

# MAKING THE SWITCH

NEW ENERGY | NEW JOBS | NEW ERA



The future shape of the offshore energy  
workforce in the North-East of Scotland

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MAY 2022

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## EXECUTIVE SUMMARY

The energy industry in the North-East of Scotland<sup>1</sup> is at a crossroads. Its future direction will be determined by the extent to which the region seizes new opportunities associated with the energy transition.

Its energy industry today comprises a combination of operators, developers, supply chain businesses, professional services firms and specialist educational providers at a scale unrivalled within the UK.

Moreover, it hosts the largest energy skills cluster in the UK: a workforce that uniquely possesses the specialist knowledge, experience and expertise required to deliver and accelerate the energy transition.

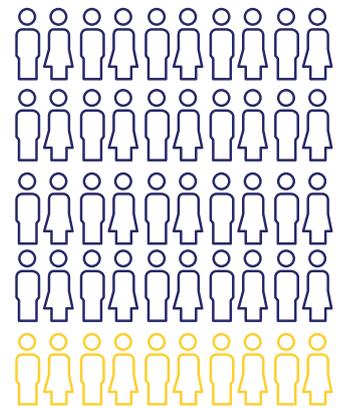
This report sets out a range of workforce scenarios that could unfold over the coming years. Each depends on the degree to which the North-East can exploit its existing energy ecosystem and realise its ambitions in the transition arena.

Fully converting those ambitions into reality will deliver a significant gain over the coming decade and avert the negative jobs-related impact of the long-term decline in the UK oil and gas industry.

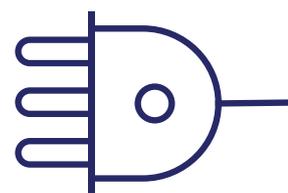
The North-East's offshore energy workforce<sup>2</sup> can feature up to 54,000 jobs in 2030 – compared to approximately 45,000 today – if it becomes established as the Global Energy Hub for 18 GW of installed offshore wind capacity, 3.3 GW of hydrogen generation and up to 28 million tonnes of annual carbon capture and storage (including CO2 imports).

To put these ambitions in context, the UK Government's [Energy Security Strategy](#) (April 2022) targets 50 GW of offshore wind, 10 GW of hydrogen and up to 30 million tonnes of carbon capture and storage for the UK as a whole by 2030.

Falling short on that goal, however, will see the regional offshore energy workforce numbers decline by up to 40% by 2030.



**54,000 JOBS**  
**2030**  
**45,000 TODAY**  
(direct and indirect jobs)



<sup>1</sup> Aberdeen and Aberdeenshire

<sup>2</sup> 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 offshore/near shore green hydrogen) and associated onshore support activities. People, roles and workforce numbers quoted in this report reflect full-time equivalent roles.

## KEY FINDINGS FROM THE REVIEW:

### 1. The future of energy jobs in the North-East of Scotland is directly linked to the level and timing of new investment in the region

- The four regional workforce scenarios developed for this report (Regional Decline, Incremental Progress, UK Energy Hub and Global Energy Hub) characterise the range of possible energy futures and associated investment requirements. These range from what we have termed Regional Decline to positioning the area as a Global Energy Hub
- Attaining Global Energy Hub status will require over £17 billion in new regional investments between 2022 and 2030 in manufacturing and operational capabilities for the renewables sector – focused to a large extent on offshore wind. This is in addition to ongoing oil and gas investments in the region
- Success would see offshore energy workforce levels reach as high as 54,000 from 45,000 today over the coming decade, but failure could see them drop to as low as approximately 28,000 by 2030 – and materially impact wider jobs in the region

### 2. The shape and focus of the regional offshore energy workforce will need to change between 2022 and 2030

- In 2021, around 90% of the regional offshore energy workforce was employed in the oil and gas industry; the remaining 10% was supporting regional offshore wind, hydrogen and carbon transportation and storage activities
- Realising the ambition to become a Global Energy Hub will see this balance shift, with three out of five of the offshore energy jobs (60%) in 2030 projected to support the renewable energy industry
- Two out of three people in the regional offshore energy workforce are currently involved with operating activities (opex) with the remainder focused on capital activities (capex). By the end of this decade – and reflecting potential investment in new capabilities – this is expected to shift toward a 50/50 split between capex and opex activities, with an increased demand for vocational skills and skilled trades



### **3. Sustaining oil and gas jobs over the coming years will be key to ensuring access to people and skills for renewable energy activities from 2026 onwards**

- The planning, approval, investment and delivery cycle associated with activities that will help to realise Global Energy Hub status will be typically five years or more, with most of the new jobs in the regional renewables sector becoming available from 2026 onwards
- It will be critical to retain as many of the existing oil and gas jobs as possible over the coming years until sufficient new roles become available in the adjacent energy sectors
- Ensuring the existing oil and gas workforce can fully access future renewables jobs will require a managed and coordinated transition

### **4. Sustaining and developing the sector's skills and capabilities will be critical in ensuring the region has the workforce to deliver the energy transition**

- Realising the ambition to become a Global Energy Hub may require close to 14,000 people in the region to move from oil and gas to renewables roles and up to 16,000 new people to join the industry between 2022 and 2030
- Over 90% of the North-East of Scotland's existing oil and gas workforce has medium/high skills transferability to adjacent energy sectors
- Investment at scale in technology and innovation will be critical for the region to sustain and strengthen its global leadership position

### **5. Energy transition training and skills development will need to be targeted to meet the different needs of the workforce**

- Over 80% of people (close to 37,500 in total) who are currently working in the sector are projected to still be employed in the industry in 2030
- Readily accessible induction training will be needed for up to 30,000 people in the region who are expected to move within or join the offshore energy industry during the period to 2030
- Cost effective and accessible upskilling training will be required for up to 10,000 people in the region who have medium or low transferability to adjacent energy sectors
- It will be necessary to ensure full recognition of site certification, standards and accreditation across the adjacent energy sectors – aligned to the [North Sea Transition Deal](#)





The timescales and targets are challenging, but if the goals are pursued successfully – and at pace – those Global Energy Hub ambitions are within reach. Thanks to the efforts of the industry, policy makers, councils, regulators, universities, colleges, technology centres, regional development organisations, skills bodies and others, the region has already built the foundations for a positive outcome.

With energy becoming increasingly regionalised and focused on clusters, regional stakeholders will now have to build on this momentum by coordinating efforts, streamlining activities and attracting new investments to deliver the material prize for the region – and to ensure that the transition is managed in a just and fair way.

# A CHANGING ENERGY LANDSCAPE

The UK target of achieving net zero greenhouse gas emissions by 2050 (2045 in Scotland), provides the national impetus behind the transition from oil and gas production to renewable energy sources.

The transition – and the opportunities it presents across offshore wind, hydrogen, carbon capture and storage and associated onshore activities – is a key opportunity for the North-East of Scotland, leveraging a 50+ year track record as a global offshore energy basin.

