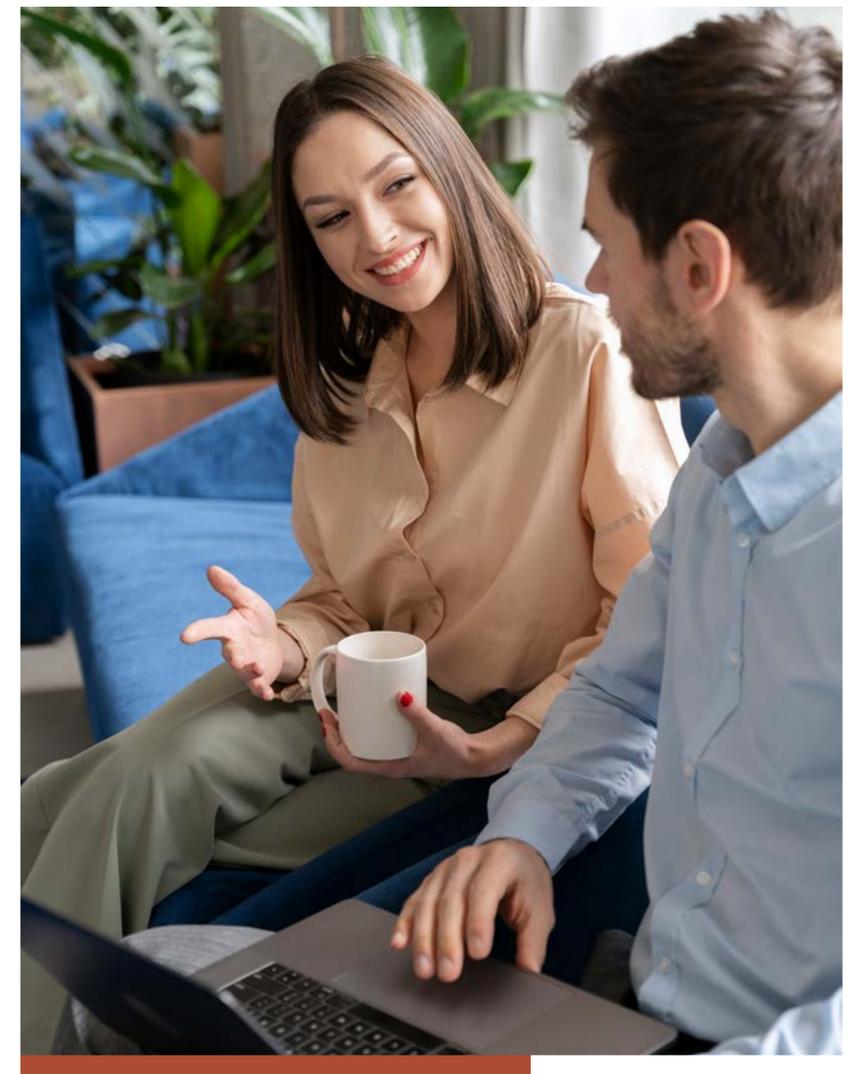
Scenario 1 paired with OWSD/NSTD, Scenario 2 with Selective growth, and Scenario 3 with Status quo UK content assumption

Figure 9 UK offshore energy workforce by scenario 2023 - 2030

The 2030 offshore energy workforce range of between 130,000 and 225,000 identified in this report compares to a 140,000-220,000 range in the previous RGU UK Offshore Energy Workforce Transferability review (2021) and to a figure of 211,000 in the Integrated People and Skills strategy (2022).

This report highlights that with increased pressure on phasing down oil and gas activities, ongoing cost challenges, infrastructure and connectivity issues, consenting timelines, UK content challenges and a multitude of other influencing factors, there is more downside risk than upside potential in the 2030 workforce projection.

A managed and just transition from oil and gas to renewables as per Scenario 1 will see the oil and gas workforce numbers decline from 120,000 today to around 87,000 by 2030 (in line with production decline and decommissioning activities). A more rapid decline in the oil and gas sector associated with halting new investment and an accelerated production decline could reduce the oil and gas workforce to close to 71,000 (down 40%) in Scenario 2 and to around 60,000 people (down 50%) by 2030 in Scenario 3 (figure 10).



