



Paper 4/2 Industry session

For information

1. Purpose

1.1 To provide Commissioners with background information on agenda item 2, an information gathering session hearing from oil and gas industry representatives.

2. Background

2.1 This note provides detail of the participants who have been invited to give evidence as part of this session along with a list of suggested questions. Further background information is also included in the Annex to help inform the session.



What	Agenda item 2: Industry information gathering session
Who	<p>Deirdre Michie, Chief Executive, Oil and Gas UK</p> <p>Dave Stewart, CEO Asset Solutions, Wood Plc</p> <p>Jill Glennie, Director of External Affairs, OPITO</p>
Why	<p>An opportunity to examine the future of the oil and gas sector in light of the new net-zero target.</p> <p>Participants are senior figures in industry and will be able to answer questions covering the role of the oil and gas industry in the energy transition, and what needs to happen to maintain the jobs currently associated with the sector.</p> <p>A selection of some possible questions are included below:</p> <ul style="list-style-type: none"> • Do you see positive examples of traditional oil and gas companies beginning to diversify their business? What can the wider industry learn from the successes (or failures) to date ? (lessons learned) • What would you understand the balance of responsibility between private sector companies and Government to be for bringing about the energy transition? Should Government be taking a more interventionist role or should companies be left to themselves? (economic development) • Are companies doing enough at the moment to secure a positive future for the industry? What action can Government take to either support them or force them to make the transition? (economic development) • Do you see the energy transition as a way of maintaining jobs/economic output in the north east, or are there opportunities for growth resulting from the transition? What are they? (economic development) • There is a high-level vision for the future from the industry (such as OGUK) in a net-zero economy but is this appreciated throughout the sector, for example among smaller companies in the supply chain? What needs to be done to help guide the direction of their business? (economic development) • Are there any particular sub-sectors or workers in certain jobs that are particularly vulnerable with regards to the energy transition/declining reserves? (quality of work/social inclusion) • In terms of the energy transition (growth in hydrogen/ccus/offshore wind etc) what will the impact be for workers – in terms of skills, and type of roles that will be available for them in future? (quality of work)



	<ul style="list-style-type: none"> • If there is a skills transfer that needs to be made (between o&g and low carbon), then how should it be brought about, and who’s responsibility is it? • Does the energy transition and any skills transfer present opportunities for addressing inequalities in the labour market that currently exist? (social inclusion) • Can you see any strategic opportunities for Scottish oil and gas to be a world leader in the development of a net-zero economy? What support is needed from Government to realise these? (economic development) • How engaged are the workforce in the future vision for industry? Do they appreciate how the industry could change over the next 10-20 years? How should they be engaged? (quality or work/communicating change)
<p>Additional background information</p>	<ul style="list-style-type: none"> • Annex A: submission from OGUK • Annex B: submission from Sea Change authors • Annex C: submission from UNITE • Annex D: submission from RMT • Annex E: OPITO report • Annex F: submission from SCCS • Annex G: Scottish Enterprise report – Oil and Gas Diversification Opportunities • Annex H: submission from Skills Development Scotland • Annex I: Oil and Gas Authority Energy Transition Policy Position

Annex A – submission from Oil and Gas UK

OGUK is the leading representative organisation for the UK offshore oil and gas industry. Our membership includes around 400 organisations with an interest in the UK’s upstream oil and gas sector. As the champions of industry, we work on behalf of the sector and our members to inform understanding with facts and evidence, engage on a range of key issues and support the broader value of this industry in a changing energy landscape. From exploration through to decommissioning and located across the length and breadth of the UK, our members are key to safely providing security of energy supply, while supporting around 270,000 jobs and contributing billions of pounds to the economy each year.

Summary

The UK and Scotland’s energy landscapes are changing rapidly, particularly in response to the publication of the advice from the Committee on Climate Change (CCC), and the adoption of national targets for reaching a net zero outcome in Scotland (by 2045) and the rest of the UK (by 2050). OGUK has welcomed the setting of these targets and supports the net zero objectives. We believe the UK’s oil and sector can meaningfully

contribute to the Energy Transition both by the reduction of its' own emissions arising from the production of oil and gas and by enabling the technologies that will reduce the emissions from the use or consumption of oil and gas. The specific tasks in support of this are clearly laid out in our Roadmap 2035¹ which was recently launched with our 2019 Economic Report at Offshore Europe.²

The CCC report provides a realistic blueprint for the transformation of the energy sector which recognises the major contributions that the oil and gas sector will make to the UK and Scotland's net zero future. This transition acknowledges that even in a net zero context, oil and gas will continue to provide a significant share of a much more diverse energy mix through to 2050 and beyond, through the use of emerging technologies (including Carbon Capture and Storage (CCS) and Hydrogen). The share of oil and gas in primary energy use is expected to fall from around 75% today to around one-third in 2050. Today the offshore sector currently meets around 45% of the UK primary energy needs and is capable of providing a similar level of energy security for decades to come.