The shift in the North-East towards renewables is further underpinned by strategic regional initiatives, including efforts by Aberdeen City and Aberdeenshire Councils, Opportunity North-East (ONE) and Energy Transition Zone Ltd (ETZ) to establish the North-East as a global leader in technology, innovation and energy transition. Successful delivery will secure new investment, anchor the supply chain and create sustainable, high-quality green jobs.

The Robert Gordon University'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.

This report builds on that review, focusing specifically on a region that hosts the largest offshore energy workforce cluster in the UK. It takes the agenda forward by addressing the employment and wider economic implications of the journey to net zero and the unique opportunities it presents for the offshore energy workforce in the North-East. The review can be expanded in follow-on phases to focus on the wider workforce implications in the region.

Prepared by the Energy Transition Institute at Robert Gordon University and funded by the Scottish Government through the North-East Economic Recovery and Skills Fund (NEERSF), this latest evidence-led report provides key insights on how it will be possible to pursue a managed and fair transition for the offshore energy workforce in the North-East.

It has been prepared to 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.

## Note

*Although this report is focused on the North-East of Scotland, many of its findings are equally applicable to the industry in Scotland and across the UK. Robert Gordon University will share learnings to help accelerate the energy transition and to better inform the workforce about the opportunities and challenges associated with a period of fundamental change for the industry.*



# THE NORTH-EAST OF SCOTLAND – AN ENERGY ECONOMY

Since hydrocarbons were first discovered in the North Sea more than 50 years ago, the offshore energy industry has powered the economy of the North-East of Scotland – and remained central to the wider economic wellbeing of Scotland.

The North-East has an overall population of around 490,000 people and a working population of around 244,000 people (approximately 50% of its overall population).<sup>3</sup>

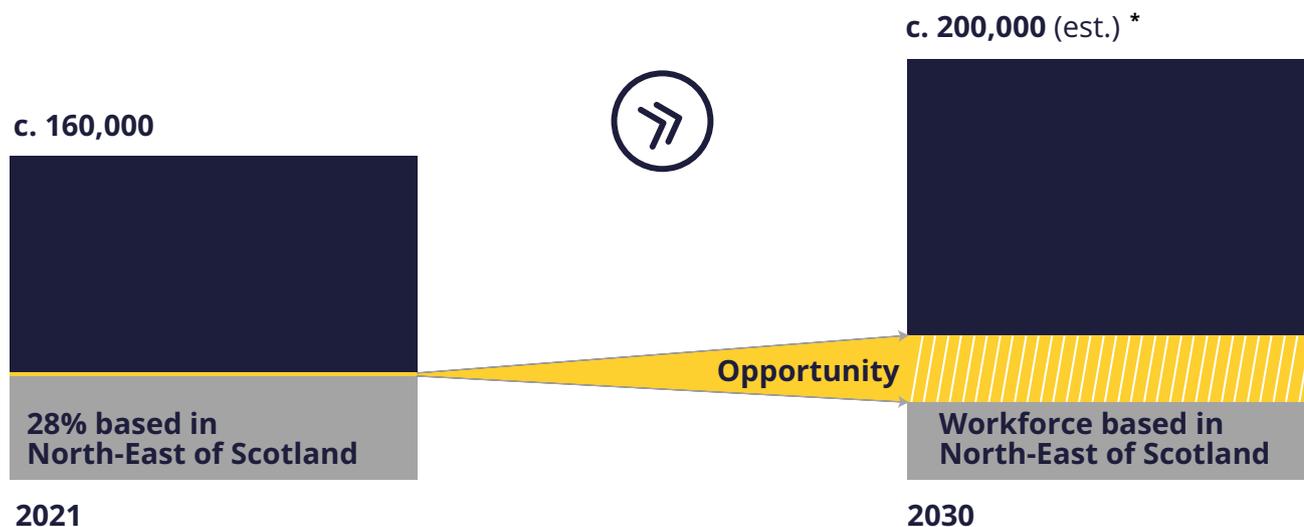
Although it is acknowledged that oil and gas production – historically the primary source of energy-related employment – is in decline, the offshore energy workforce today still constitutes almost one in five of the region’s working population, or approximately 45,000 people.<sup>4</sup> This includes the direct and indirect regional energy workforce, but excludes any induced jobs. Including induced jobs, the offshore energy sector accounts for approximately one in three jobs in the region.

Of those, around 40,000 are associated with oil and gas activities, around 3,500 with offshore wind and around 1,500 with hydrogen, carbon capture and storage and other energy-related activities.

The North-East represents close to 28% of the UK’s offshore energy workforce of 160,000 today (figure 1).

There is an opportunity for it to maintain a similar share of the projected UK workforce in 2030, when it is forecast to reach up to 200,000 if UK and Scottish energy transition ambitions are realised.

**Figure 1 UK offshore energy workforce and the workforce based in the North-East of Scotland (direct and indirect)**



Source: RGU UK offshore energy workforce transferability review 2021

\* Scenario analysis indicates a range of between 140,000-220,000 jobs, depending on delivery

<sup>3</sup> National Records of Scotland (NRS) 2021 - Mid-Year Population Estimates Mid-2020, NOMIS labour market profile 2021 – Aberdeen City and Aberdeenshire

<sup>4</sup> It has been assumed that the offshore energy workforce living in the North-East of Scotland but supporting activities outside the region are offset by those living outside the North-East but working on activities within the region. The uncertainty range around 45,000 is +/-15%.





Including induced jobs, the offshore energy sector accounts for approximately **one in three jobs** in the region

1:3



In a Scotland context, it is estimated that between 70,000 and 80,000 people (or around one in thirty of the working population)<sup>5</sup> are directly and indirectly employed in the offshore energy sector, with around 65% working or based in the North-East.

Of the region's 45,000-strong offshore energy sector workforce, around 25% are employed in business roles and 75% in technical roles (figure 2). The top nine job families – Operations, Engineering, Technicians, Projects, Finance, Procurement and Supply Chain Management, Business Development/ Commercial/ Marketing, HR and Health, Safety, Sustainable and Environmental (HSSE) – represent around 80% of the regional workforce.