*Scenario 1 paired with OWSD/NSTD, Scenario 2 with Selective growth, and Scenario 3 with Status quo UK content assumption

Figure 10 UK offshore energy workforce by energy sector 2023 - 2030

Approximately 80% of the UK's oil and gas production comes from around 20% of its fields. However, over 60% of the oil and gas workforce is currently associated with the fields producing the remaining 20% and are therefore disproportionately exposed to reduced investment and accelerated decommissioning.

Over the same timeframe, the offshore renewables workforce is expected to increase in Scenario 1 from around 34,000 in 2023 to close to 138,000 in 2030. Under Scenarios 2 and 3 the figure is forecast to be around 95,000 and 70,000 respectively (figure 10).

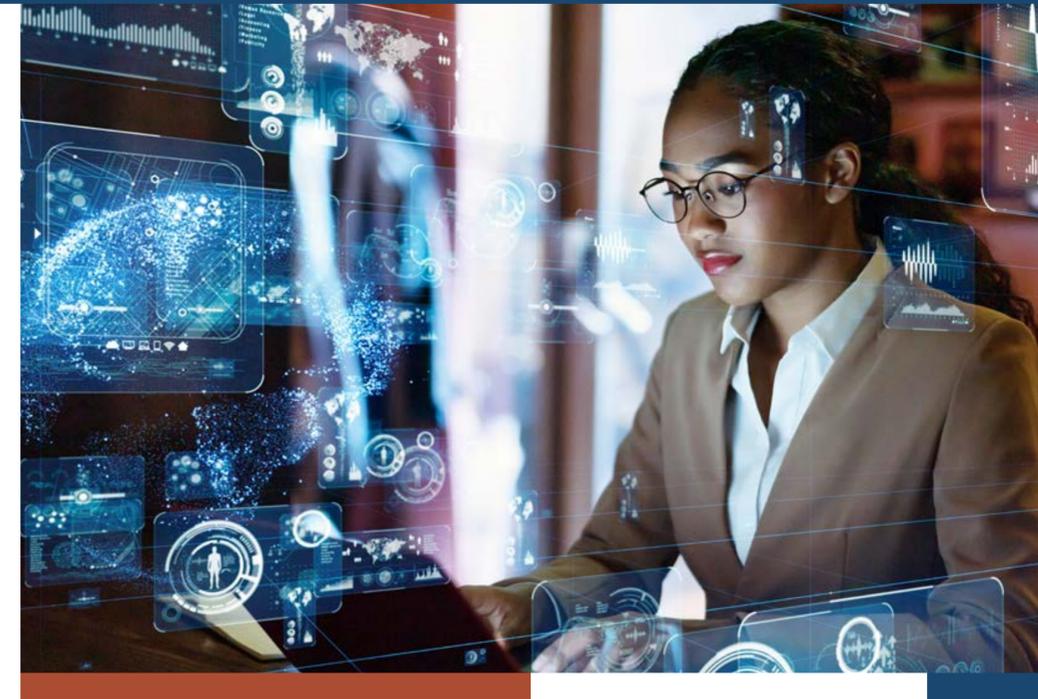
Key finding 3

The future workforce is (in large parts) already here

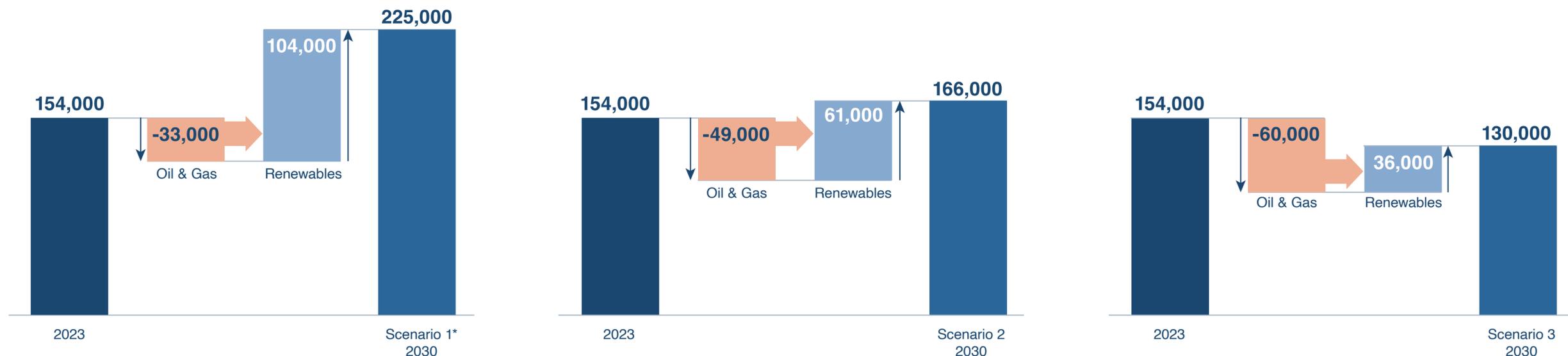
Workforce transferability opportunities will be predominantly driven by the level, pace and UK content of investment in the UK offshore energy sector. In a successful and co-ordinated transition, ‘new’ renewables jobs are forecast to significantly outnumber those lost in the oil and gas industry. However, a more rapid decline in the oil and gas sector combined with slower growth in the renewables sector will mean the reverse is the case (figure 11).