Having an indigenous energy resource helps to ensure an energy supply we can control, regulate and access. Currently oil and gas production operations account for around 3 per cent of the UK's total greenhouse gas emissions.³ The sector also delivers a range of economic benefits. Production of domestic oil and gas directly accounts for around 1.2 per cent of UK GDP and will continue to contribute billions of pounds of taxes in the future, as well as securing more than a hundred thousand skilled jobs in Scotland and more widely.

As well as delivering secure and affordable energy the sector will also contribute to low carbon solutions that will be required to meeting the ambitious climate change goals. Indeed, many of our members are already in action using their expertise and resources and developing their portfolios to help this process. The North Sea's location and geology mean that it has a competitive advantage when it comes to large-scale emissions mitigation programmes such as Carbon Capture, Usage and Storage (CCUS). The oil and gas industry has the skills, capabilities and expertise to be a key partner in the development of this technology at scale. Our members are already closely involved with five CCUS cluster projects including activities in and around Peterhead. To develop CCUS and Hydrogen production at scale, it is important that governments ensure that the correct commercial and regulatory frameworks are in place to enable it.

Finally, there are many other energy opportunities, both offshore and throughout the energy supply chain, where oil and gas companies are already actively exploring, supporting and investing, including hydrogen, wind, wave, solar and geothermal power. The industry is playing an active role in the energy transition and

¹ Roadmap 2035: <https://www.energyvision2035.com/roadmap-2035>

² OGUK Economic Report 2019: <https://oilandgasuk.co.uk/product/economic-report/>

³ NB These are counted in the UK emission totals but not in Scotland's GHG accounting.

the net-zero economy and with the right support, we are well placed to help realise the benefits it can bring to our economy and to our society.

What does the oil and gas industry need to do to survive into the future, in terms of maintaining jobs and being part of the net-zero economy?

As the UKCS is a mature basin, it is natural that production will return to a position of decline in coming years, which will impact employment across Scotland. However, OPITO/RGU⁴ estimates that 130,000 direct and indirect jobs will still be supported by the industry in 2035 across the UK, in comparison to an estimated 151,000 in 2019 – a decrease of 21,000 jobs. The UKCS workforce will need to be upskilled, to become a more flexible, multi-skilled, technology-enabled workforce enabling a transfer of skills and expertise across different energy sectors and providing ongoing stimulating and long-term careers. Key to achieving this, will be through a managed and planned transition.

The UK offshore oil and gas industry is focused on ensuring that the means by which it produces oil and gas are aligned with the UK and Scottish Governments' net-zero ambitions and pathways. Key to this will be reducing emissions from its own offshore production operations. These greenhouse gas emissions currently account for 3% of the UK's total (approximately 14 million tonnes of CO₂ equivalent). This emissions intensity equates to 24 tonnes of CO₂e per thousand boe produced and will need to be reduced to approximately 4 tonnes CO₂e/ thousand boe, or less, by 2050. This is a significant challenge for the industry and will require concerted effort supported by aligned regulatory policy - for example in relation to the OGA's future licensing rounds, area plans and asset stewardship expectations. Industry will need to progress the use of technologies such as carbon capture and storage at source and the electrification of platforms, among other things, to drive down emissions intensity.

In addition, the Climate Change Committee (CCC) report is clear that the UK economy will require a diverse energy mix that includes hydrocarbons supported by CCUS at scale. To do this, credible commercial, business, and regulatory models will need to be developed. This further requires development of a Hydrogen economy that will need significant natural gas production and processing capabilities. To unlock CCUS and hydrogen will require the skills and expertise of the oil and gas industry and will provide significant opportunity for the supply chain benefitting the UK economy for decades to come. Therefore, the UKCS supply chain will continue to have an important role to play in the future in sustaining highly skilled jobs.