**Figure 2 North-East of Scotland offshore energy workforce (direct and indirect) by job family in 2021 (est.)**

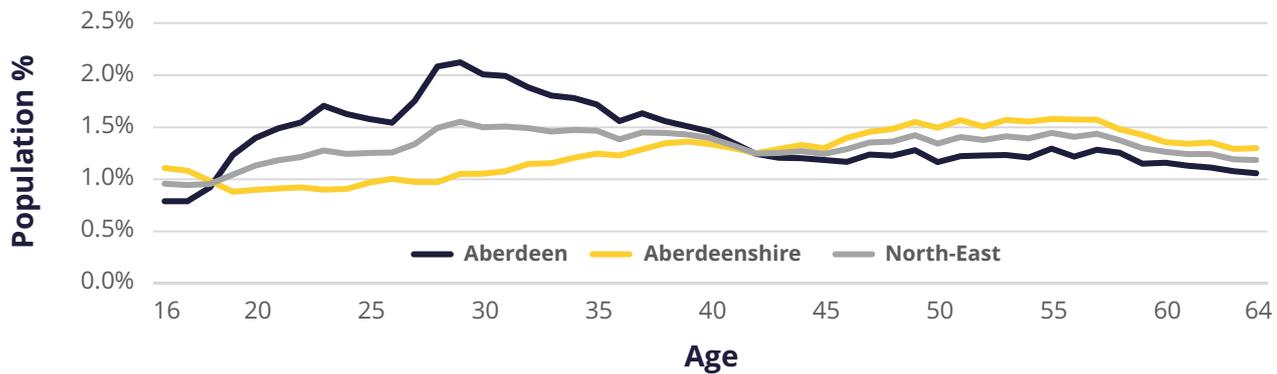


source: RGU analysis 2021

The median workforce age – close to 38 years in Aberdeen and close to 44 years in Aberdeenshire (compared to around 42 years across Scotland) – underlines how the transition process, and many of the practical initiatives being implemented to support skills-related requirements, are directly relevant to the workforce of today (figure 3). Many of those in the oil and gas workforce will have the opportunity to join the transition journey if they have not already done so.

<sup>5</sup> Office of National Statistics (ONS) 2021 - Employment in Scotland seasonally adjusted

**Figure 3 North-East of Scotland age profile (age 16 - 64)**



Source: NRS 2021 - mid-2020 populations estimates

Given the demographic profile of the regional workforce, the analysis assumes that around 1.2% of the working population and the offshore energy workforce will leave on an annual basis due to retirements. Including other net attrition, the existing workforce is projected to decline from approximately 45,000 in 2021 to around 37,500 in 2030.

In terms of educational attainment, the region’s qualification statistics underline the strengths of its overall workforce. The North-East of Scotland ranks fourth highest in the UK in terms of educational achievement, with over half of the workforce educated to degree level<sup>6</sup>. Maintaining and strengthening the quality of future jobs in the region will be critical to retaining the high calibre of the regional workforce. Although the gender split of the North-East population is broadly equal between male and female, women make up only around 25% of the oil and gas industry workforce and approximately 18.5% in the offshore wind sector<sup>7</sup>.

The industry is already focused on fostering a more diverse and inclusive culture to make the most of available talent. The OEUK [Diversity and Inclusion survey report](#) (April 2021) suggested that 89% of industry workers came from a white background, 4% from a black background, 4% from an Asian and 3% from other minorities background. Although those figures are from an industry-wide survey, they directly compare with the North-East population (age 16 - 64) profile of 95.4% white background, 1.4% African/Black/Caribbean background and 3.3% Asian and other minorities background<sup>8</sup>.

There are clearly opportunities to unlock all the talent inherent in the region’s population to help it realise the full potential of the transition. The economic value associated with offshore energy operations is evident in the Gross Value Added (GVA) statistics: GVA per filled job in the North-East is 4.5% higher than the UK average and 8.5% higher than the Scotland average. In 2019, Gross Value Added (GVA) per filled job in the region was £59,260. This compared with a GVA per filled job of £56,670 for the UK and £54,662 for Scotland<sup>9</sup>.

The industry’s overall economic significance is further underlined by current estimates that over £200 billion will be invested in capital and operating activities in the UK offshore energy sector during the 2020s, across both the oil and gas and renewables sectors<sup>10</sup>. The North-East is ideally positioned to attract a material share of this investment.

<sup>6</sup> NOMIS labour market profile 2021 - qualification of 16-64 population in the region, NVQ4 and above (e.g. HND, Degree and Higher Degree level qualifications or equivalent)

<sup>7</sup> RGU/OPITO 2019 - UKCS workforce dynamics the skills landscape 2019-2025 report, Offshore Wind Industry Council (OWIC) 2020 - diversity and inclusion report

<sup>8</sup> NRS 2021 - Scottish council area by ethnicity (estimate)

<sup>9</sup> ONS 2021 - Nominal (smoothed) GVA per filled job (£) 2019 data by subregion

<sup>10</sup> OEUK March 2022 - Business Outlook Report



## SHAPING A NEW ENERGY FUTURE - REGIONAL SCENARIOS

The North-East of Scotland is uniquely positioned to capitalise on the opportunities associated with the energy transition and to deliver its share of the UK and Scotland net zero targets. This includes contributing to:

- The UK's [Energy Security Strategy](#) targets of 50 GW 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](#) and the [Offshore Wind Sector Deal](#)
- Regional hydrogen and carbon capture and storage cluster activities being pursued across the UK (including the Scottish Cluster)
- [ScotWind](#) ambitions to develop 25 GW of new offshore wind capacity, of which 70% (or 18 GW) is within 100 nautical miles of Aberdeen
- Other targets and ambitions set by regional development organisations, industry and governments.

Recognising the uncertainty around what the region could look like in 2030, four regional scenarios were developed to characterise the range of possible energy futures for the North-East. The scenarios reflect the range of prospective contributions the region can make based on existing activities, approved projects and future plans. The scenarios also describe the potential size, shape and requirements of the future North-East offshore energy workforce. It is important to underline that the scenarios are possible future outcomes rather than specific forecasts.

They recognise the potential outlined by the Scottish Government, Opportunity North-East (ONE), Energy Transition Zone Ltd (ETZ), local councils and SGN<sup>11</sup> to decarbonise the region using hydrogen for domestic and commercial use. SGN<sup>11</sup> has identified the North-East as a potential early adopter to develop a hydrogen ecosystem, comprising hydrogen production (through projects such as Acorn, Dolphyn, Salamander and others) linked to hydrogen consumption.

They also recognise the agreement between [Aberdeen City Council and BP](#) (March 2022) to develop a green hydrogen hub in the city will create further job opportunities for the regional energy workforce.

The scenarios developed include the upstream production, generation, transportation, processing, storage of oil, gas, hydrogen, carbon capture and storage and 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 regional workforce and in effect anticipate the formation of a new-look UKCS workforce able to deliver on a range of energy activities (figure 4).

<sup>11</sup> SGN November 2021 - North-East Network & Industrial Cluster Development Summary Report



# NORTH-EAST OF SCOTLAND 2030 OFFSHORE ENERGY WORKFORCE SCENARIOS



## Regional Decline

- Progress to net zero more slowly than other regions in Scotland
- Limited incremental activities and initiatives
- North-East of Scotland attracts a lower than proportionate share of energy transition funding



## Incremental Progress

- Progress to net zero in line with other regions in Scotland
- Incremental activities and initiatives
- North-East of Scotland attracts a proportionate share of energy transition funding



## UK Energy Hub

- UK leader in net zero and energy transition
- National centre for offshore energy technology development and innovation
- UK centre for offshore energy skills, accelerator programmes and thought leadership
- Business friendly and supportive environment
- Sector leading infrastructure, ecosystem and support network



## Global Energy Hub

- As per 'UK Energy Hub', plus global leader for:
  - Net zero and energy transition
  - Manufacturing and export
  - Offshore energy technology development and innovation
  - Offshore energy skills, accelerator programmes and thought leadership

Figure 4 Four scenarios for North-East of Scotland offshore energy workforce by 2030

## REGIONAL DECLINE SCENARIO

This reflects possible workforce outcomes if the North-East is not successful in fully embracing or capturing future renewable energy activities. The scenario envisages an outcome for the region similar to that experienced by other communities across the UK, where the local economy was severely impacted as a result of reduced economic activity and reduced employment.