Depending on delivery, UK content assumptions and other variables, the renewables energy workforce is forecast to exceed the oil and gas workforce from the late 2020s onwards.

With up to 100,000 people expected to transfer across or enter the UK offshore energy industry during the 2020s in Scenario 1, there will be a key requirement to introduce readily accessible online induction training for the various offshore energy sectors. Under Scenarios 1 and 2, the decline in oil and gas job numbers between now and 2030 is more than offset by the numbers required to meet demand in renewables.



Under Scenario 3, however, the decline in oil and gas jobs exceeds the opportunities available in the offshore renewables sector. In this scenario, the future workforce could decline from approximately 154,000 in 2023 to around 130,000 by 2030, requiring targeted careers support for those impacted.

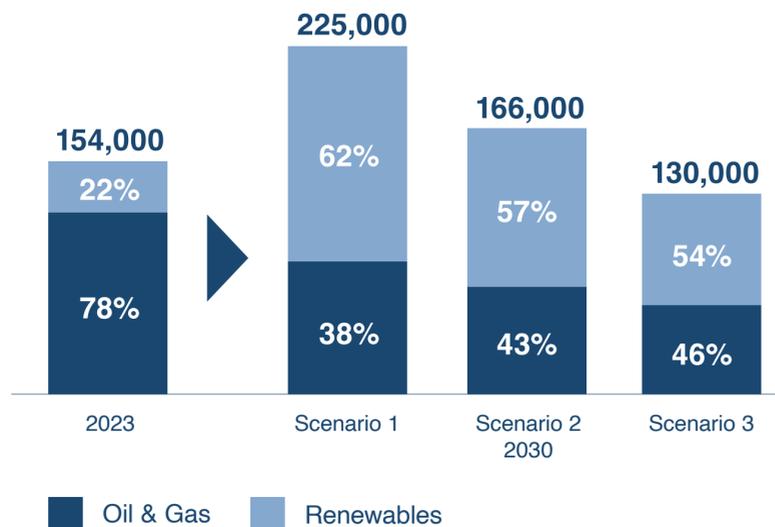


*Scenario 1 paired with OWSD/NSTD, Scenario 2 with Selective growth, and Scenario 3 with Status quo UK content assumption

Figure 11 UK offshore energy workforce transferability by scenario 2023 – 2030

In a successful transition, approximately three out of five people in the offshore energy workforce are expected to support the renewables industry by 2030, compared to one in five in 2023. With a slower transition, which falls short of the ambitions outlined by governments and industry, this ratio is likely to be closer to 50/50 by 2030 (figure 12).