⁴ OPITO UKCS Workforce Dynamics: <https://www.opito.com/policy-and-research/research/ukcs-workforce-dynamics-review>

Are there particular opportunities for the oil and gas sector to become a world-leader in the development of a net-zero economy?

There are many opportunities for the UK offshore oil and gas industry in a net-zero economy as outlined above. In the short to medium term, the industry will need to become a world-leader in producing oil and gas in a more carbon efficient manner – reducing the carbon footprint of its production operations. Achieving this will allow this basin to export its solutions and expertise globally, helping other basins across the world lower the footprint of their operations – an opportunity for both global operators, and for the supply chain to export their products and services.

Over a longer period, the industry can play a leading role in the development of CCUS as well as the Hydrogen economy at home and abroad. The industry has the skills, capabilities, assets and knowledge which will be key to supporting the future delivery of both of these. Increasingly, the safe disposal of carbon will develop into an economic activity in its own right rather than being a bolt-on to other parts of the energy supply chain. Likewise, new bespoke commercial and technological models will be developed to underpin Hydrogen production and supply to serve various heating and transportation needs.

The OGTC is helping to advance the development of net zero technologies with the creation of a net-zero solution centre, a first step toward the sector's ambition to become a hub for net-zero technology solutions. The oil and gas industry in the UK already has a business culture of collaboration, innovation, and a forward-thinking mentality. Continuing to build on this through the alignment of activities being undertaken through, for example the OGTC and the National Subsea Centre, will be crucial to ensuring the continuing positive contribution of the sector to a net zero future.

Is the energy transition is a way of retaining jobs? Are there particular sub-sectors or workers that may be particularly vulnerable to the energy transition, and the basin's declining reserves?

Due to the nature of work in the industry, it is likely that jobs will evolve in coming years due to the impact of technology, with increasing amounts of automation for example. This allows workers to spend a larger portion of time on value-adding activities, as opposed to transactional tasks, for example; enhancing efficiency and productivity levels.

The energy transition will encourage greater diversification across the energy sector, resulting in new jobs in areas as yet unexplored. Many of the skills and expertise acquired within the industry are readily transferable to other energy sectors such as offshore renewables, and in time, will also be applicable to the likes of carbon capture, usage and storage.



Upskilling the workforce so that they are able to fully embrace technology advancements will be key, as will developing common standards and practices across energy sectors to allow for ease of transfer of skills.

OPITO's skills reports offer further insight into how the workforce may evolve in the future.⁵

What does government need to do to help facilitate a just transition for the sector?

Government must play a key overarching role in supporting the implementation and delivery of the energy transition and in particular the pathway for the oil and gas sector set out in our Roadmap 2035. In particular a comprehensive vision and strategy for UK energy policy is needed which also ensures alignment of UK and Scottish energy policy measures. As set out below, a variety of issues and areas will need to be addressed by both governments to develop detailed UK and Scottish energy policy measures which will outline the requirements for meeting net-zero and provide for an attractive environment for investors:

1. Clarifying policy and regulation of CCUS and hydrogen, including making appropriate policy changes to reflect the re-purposing of oil and gas assets to contribute to the wider energy transition agenda (currently being addressed through the two ongoing consultations related to CCUS).
2. Help to clarify interactions with midstream and downstream markets, with respect to CCUS and hydrogen.
3. Work with current regulators and industry to streamline the policy framework which will ensure multi-energy use of UKCS licence blocks.
4. Ensure that the UK maintains its influence over European and international regulatory standards.
5. With input from other key stakeholders, develop a post-Brexit carbon trading mechanism, akin to the current EU ETS.
6. Continue to provide support to the industry to access international markets through funding of DIT, Scottish Development International, UK Export Finance, and other bodies, to help such companies work more effectively across the energy spectrum.

⁵ OPITO's reports: <https://www.opito.com/policy-and-research/research/the-skills-landscape>

Are there positive examples already involved in oil and gas diversifying in oil and gas?

There are many positive examples of where oil and gas companies are already diversifying into other energy sectors, and other sectors, more broadly. Many operators currently invest, and have operations, in the renewables sector, with other investing in the development of CCUS. The supply chain has made a large amount of progress, using skills and technology developed for the oil and gas sector, and applying it elsewhere. The attached document lists some of these examples.