The scenario also assumes that the regional offshore energy workforce will reduce in line with the decline in the oil and gas sector and that the region will attract a lower proportion of energy transition funding compared to other regions in Scotland.

## INCREMENTAL PROGRESS SCENARIO

This reflects the ongoing decline in the oil and gas industry, partly offset by incremental activities in new energy sectors. The scenario assumes that the North-East attracts a proportionate share of energy transition funding and that progress to net zero is in line with other regions in Scotland.

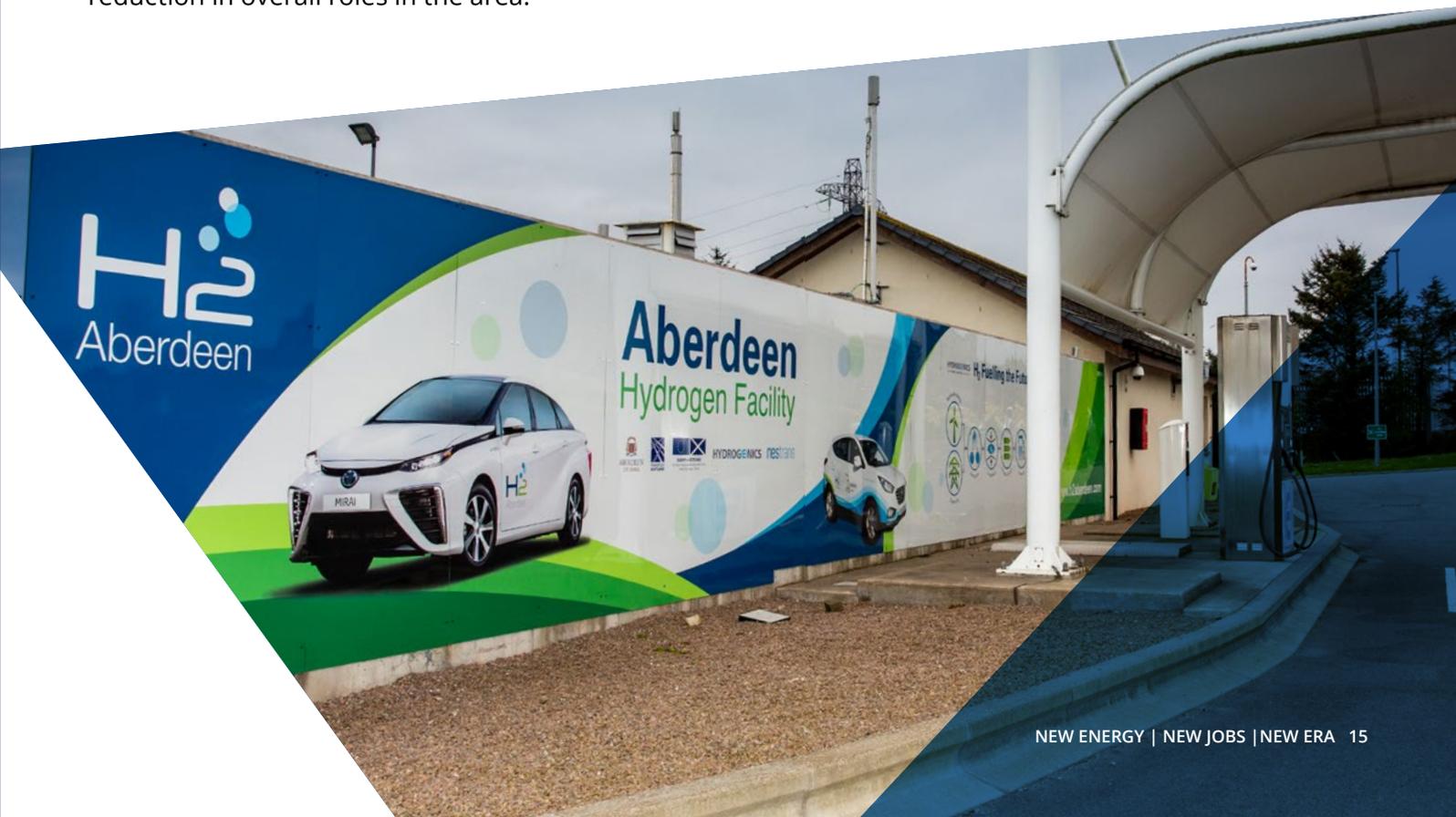
In this scenario the workforce decline in the oil and gas sector can't be offset by the emerging renewables roles in the region, resulting in a net reduction in overall roles in the area.

## UK ENERGY HUB SCENARIO AND GLOBAL ENERGY HUB SCENARIO

(net zero energy capital of Europe)

The aspirations of the UK Energy Hub and the Global Energy Hub scenarios are aligned to the objectives of the Scottish Government, Aberdeen City and Aberdeenshire Councils, Opportunity North-East and Energy Transition Zone Ltd and reflect the opportunity to position the North-East as a UK or global centre for energy transition. In these scenarios the regional workforce will be a function of the region's ability to attract new activity and to manage the decline in the oil and gas industry.

The UK and Global Energy Hub scenarios also assume that the North-East of Scotland is successful in establishing a new regional hydrogen hub as outlined in the Scottish Government's [Draft Hydrogen Action Plan](#) (2021), with the region hosting the full hydrogen value chain from production, distribution and storage to end-users. The regional actions identified are also aligned with the route map outlined in the Draft Hydrogen Action Plan.