Previous RGU analysis highlighted that over 90% of the UKCS oil and gas workforce possess skills that have medium to high transferability to the offshore renewables sector, though there may be an ongoing need for targeted retraining or upskilling to bridge any gaps.



*Scenario 1 paired with OWSD/NSTD, scenario 2 with Selective growth, and Scenario 3 with Status quo UK content assumption

Figure 12 UK offshore energy workforce by energy sector and scenario 2023 - 2030

Oil and gas workforce by job family	%	Scenario 1	Scenario 2	Scenario 3
Admin/Support	2			
Business development/ Commercial/ Marketing	4			
Communications	<1			
Data Management	1			
Drilling/ Wells	2			
Engineering	19			
Facilities Management Services	3			
Finance	4			
Health, Safety, Sustainability and Environment	3			
HR	3			
IT/ IS	2			
Legal	<1			
Logistics	2			
Management	2			
Office Facilities Management	1			
Operations	25			
Planning/ Scheduling	1			
Procurement and supply chain management	4			
Projects	5			
Subsurface	1			
Technicians	15			
Total oil and gas workforce decrease		33,000	49,000	60,000

Oil and gas workforce transferability to new renewable jobs in 2023 - 2030:

100%+ 50 - 100% Less than 50% (numbers are rounded)

* Scenario 1 paired with OWSD/NSTD, Scenario 2 with Selective Growth, and Scenario 3 with Status quo UK content assumption

Figure 13 UKCS oil and gas workforce transferability to adjacent energy sectors 2023 - 2030

Figure 13 highlights the projected workforce transferability between the adjacent offshore energy sectors. For the purposes of this review, workforce transferability refers to people who change roles within the offshore energy sector and where their skills are either fully or partially transferable to the new roles (subject to any induction and training requirements).

To assess workforce transferability, three key variables were considered - a job being available at the point of transfer, similarity of work activities in adjacent energy sectors and similarity of skills required in adjacent energy sectors.

A possible fourth dimension, the similarity of terms and conditions, was excluded from the analysis on the basis that a significant number of people in the sector will be able to work across different energy sectors within their existing organisations.



The analysis indicated that those working in UK-focused subsurface, drilling and offshore facilities management services and catering roles will be disproportionately impacted by the changing nature of the basin.

For those employed in offshore facilities management and catering roles, there will be equivalent roles available onshore, either in the region or across the UK.

For those in the drilling and subsurface job families there will be ongoing workforce demand in the UK or globally (including oil and gas, hydrogen storage, carbon capture and storage and geothermal activities), but this will require people to work more flexibly and/or to move to where new opportunities arise.

In addition to the creation of the new RGU workforce visibility and demand tool, RGU's [National Subsea Centre](#) is also developing advanced, algorithm-based capabilities to determine training and upskilling requirements for the existing workforce to meet future demand. This UK Continental Shelf Offshore Workforce Planning (UKSOWP) project is part of a wider Net Zero Technology Centre (NZTC) [Data for Net Zero funded programme](#), with delivery scheduled for 2024/25. Combining the RGU workforce demand model with optimised workforce upskilling programmes and development will enable a more integrated and coordinated approach to future resource planning.