Other useful reports and references:

OGUK Energy Transition Outlook 2018: <https://oilandgasuk.co.uk/product/energy-transition-outlook-report/>

OGUK Workforce Report 2019: <https://oilandgasuk.co.uk/product/workforce-report/>

OGUK Member case studies: included in dropbox for the session

Annex B – submission from ‘Sea Change’ report authors

1. Introduction

We welcome the opportunity to submit evidence to the Just Transition Commission. This submission was written by Anna Markova (Platform) and Greg Muttitt (Oil Change International), on the basis of our co-authored report *Sea Change: Climate emergency, jobs and managing the phase-out of UK oil & gas extraction*.⁶

Platform conducts research, education, and campaigns towards a just future beyond fossil fuels. Oil Change International is a research, communications and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.

2. North Sea oil extraction in comparison to climate targets – implications for the workforce and economy

2a. How does planned oil and gas extraction in the North Sea compare to climate limits?

The policy of the UK and Scottish Governments is to maximise extraction of oil and gas. The Scottish government’s energy strategy includes “maximising the recovery of remaining resources” of oil and gas as a key priority.⁷ While licensing and regulation are reserved matters, the Scottish Government plays both a

⁶ See <https://platformlondon.org/p-publications/sea-change-climate-emergency-jobs-north-sea-oil/>

⁷ Scottish Government. *The future of energy in Scotland: Scottish energy strategy*, December 2017
<https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/pages/2/>

supportive role in relation to infrastructure, skills etc and an advocacy role in urging greater action by the UK government.

However, research by Oil Change International has found that carbon dioxide emissions from the oil, gas and coal in already-operating fields and mines globally will push the world far beyond 1.5°C of warming and will exhaust a 2°C carbon budget.⁸ This means that extracting the 5.7 billion barrels of oil and gas in already-operating fields in the UK North Sea will exceed the UK's share in relation to the Paris climate goals - whereas industry and government aim to extract 20 billion barrels.⁹ Based on this finding, we conclude that the UK and Scottish Governments face a choice between two possible pathways that are compatible with the Paris climate limits:

1. Deferred collapse: continue to pursue maximum extraction, until worsening climate impacts force rapid action to cut emissions globally; the UK oil industry collapses, pushing many workers out of work in a short space of time. Or:
2. Managed transition: begin a phase-out of extraction and a Just Transition for workers and communities, negotiated with trade unions and local leaders, and in line with climate change goals, while building quality jobs in a clean energy economy.

We recommend a managed transition, beginning now. Unless government accepts the prospect of a deferred collapse, the Paris goals imply no further licensing or development of new oil and gas fields.

2b. Managed phase-out of oil and gas extraction – the workforce picture

To demonstrate the scale of the challenge of a managed transition, we have modelled the impact on the oil and gas workforce of ending the development of new oil and gas fields in the North Sea, and instead allowing production from existing fields to decline over the next 20 years.

Taking into account jobs created through decommissioning and forecast retirement in the existing workforce, we estimate that 40,000 existing UK oil workers (direct and supply chain) may need to be in a different industry by 2030.¹⁰ (Due to data limitations, it is harder to accurately estimate the proportion of these jobs that are located in Scotland, however in line with Oil and Gas UK's general workforce statistics, this

⁸ Greg Muttitt, *The Sky's Limit: Why the Paris climate goals require a managed decline of fossil fuel production*, Oil Change International, September 2016, <http://priceofoil.org/2016/09/22/the-skys-limit-report/>

⁹ BBC, 'Enough UK oil reserves 'for at least 20 years of production'', November 2018 <https://www.bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-46137555>

¹⁰ Sea Change pp43-44

corresponds to roughly 15,600 workers in Scotland.)¹¹ While regional and local authorities are already planning for a decline in oil and gas extraction employment, this means a gradual but faster phase-out.¹²

2c. Opportunities in decommissioning

Decommissioning is a potential growth area for oil and gas jobs. In the UK offshore there are over 250 fixed installations, over 250 subsea extraction systems, over 3,000 pipelines and approximately 3,650 wells, all of which must eventually be decommissioned.¹³ Decommissioning relies on many of the same workers and skills that were required for oil and gas exploration and extraction – from well plugging and abandonment, to cleaning and flushing of facilities and pipelines, offshore removals and onshore disposal.¹⁴ Our forecast projects 12,000 decommissioning jobs in the whole of the UK in 2030 and 7,000 in 2040, given the right policies to locate these jobs domestically.¹⁵

3. Economic opportunities associated with transition away from oil and gas

3a. How oil and gas sector expertise can help Scotland succeed in the clean energy economy

There are strong overlaps between the available expertise base in the oil industry and supply chain on the one hand, and the needs of renewable energy industries on the other.