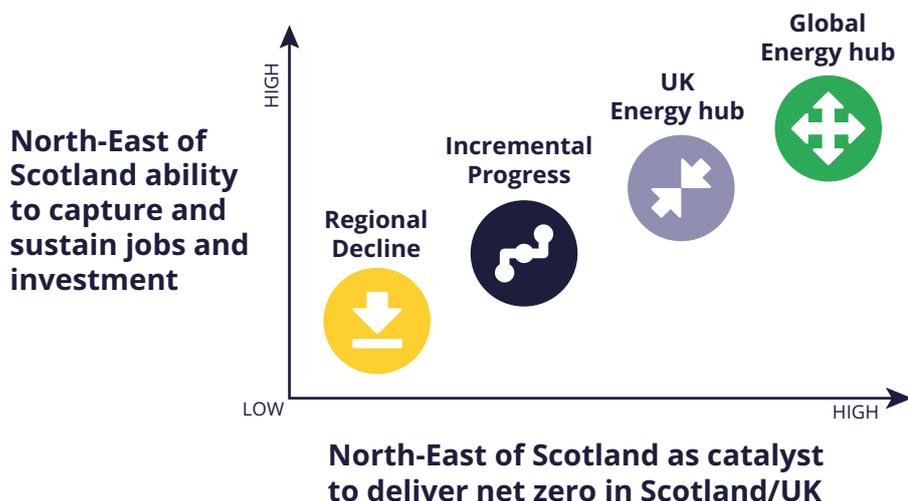


# FOCUS ON TRANSITION, PLACE AND JOBS – SCENARIO ASSUMPTIONS

The scenarios highlight what could be possible where a North-East of Scotland based offshore energy workforce deliver a share of the national targets. Two of the future scenarios (Regional Decline and Incremental Progress) will see a net reduction in the regional workforce, whilst establishing the North-East as either a UK or Global Energy Hub will see the workforce remain broadly stable or increase between 2022 and 2030.

The more successful the North-East is in securing and sustaining investment, the bigger role it can play in delivering the net zero targets for the UK/Scotland (figure 5). The scenarios are dynamic and can be readily re-modelled as the forward plans for, and the investment in, the North-East evolve.

Figure 5 2030 North-East of Scotland offshore energy workforce scenarios



With investment driving activity and activity driving jobs, the four regional scenarios each capture a specific range of activities and deliverables over the next decade. The Regional Decline and Incremental Progress scenarios assume relatively modest investment in new regional hydrogen generation and carbon transportation and processing capacity, and assume that the region is only successful in capturing, developing, executing and operating 5 GW (Regional Decline) and 10 GW (Incremental Progress) of offshore wind capacity from the North-East by 2030 (figure 6).

The UK and Global Energy Hub scenarios are more ambitious and assume that the region will leverage its track record as the UK's leading offshore energy cluster and will capture, develop, execute and operate 14 GW (UK Energy Hub) and 18 GW (Global Energy Hub) of installed offshore wind capacity, 1.3 GW and 3.3 GW respectively of hydrogen generation and up to 28 million tonnes of annual carbon capture and storage (including CO2 imports).





The offshore wind sector capital expenditure (capex) workforce is expected to increase and will likely be sized to develop and install up to 5 GW across the UK on an annual basis, with crews moving from project to project. The offshore wind sector operational expenditure (opex) workforce is expected to increase in line with installed capacity.

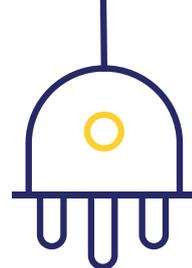
Large scale regional hydrogen and carbon capture and storage activities are projected to commence in the second half of this decade. Based on public domain data for the Scottish Cluster, the primary workforce demand will initially be for capital related activities, with crews moving between similar projects. Opex related activities are expected to commence after the facilities are built and operational post 2025.

With UK oil and gas production projected to decline from around 1.3 (in 2021) to less than 0.8 million barrels of oil equivalent per day by 2030, the associated workforce is expected to reduce accordingly. All four regional scenarios assume an average 7% annual production decline rate and that regional activities will decline in line with overall UK production and investment.<sup>12</sup>

**Figure 6 Regional renewable energy activities underpinning the 2030 offshore energy workforce scenarios**

		 Regional Decline	 Incremental Progress	 UK Energy Hub	 Global Energy Hub
 Offshore wind	GW	5	10	14	18
 Hydrogen	GW	0.25	0.8	1.3	3.3
 Carbon transport and storage	MtCO <sub>2</sub>	1.4	7.4	16	28

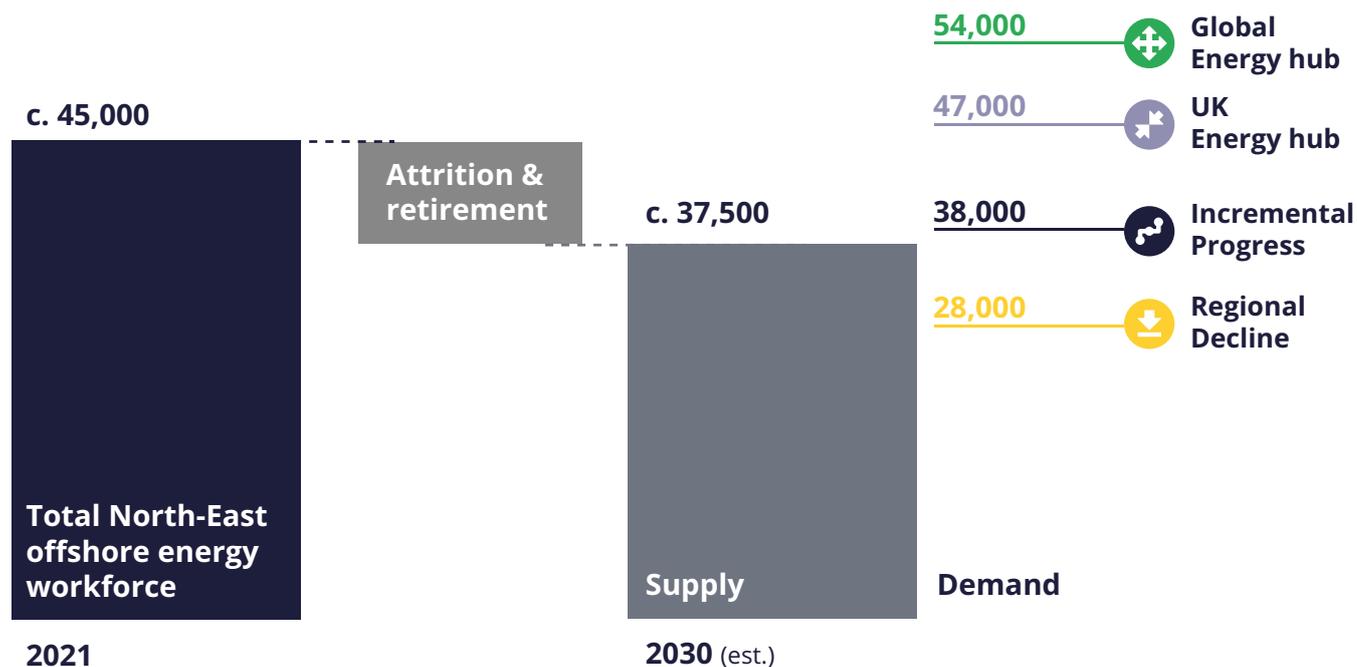
<sup>12</sup> North Sea Transition Authority (NSTA) Feb 2022 Oil and Gas production and projection



# IMPLICATIONS FOR THE OFFSHORE ENERGY WORKFORCE IN THE NORTH-EAST OF SCOTLAND

Modelling the workforce impact of the various scenarios and adding in those who work across the industry for trade bodies, regulators, technology centres, catapults, educational institutions and other offshore energy related organisations, the 2030 direct and indirect regional offshore energy workforce is projected to be between 28,000 (Regional Decline) and 54,000 people (Global Energy Hub) (figure 7).