Key finding 4

The value of UK content

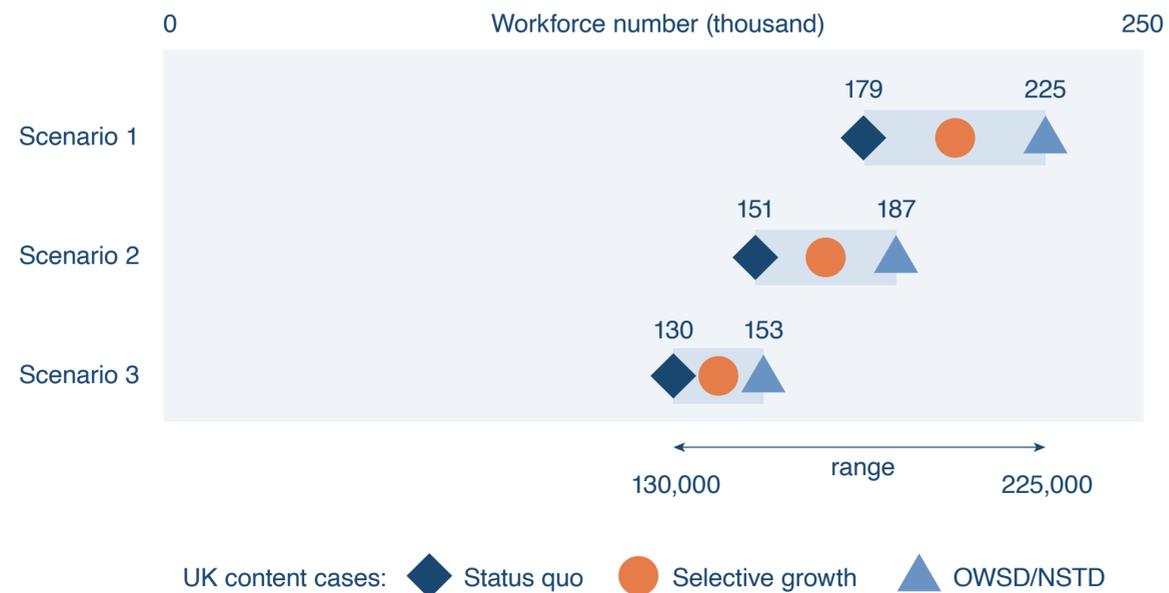


Figure 14 UK offshore energy workforce by scenario and UK content case 2023 - 2030

Based on current commitments and announcements, the ability to execute activities in the UK, the limited access to the UK's electricity grid, and the uncertain UK political and economic environment, the UK should be able to deliver the Scenario 3 outcomes. Without intervention, however, it is likely to fall short of delivering the outcomes outlined in either Scenario 1 or 2.

This means that without intervention, the UK offshore energy workforce will likely remain in the 130,000-160,000 range for the remainder of this decade (figure 14).

The prize associated with delivering Scenario 1 and 2 and associated UK content requirements by 2030 is not only to accelerate the journey to net zero and increase the UK's energy independence, but also to increase the UK offshore energy workforce further by approximately 75,000 to 225,000 in Scenario 1, or by 33,000 to around 187,000 in Scenario 2.

If the UK content targets fall short of the ambitions defined in both the OWSD and the NSTD, the offshore energy workforce requirement by 2030 could reduce by 46,000 in Scenario 1, 36,000 in Scenario 2 and 23,000 in Scenario 3.

For operators and developers to be able to place contracts with UK suppliers, for execution or operation by a UK-based workforce, the analysis assumes that supply chain capacity is in place and/or under development ahead of any Final Investment Decision (FID).

Recognising the value of UK content to the UK economy and to future jobs, it is estimated that each additional 1% of UK content in the UK offshore energy industry in Scenario 1 could equate to around £275 million spend and to around 3,800 additional direct/indirect jobs in 2030. The equivalent for Scenarios 2 and 3 are estimated to be £200 million and 3,100 people and £150 million and 2,400 people respectively.

To maintain world leading capabilities and to sustain and grow high value jobs, it is imperative that the UK content percentage is a critical component and expectation of any formal project approval by government.

Key finding 5

The right workforce at the right time and in the right place

With the UK oil and gas industry in decline and the offshore renewables agenda accelerating, the future activity mix is projected to change materially.

A new workforce model will emerge, with future jobs concentrated around key energy clusters across the UK. There will be a more transient workforce, with an increased focus on capex and vocational work, resulting in people moving from project to project across the country.

Depending on the level of ambition realised, the UK offshore renewables workforce is expected to exceed the oil and gas workforce from the late 2020s onwards (figure 15).

The scenarios also assume a ‘goldilocks zone’ during the period 2024/28 when the UK supply chain capacity/capability can be sustained and developed, and the transferability of the offshore energy workforce can be optimised.