Research by Arup and Scottish Enterprise has indicated which clean sectors are most suitable as targets for diversification for the supply chain of the oil industry. Offshore wind¹⁶ is a straightforward match for some of the capabilities and skills of the oil industry. Scaffolders and marine personnel already work interchangeably on oil and gas and wind installations in many cases. Subsea / pipeline personnel and firms (like Tekmar) will have expertise applicable to subsea cable installations essential in offshore wind. A number of specialist construction supply companies (like Sembmarine and Global Energy Group) are using their skills in offshore wind installations.¹⁷

For other workers and supply chain companies, there are potential matches with geothermal and district heating infrastructure, with investment in water industry infrastructure and with the various elements of the

11 Sea Change p47

12 Aberdeen City Council is considering its economic strategy on the basis of a projected decline of oil extraction rates to 350,000 boe/day by around 2050. But this is far from enough to meet the Paris climate targets, as outlined in Chapters 2 and 3: our modelling of the 'no new development' scenario sees extraction rates fall further to 17,000 boe/day by 2050.

13 Oil and Gas Authority, Decommissioning Strategy, 2016, <https://www.ogauthority.co.uk/decommissioning/strategy/>
Oil and Gas UK, Decommissioning Insight 2017, p.12, <https://oilandgasuk.co.uk/wp-content/uploads/2017/11/Decommissioning-Report-2017-27-Nov-final.pdf>

14 OGUK, Decommissioning Insight 2017, passim.

15 Sea Change p63

16 Scottish Enterprise. *Oil & Gas Diversification Opportunities: Offshore wind*, 2017,

<https://cdn.prgloo.com/media/download/ed941df94689492c90c26e4cf232d192>

17 Scottish Enterprise, Offshore Wind: Oil and gas 'Seize the opportunity' guide, May 2016, pp.19, 23, 26,

<https://www.offshorewindscotland.org.uk/media/1116/sesdi-oil-and-gas-div-guide-offshore-wind.pdf>

new energy system which has to be created, eg storage, hydrogen, wave and tidal and nuclear decommissioning.¹⁸

Some other professions may not be readily adaptable to new sectors; these may be where the greatest efforts are needed in supporting workers' and supply chain firms' transition.

3b. Job creation potential of the clean energy economy in Scotland

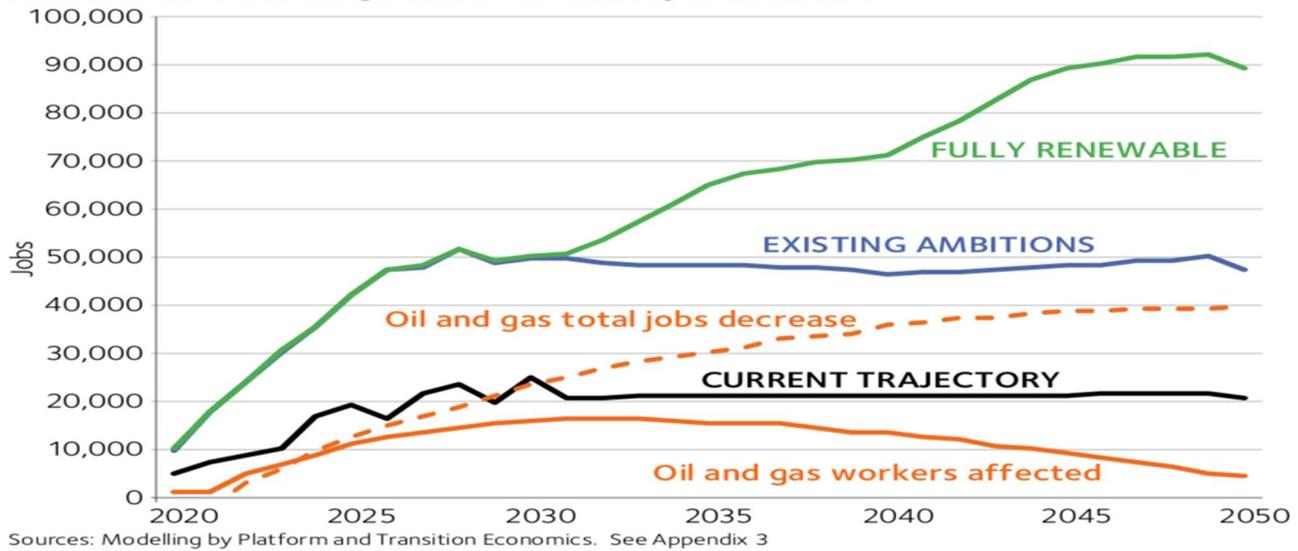
We modelled the potential for job creation in marine renewables, onshore and offshore wind, and energy efficiency retrofits, across the UK in three scenarios. We estimated Scotland's share of the resulting job creation.¹⁹