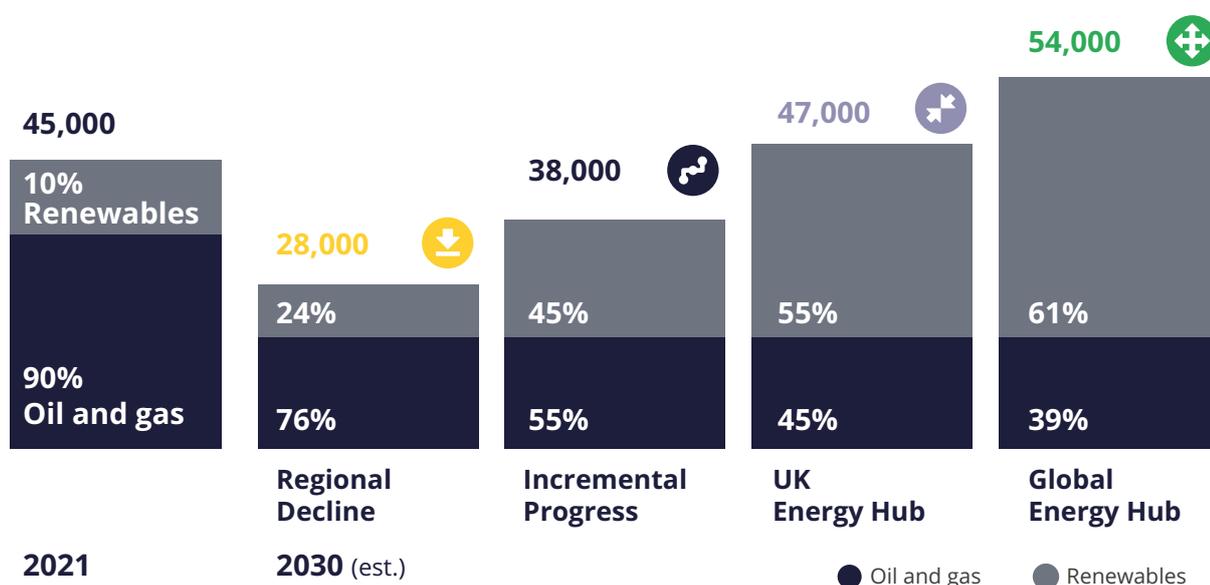
Figure 7 Projected North-East of Scotland offshore energy workforce to 2030 (direct and indirect)



Mapping the journey between 2021 and 2030 highlights that ongoing attrition and retirement will reduce the existing regional workforce supply by around 7,500 people between 2022 and 2030 to approximately 37,500. Positioning the region as a UK or Global Energy Hub will sustain the workforce at 2021 levels or better and will require additional recruitment to offset attrition and ongoing retirements. Failing to deliver these ambitions will see additional workforce reductions in line with reduced investment.

Aligned to the scenarios, the workforce shape and make-up are projected to change significantly between 2022 and 2030. At present, approximately 90% of the energy workforce in the region supports the oil and gas sector, with offshore wind covering most of the remaining roles. Depending on the future regional scenario, this picture is expected to change significantly with up to three out of five people in the workforce projected to support the renewables industry by 2030 (figure 8).

**Figure 8 2030 North-East of Scotland offshore energy workforce % by sector**



The UK and Global Energy Hub scenarios also assume a ‘goldilocks zone’, where 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 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 2022 and 2030 and with an increased focus on developing and building a new renewables industry, it is projected that the regional workforce will shift more towards capital activities. Currently around two out of three of the regional energy workforce are involved with operating (opex) activities and one third with capital activities (capex). By the end of this decade this is expected to shift toward a 50/50 split between capex and opex activities, with an increased demand for vocational skills and skilled trades.

Although this review is primarily focused on the volume of jobs involved, there is a separate challenge around the value of jobs. With the Gross Value Added (GVA) per filled job in the North-East of Scotland 4.5% higher than the UK average and 8.5% higher than the Scotland average, the region may need more jobs to sustain the regional GVA (assuming the new roles in the region will have a GVA per filled job in line with the Scottish average).

# A MANAGED, JUST AND FAIR TRANSITION

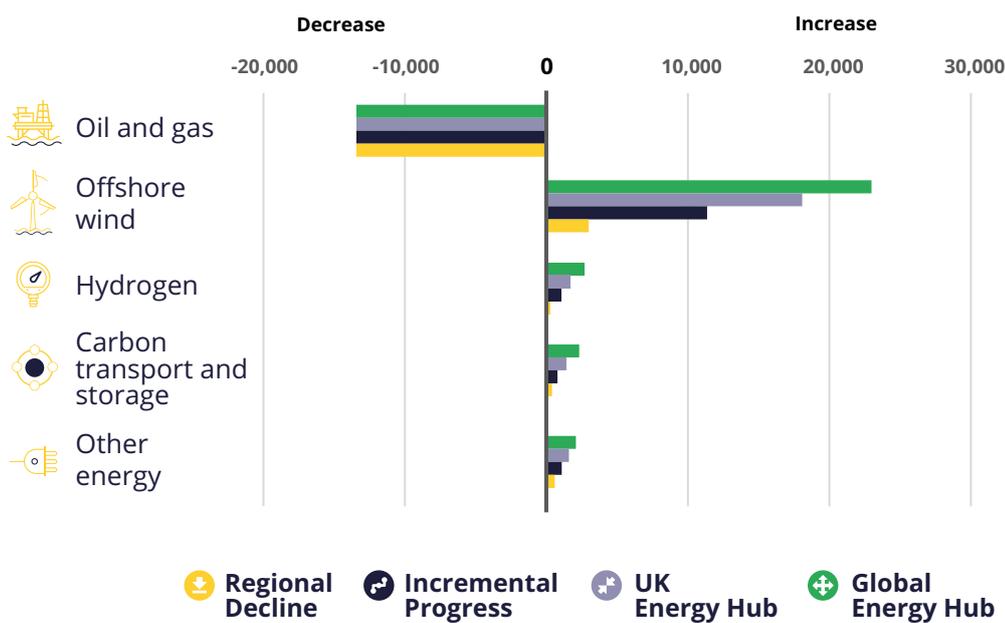
A just transition is defined as both the outcome – a fairer, greener future for all – and the process that must be undertaken in partnership with those impacted by the transition to net zero. It is against this backdrop that this report assesses the regional workforce implications of the transition process – and what support may be necessary to ensure delivery of those overarching goals.