The ‘goldilocks zone’ also assumes that workforce reductions in one sector are matched by increased activities in an adjacent sector. The scenarios have been developed on the basis that individuals can transfer between adjacent energy sectors when their

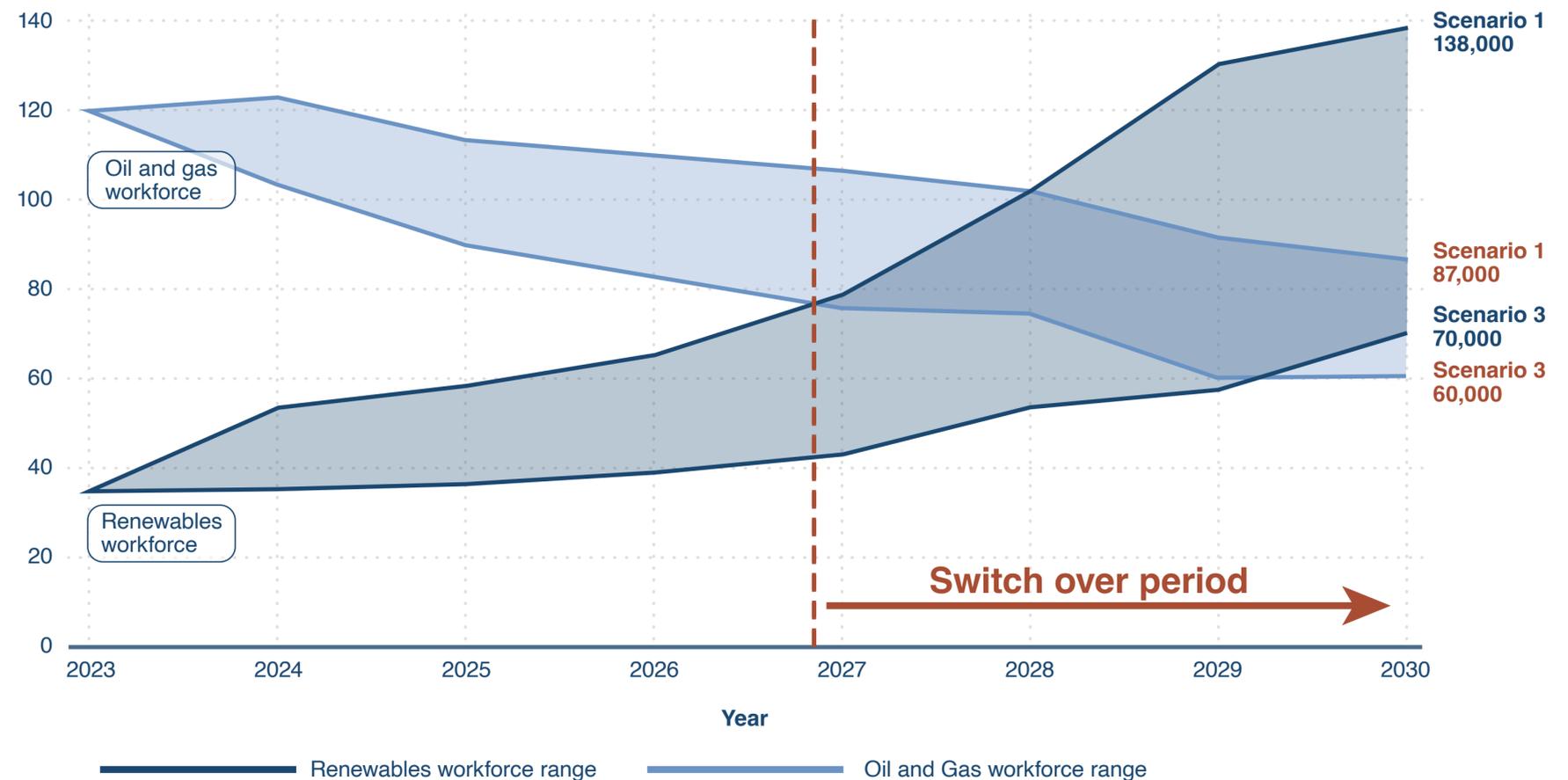


Figure 15 UK offshore energy workforce switch-over 2023 – 2030 (Goldilocks zone)

existing job ceases to exist, subject to the appropriate training and accreditation. People can and will, however, transfer at any time.