- In the Current Trajectory scenario (where neither UK nor Scottish Government offer any additional support to the case study industries), new jobs in the case-study clean energy sectors do not replace the decrease in oil and gas jobs in Scotland;
- In the Existing Ambitions scenario (targets proposed as ambitious by industry and policy-makers), the case-study sectors create around 1.3 times as many new Scottish jobs as the overall decrease in oil and gas jobs. Job creation exceeds the number of current oil and gas workers (accounting for retirement) by over a factor of 3;
- In the Fully Renewable scenario (build-out of renewable energy sources to fully power the UK's energy needs from renewable sources by 2050), the increase in Scottish jobs is even greater.

¹⁸ Arup, Opportunities for Scottish Oil and Gas in Heat, Energy and Water, 2017, p.6,
<http://www.evaluationsonline.org.uk/evaluations/Documents.do?action=download&id=864&ui=browse>

¹⁹ *Sea Change* pp45-47

Figure 24: How Scotland’s estimated new jobs in wind energy, marine renewables and energy efficiency retrofits compare to the oil and gas extraction industry jobs decrease, and to the number of current oil and gas workers affected by the transition



Further jobs can be created in other industries mentioned above (e.g. water and waste treatment).

Our modelling demonstrates the considerable potential for employment in wind power, offshore renewables and home retrofits. As more than three new jobs in these industries can be created per current oil and gas worker potentially affected by the transition, this gives us confidence that these industries can support wide-scale re-employment of the oil and gas industry workforce. However, if poorly managed, particularly if no further support is offered to the renewable energy industries or no effort is made to locate the jobs domestically and ensure their quality, a transition to clean energy may lead to limited job creation.

Based on these findings, we recommend that the government increase its ambition in clean energy development, for job creation as well as energy supply, in the ways described below.

4. Opportunities and challenges for government

4a. Need for investment that promotes job creation in Scotland

Investment in clean energy systems in the UK and Scotland is currently far too low.²⁰ In part, this is because private investors are drawn to other, more profitable sectors (including publicly-supported fossil fuels). Targeted investment is needed. One way to enable such investment is through national investment banks such as the proposed Scottish National Investment Bank. Another would be through publicly owned energy

20 House of Commons Environmental Audit Committee, Green Finance: Mobilising investment in clean energy and sustainable development, Sixth Report of Session 2017–19, HC 617, May 2018, p.3, <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/617/617.pdf>

companies, which can additionally make the roll-out of clean technology cheaper (due to lower borrowing rates), faster (instalments driven by climate targets rather than maximising profit), and emphasise local employment and champion local manufacturing by using their procurement powers and role in shaping industrial practices to improve economic activity and labour standards.²¹

There are a variety of international precedents to both approaches. Denmark's wind power success story showcases the potential for public sector financing to kick-start a massive shift to renewables. With a mandated 30% state investment in each windfarm between 1980 and 1990, the Danish government was able to give the industry the boost it needed to set up.²² Public bank KfW has underpinned Germany's energy decarbonisation efforts, with 15 bn Euro in co-financing renewable energy projects in 2015 and 2016 alone.²³

Danish and German publicly-owned energy companies have successfully grown to become major international offshore wind investors. The largest offshore wind company in the world is publicly-owned Orsted from Denmark. Publicly-owned companies from other countries (such as Orsted, Vattenfall in Sweden and Munich's city energy company) already own over 50% of the UK's offshore wind installations.²⁴ Taiwan's publicly owned energy utility Taipower has underpinned Taiwan's rapid shift to offshore wind power with bold infrastructural investments, such as the region's biggest port for offshore wind operations at Taichung.²⁵

4b. Need for infrastructure

UK and Scottish ports have struggled to win contracts for offshore wind turbine deployment. In order to be able to compete for and win big wind turbine deployment contracts, ports may need upgrading before commercial commitment. By providing upfront infrastructure investment, Scotland could maximise the economic benefits of marine energy supply chains. According to a report by BVG Associates for the Department for Business (BEIS), "Most UK ports are operated privately and make investment decisions on purely commercial factors. In contrast many Continental ports are in public ownership and their investment decisions can consider the wider local economic benefits of a project, as well as the direct port revenue.