There is a significant opportunity to manage regional workforce transferability, through the planned and orchestrated management of decline in the oil and gas sector so that the consequent workforce reduction is matched by new demand in the adjacent renewables sector. As illustrated in figure 9, it is expected that most of the regional workforce decline in the oil and gas sector will be offset by

new regional roles in the offshore wind sector (Incremental Progress, UK and Global Energy Hub scenarios), with further hydrogen and carbon capture and storage roles becoming available post 2025. With the ongoing decline in the oil and gas industry, close to 14,000 people in the region will need to move to other roles and/or other sectors between 2022 and 2030.

In the Regional Decline scenario, there is likely to be a misalignment in the timing of when new jobs will become available and bridging arrangements may be required to ensure some of the key skills and competencies are protected, maintained and accessible to the sector in later years.

**Figure 9 Change of North-East of Scotland offshore energy workforce by 2030**





Up to **3 out of 5 people** are projected to support the **renewable sector by 2030**

(Global Energy Hub)

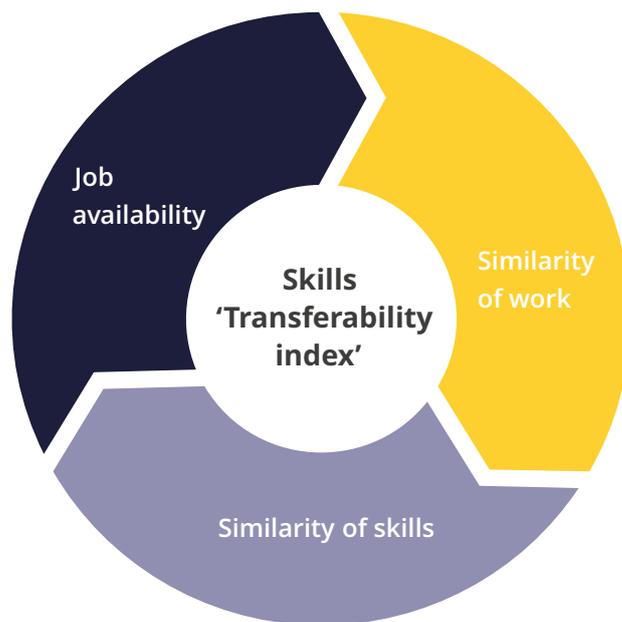


To assess regional workforce transferability, a new 'Transferability Index (TI)' was created, with the index a function of three key variables: a job being available at the point of transfer; the similarity of work activities in adjacent energy sectors; the similarity of skills required in adjacent energy sectors (figure 10). A possible fourth dimension, the similarity of terms and conditions, was excluded from the TI 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.

To understand the similarity of work and skills between typical industry roles, over 300 publicly available energy job advertisements were analysed and compared. The analysis was subsequently cross-referenced with internationally available job databases to provide additional insights. A selection from this job analysis is included as Appendix 1.

Comparing like-for-like roles in the adjacent regional energy sectors highlights that the work and the skills required are often very similar. RGU analysis indicates that over 90% of the workforce has medium to high skills transferability between adjacent energy sectors and will only require limited upskilling in addition to a general induction to the new sector.<sup>13</sup>

Figure 10 Transferability index – three key variables

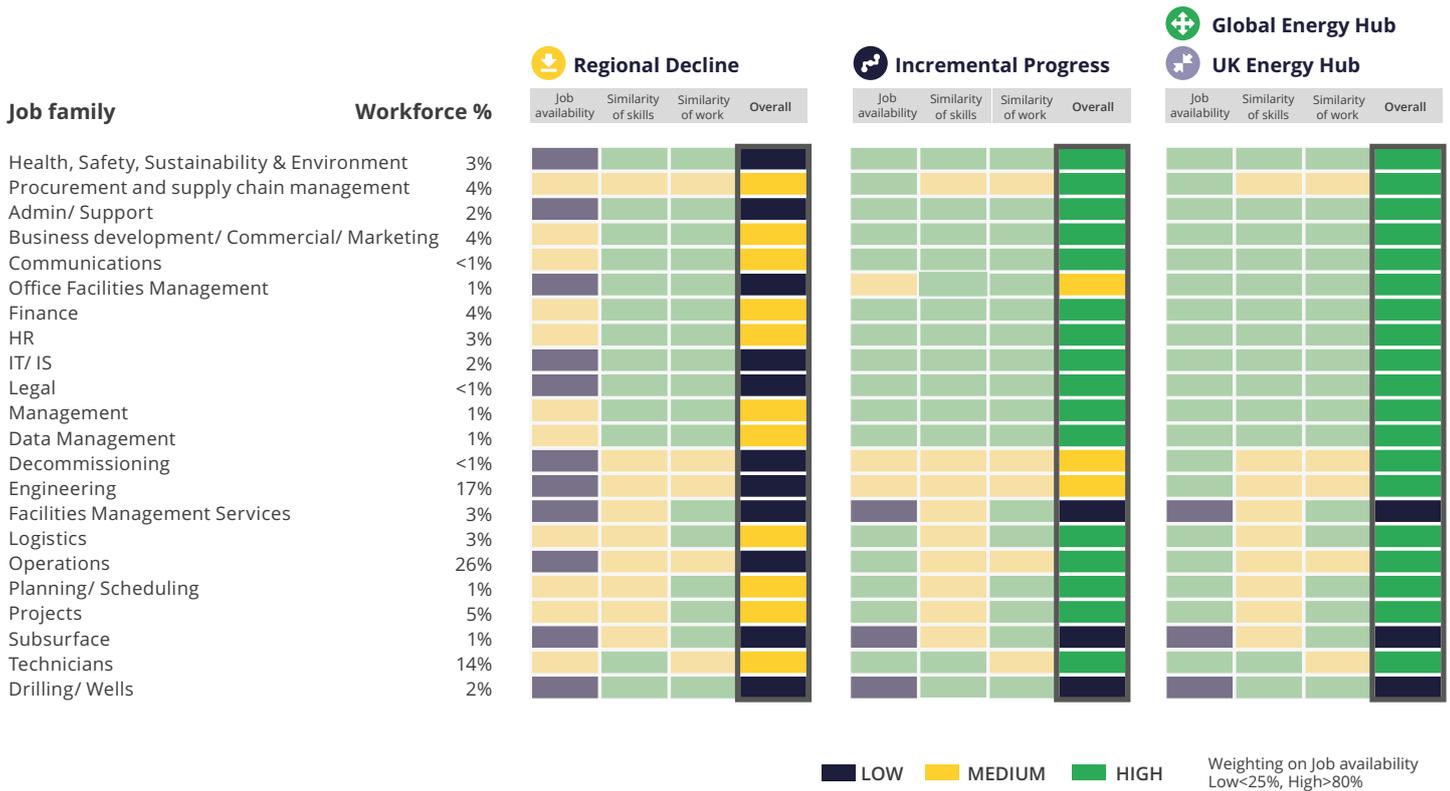


In the Regional Decline scenario, there are only a limited number of regional roles available in the renewables sector. In the Incremental Progress, UK Energy Hub and Global Energy Hub scenarios most roles can readily transfer to the adjacent energy sectors from 2026 onward.