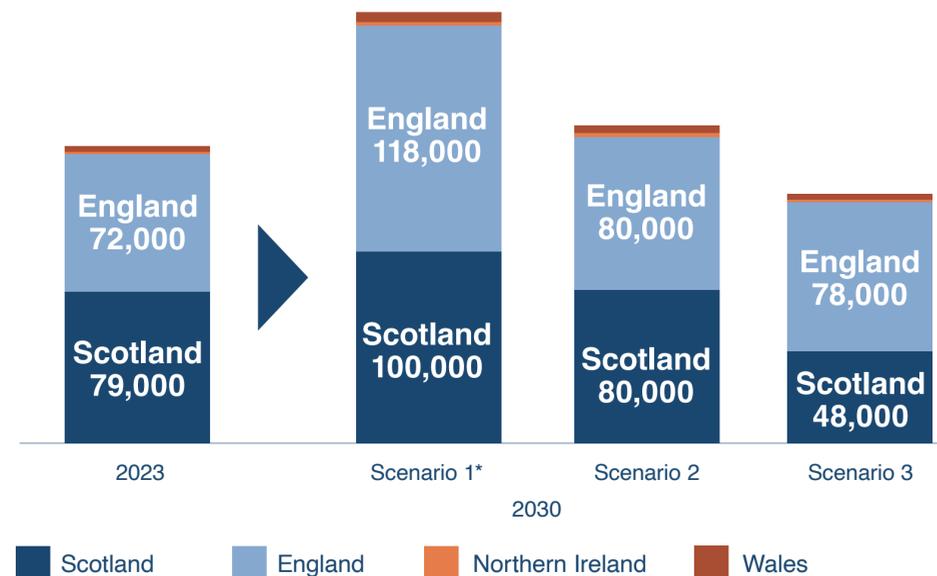
Although this will not change the overall workforce demand numbers, it will dictate which roles need to be backfilled to meet ongoing requirements. This will especially be the case in the oil and gas sector. With the nature of work changing between 2023 and 2030 and with an increased focus on developing and building a new renewables industry, it is projected that the offshore workforce will shift more towards capital activities.

Before 2027 there is likely to be limited capacity for the UK offshore renewables sector to host and accommodate the quantity of available oil and gas workers following the decline in the oil and gas sector.

It is also assumed that the capex workforce will be more transient, activity specific and typically move from project to project. The opex workforce is assumed to be more constant, less transient and typically clustered around operational centres.

Key finding 6

Scotland's energy workforce is in the spotlight



*Scenario 1 paired with OWSD/NSTD, Scenario 2 with Selective growth, and Scenario 3 with Status quo UK content assumption

Figure 16 UK offshore energy workforce by UK nation 2023 – 2030

With the offshore energy industry currently representing close to one in every two hundred jobs in the UK and around one in every thirty jobs in Scotland, the sector has a critical role to play to lead the transition to a lower carbon future.

Under all three scenarios, the offshore energy workforce in England is forecast to expand over the remainder of the decade. The Scottish-based offshore energy workforce is forecast to increase by 25% from 79,000 to close to 100,000 if the energy transition and UK content ambitions are successfully attained (figure 16).

With approximately one out of five of the working population in the North-East of Scotland currently employed in the offshore energy industry (and one in three people when induced jobs are included), the region is ideally positioned to play a key role to set the energy transition up for success.

However, with the high concentration of oil and gas workers in the North-East of Scotland, Scotland's workforce could be disproportionately impacted if Scotland isn't successful in fully capturing the full range of offshore energy and UK content opportunities. In such an eventuality, the offshore energy workforce could fall by approximately 40% from around 79,000 people today to close to 48,000 in 2030.