²¹ David Hawkey et al., *Public Ownership of Energy Companies - International workshop report*, University of Edinburgh, 2018, <https://heatandthecity.org.uk/resource/poec-workshop-report/>
Just Transition Partnership, "Paving the way for a Just Transition", June 2018, <https://foe.scot/wp-content/uploads/2018/07/Paving-the-Way-for-a-Just-Transition-Briefing-for-MSPs-June-2018.pdf>

²² Kyle Smith, "The Danish wind industry 1980–2010: Lessons for the British marine energy industry", *International Journal of the Society for Underwater Technology*, 30, No.1, 2011, pp. 27–33, <https://www.ingentaconnect.com/contentone/sut/unwt/2011/00000030/00000001/art00004>

²³ KfW, "Energie und Umwelt", 2019, <https://www.kfw.de/KfW-Konzern/KfW-Research/Publikationen-thematisch/Energie-und-Nachhaltigkeit/>

²⁴ Labour Energy Forum. Who Owns the Wind, Owns the Future, September 2017, p.7, <https://labourenergy.org/wp-content/uploads/2017/08/Who-owns-the-wind-2017-Labour-Energy-Forum.pdf>

²⁵ Renewables Now, "Port of Taichung embraces Taiwan's offshore wind dream", 13 April 2017, <https://renewablesnow.com/news/port-of-taichung-embraces-taiwans-offshore-wind-dream-565098/>

Speculative investment of public funds in Germany and Netherlands has enabled the establishment of facilities suitable for offshore wind.”²⁶

4c. Skills gaps

The requirements, mindsets and processes of clean industries may be different and require adaptation and additional training. For instance, construction and engineering firms and personnel involved in the oil industry are commonly required to take on bespoke projects, while the offshore wind sector demands mass-produced parts and installations as part of its drive to lower costs. The oil and gas supply chain companies on the west coast of Denmark largely failed to make the adjustment to standardised installations and so missed out on offshore wind sector contracts.

Energy Skills Scotland already works with employers and education institutions to offer appropriate training to broaden energy sector expertise, and the Scottish Government has set up a £12 million Transition Training Fund to help energy sector workers gain skills.²⁷ But for a wholesale transition away from oil and gas, this support will need to be scaled up massively. In order to design such a programme of support, more detailed data will be needed on the skills profile of the oil and gas sector, as well as on the requirements of clean sectors.

4d. Barriers to entry of workers

There are often needless barriers to workers moving from oil and gas to offshore renewables. For example, the Global Wind Organisation, which sets international standards for the construction of wind power facilities, has been criticised by unions for creating a new set of safety training standards that are inconsistent with those in the oil and gas industry – such that highly qualified oil and gas workers may not be eligible to work in offshore wind. Meanwhile, pay and conditions in renewables are often unattractive, compared to the agreements negotiated in the oil and gas industry. Government can influence industry through funding requirements (via the Scottish National Investment Bank as described above, or other forms of public sector participation), licencing (where relevant), and dialogue.

5. Risks of a badly managed transition

5a. Deferred collapse as a result of failing to phase out oil drilling

Given our findings about future oil and gas in relation to the Paris goals, we can conclude that continued oil and gas development will leave the economy vulnerable to a sudden and chaotic collapse in demand when worsening climate impacts force an adequate political response (at the Scottish, UK or global level). Failing to begin an industrial transition now, to allow proper time to adjust, would make the change very costly and

²⁶ BVG Associates, UK Offshore Wind Supply Chain: Capabilities and opportunities, 2014, pp.52-53, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/277798/bis-14-578-offshore-wind-supply-chain-capabilities-and-opportunities.pdf

²⁷ Scottish Government, Transition Training Fund spend: EIR release, 2017 <https://www.gov.scot/publications/foi-17-01842/>

painful for workers and communities. The UK's painful history of forced coal mine closures in the 1980s is a stark warning of the dangers of rapid industry decline where no adequate transition measures and little support is put in place.