The overall TI score is a weighted average of job availability, the degree of similarity in skills to be required and the level of overlap in terms of work in any of the adjacent energy sectors in the region (figure 11).



**Figure 11 North-East of Scotland oil and gas workforce transferability index – transferability from oil and gas to adjacent energy sectors in the region**



The TI also provides a high-level indication of the extent of training and development requirements as the workforce moves between adjacent energy sectors.

With over 30,000 people in the region (Global Energy Hub scenario) expected to move across or enter the offshore energy industry during the 2020s, there will be a key requirement to introduce readily accessible online induction training for the various energy sectors.

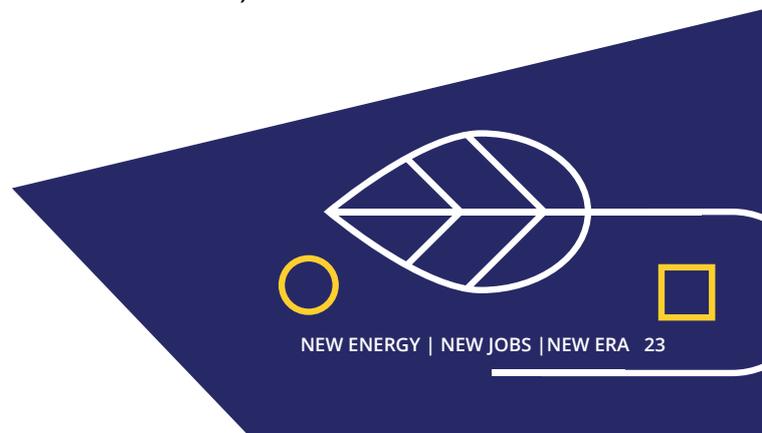
In addition, cost effective and accessible upskilling training will be required for up to 10,000 people in the region who have medium or low transferability to adjacent energy sectors.

With fewer wells being drilled in the UK this decade, with ongoing platform decommissioning and with oil and gas production declining, other opportunities should be considered for those affected. The analysis indicates that those working in UK focused subsurface, drilling, wells 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 the new opportunities are.

Retention of critical skills and capabilities will be key to ensure the ambitions outlined by UK and devolved Governments are realised. This may require targeted interventions to retain those most affected.

For the offshore and site-based workforce, there will also be the requirement for common certification, standards and accreditations (aligned to the People and Skills plan as part of the North Sea Transition Deal).



# THE GREEN(ING) EMPLOYMENT MARKET

The rapidly evolving offshore energy market will require an increasingly flexible, agile and interchangeable energy workforce. Career pathways need to be more diverse, offering a combination of advancement to more senior positions, lateral moves or career changes across different sectors.

According to data from the Office of National Statistics, close to 9% of the workforce change jobs (but not necessarily industry sectors) each year<sup>14</sup> and people will have on average 12 jobs during their working career.<sup>15</sup>

With around 45,000 people currently employed in the regional offshore energy industry and up to 4,000 people therefore likely to change their role on an annual basis, it will be key to future proof skills and competencies and to create a more multi-disciplinary and more agile offshore energy workforce.

The distinct characteristics of the North-East of Scotland economic cluster should enable the region to be a leading contender in the global energy transition space. A place-based approach is crucial to the effective development and implementation of the Scottish Government and Skills Development Scotland's [Climate Emergency Skills Action Plan \(CESAP\)](#).

With every direct and indirect job in the region supporting a further 0.7 induced roles<sup>16</sup>, the North-East is now at a crucial junction. Success will sustain the region's energy workforce at 2021 levels of approximately 45,000 or better for the next decade, whilst failure will see it decline by up to 40% (to 28,000) by 2030.

With future energy jobs in the North-East directly linked to new investments, re-positioning the region as a Global Energy Hub for the energy transition will require over £17 billion investment into new regional renewables activities between 2022 and 2030. The majority of this investment will need to be focused on building the manufacturing and development infrastructure for the growing renewables sector (e.g. capex related activities). This is in addition to ongoing oil and gas investments in the region. Recognising the lead time for consenting and approving new renewables activities and the time required to establish new manufacturing facilities, it is forecast that most of the new jobs in the region will be created post 2025.

Sustaining the regional oil and gas workforce over the coming years will therefore be critical to ensure ready access to people and skills from 2026 onwards. Targeted government and industry funding to catalyse regional investment will also be critical to ensure the region is set up for success, with a primary focus on investment in capital activity with export potential in the regional offshore wind, hydrogen and carbon capture and storage sectors.

<sup>14</sup> ONS 2019 – analysis of job changers and stayers

<sup>15</sup> U.S. Bureau of Labor Statistics 2021 – number of jobs, labor market experience and earnings growth

<sup>16</sup> Scottish Government 2022 - Type II employment multiplier 2018

## MAKING THE SWITCH: KEY CONCLUSIONS

With the North-East of Scotland ideally positioned to become a global leader in the energy transition space, the opportunity exists now to shape a new energy pathway for the region.

With energy becoming increasingly regionalised and focused on clusters, the North-East already has the ecosystem to become a future offshore energy powerhouse. The combination of a highly skilled workforce, a world class supply chain, access to leading universities and colleges, the full spectrum of support services and a 50-year track record in the global oil and gas industry truly differentiates the North-East from other regions in the UK.

This review highlights the material prize for the region.

**Successfully positioning the North-East as a Global Energy Hub and positioning Aberdeen as the net zero capital of Europe will:**

- **Secure up to 54,000 direct and indirect jobs by 2030**
- **Underpin more than 38,000 induced jobs in the region by 2030**
- **Mean the region has attracted over £17 billion of investments in the renewables sector between 2022 and 2030. This is in addition to ongoing oil and gas investments in the region**
- **Be the result of successfully sustaining the oil and gas workforce over the intervening years, ensuring the availability of people and skills from 2026 onwards**
- **Sustain and expand the unique cluster capability to accelerate the net zero agenda in Scotland, in the UK and in other energy basins**
- **Strengthen the region as a global leader in technology and innovation.**

Failure to deliver the ambitions set out in this report will jeopardise the region's energy leadership position and will reduce the offshore energy workforce by up to 17,000 people over the remainder of this decade.

# METHODOLOGY

The 'Making the Switch' Review – the future shape of the offshore energy workforce in the North-East of Scotland was conducted by Robert Gordon University's (RGU) Energy Transition Institute between September 2021 and May 2022.

## The focus of the review was to:

1. Establish North-East of Scotland offshore energy workforce baseline (2021)
2. Determine future regional workforce scenarios (2030)
3. Assess high-level regional workforce supply/demand implications

This review builds on the RGU's UK Offshore Energy Workforce Transferability Review published in May 2021 which 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.

This review has been prepared to 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 offshore/near shore green 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 was greatly appreciated and – where possible – the comments and information received are reflected in this review.

## DISCLAIMER

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Making the Switch

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MAY 2022