Preparing Scotland, and in particularly the North-East of Scotland for a just, fair and managed energy transition will be critical for both the UK and Scotland.

Conclusions

Powering up the Workforce

With the right interventions by the right stakeholders at the right time, the UK can achieve its strategic energy goals:

- Reaching its net zero objectives by the target dates of both the UK and Scottish Governments
- Protecting and significantly enhancing workforce numbers in the offshore energy sector

What could it mean?

- An energy mix in which renewables are the single biggest contributor by 2030
- Up to 225,000 direct and indirect offshore energy jobs by 2030, compared to c.154,000 today
- A unique opportunity to capitalise on the high levels of skills transferability between the oil and gas, and the renewables sectors
- A thriving domestic supply chain which leads the manufacture and operation of new energy developments

The UK possesses all the attributes and resources to realise the ambitions set out in government strategies and forward-looking industry programmes.

However, the report also makes clear the significant downside associated with inaction or a slow pace of progress: job numbers could drop by 15% to 130,000 and the path towards net zero becomes a harder one to negotiate.



Focus

The ‘Powering up the Workforce’ review was conducted by Robert Gordon University (RGU) Energy Transition Institute (ETI) between April and August 2023.

The focus of the review was to:

1. Align the 2030 UK energy ambitions to investment requirements, industry spend and future workforce demand.
2. Develop an interactive tool, allowing the impact of policies, scenarios, investment choices on future workforce demand to be assessed more rapidly.
3. Provide more comprehensive insight on future UK offshore energy workforce transferability.

This report builds on the RGU’s UK Offshore Energy Workforce Transferability Review published in May 2021.

This report includes updated industry and government spend data for UK offshore energy activities planned between now and 2030. It also includes the latest workforce updates by key industry bodies and trade associations, including the [RenewablesUK/ Offshore Wind Industry Council](#) (offshore wind jobs) and [ClimateXChange/Optimat](#) (hydrogen skills).

This report has been prepared to help inform decision-makers across industry, organisations, public agencies, educational institutions, and government at all levels. It is also intended to help the region’s energy workforce – offshore and onshore – understand future employment opportunities: what they look like, where they lie and what measures are required to ensure they are seized.

For the purposes of this review, the offshore energy industry comprises oil and gas, offshore wind, carbon transportation, processing & storage, offshore hydrogen (including blue hydrogen) and associated onshore support activities. People, roles and workforce numbers quoted in this report reflect full-time equivalent roles.

Acknowledgement

We would like to take the opportunity to thank all organisations and individuals who have contributed to this review. Their input is appreciated and – where possible – the comments and information received are reflected in this review.

Disclaimer

In the preparation of this review (“Review”), Robert Gordon University (“RGU”) has used the information provided by companies, individuals and a wide range of other sources (including web research, public-domain information sources, survey data and RGU’s own internal sources) (“Information”) to build the knowledge and to enable the delivery of the Review. This Review is based solely on the Information and is not intended to be a comprehensive review of all potentially relevant issues relating to its subject matter. It is intended to draw attention to those issues which - in RGU’s absolute discretion - are material to the Review. While this Review has been prepared in good faith, and RGU has utilised reasonable care to validate the data presented in the Review, neither RGU nor any of RGU subsidiaries or holding companies, partners, officers, employees, consultants, agents or other representatives, provide any representations, warranties, assurances or undertakings, expressed or implied, as to the adequacy, authenticity, accuracy, completeness or reasonableness of the Information, data or opinions that third parties or secondary sources provided to RGU. All and any such responsibility and liability are expressly disclaimed. RGU shall not be liable for any losses, damages, costs or other consequences arising out of or in connection with this Review, including without limitation any recommendations, views or opinions that are expressed therein. The information contained in the Review is based on subjective estimates and assumptions. No representation, warranty, assurance or undertaking is given by RGU as to the reasonableness or achievement of any projected results, estimates or prospects that will be attained in the ever-changing dynamic market environment.