5b. Risks to regional economies, particularly Aberdeen and Aberdeenshire

The potential phase-out (as well as any downturns) of the oil industry are a particular challenge for Aberdeen City and Aberdeenshire, where oil and gas jobs account for 11% and 5% of total jobs respectively, according to ONS data.²⁸ Furthermore, the oil industry supports a significant share of local authority revenues through business rates and council tax, and underpins the wider economy. Aberdeen has consistently stayed in the UK's top 10 cities by average wage, dropping from second in 2014 to ninth in 2018.²⁹

In order to diversify away from the oil industry, Aberdeen City Council has produced detailed economic assessments and already invested in infrastructural improvements and hubs for biotechnology and cultural industries. The success of these measures is evident in employment statistics. Aberdeen and Aberdeenshire's overall employment rate dipped to 70% and 78% respectively in 2016 following the 2014 drop in oil prices. After this, the oil industry continued slashing jobs – while Aberdeen's employment rate went back up to 76% and 81% respectively.³⁰

However, greater efforts are needed, as the challenge to diversify remains huge. This is in part due to industrial clustering and the fact that the oil industry spends, and generates, comparatively high amounts of money per worker. High property prices, service costs and business rates can make it hard for other industries to start up or to match the oil industry's contribution. Aberdeen's economy is second highest in UK after London for GVA per job filled.

To meet the need for investment in oil- and gas-dependent regions, the UK and Scottish Governments could develop targeted community development investment programmes backed by national funds in each region most impacted by the phase-out of oil and gas drilling. Designing such programmes could draw on the experience of North Rhine-Westphalia in Germany, where the federal government committed funds to establishing research centres and better transport infrastructure to attract technology-intensive industries into a region previously dependent on coal.³¹ Investment programme budget should be locked in over the long

²⁸ Respectively 21,000 out of 195,400 employees, and 5,700 out of 113,000. ONS, Nomis: Business Register and Employment Survey, accessed 6 December 2018

²⁹ Elizabeth Anderson, "The cities where you can earn the highest wages", The Telegraph, 25 December 2014, <https://www.telegraph.co.uk/finance/jobs/11312096/The-cities-where-you-can-earn-the-highest-wages.html>
Andrew Carter and Paul Swinney, "The UK towns and cities with the highest and lowest wages", BBC, 2 May 2018, <https://www.bbc.com/news/business-43729508>

³⁰ Aberdeen Economic Policy Panel, Aberdeen Economic Policy Panel Report 2018, p.7, <https://www.aberdeencity.gov.uk/sites/default/files/2018-11/Aberdeen%20Economic%20Policy%20Panel%20Report%202018.pdf>

³¹ Sanjeev Kumar et al., The New Social Contract:

A Just Transition, Foundation for European Progressive Studies, 2016, p.16 <http://www.changepartnership.org/wp-content/uploads/2016/09/New-social-contract-FINAL-WEB.pdf>

term. This happened for example in Limburg, Netherlands, where EU structural investment funds were allocated for a period of 25 years to help transition away from coal.³²

5c. Risks to job quality

Much of the jobs potential in clean energy lies in the supply chain, so the employment benefit depends heavily on domestic provision of the work. A recent study by the Scottish Trades Union Congress has found that much of the offshore wind development to date has been carried out by overseas companies, from across Europe and beyond, often at lower workplace standards than would be available for workers in Scotland.³³ If continued, this trend means poor outcomes for Scottish energy workers and knock-on effect for the rest of the economy.

The Scottish government should use its leverage (investment, public sector participation / procurement, permitting or licencing where relevant, and negotiation) as described above to leverage decent work standards including pay, pensions, conditions, and union recognition in workplaces.

Annex C – submission from UNITE

This submission from UNITE was previously provided to the Scottish Affairs committee to inform their 2018 inquiry into the future of the oil and gas industry.

It has been shared by UNITE as an interim submission with the caveat that an updated response will be shared with the Commission following UNITE's policy conference in October.

Industry Overview

North Sea oil and gas remain central to the economy of the whole of Scotland. We continue to press the UK government to support a long-term strategy to maximise economic recovery. Unite is clear on the need for immediate action to support the oil and gas sector – supporting a roadmap based upon clear principles which deliver certainty for the industry. We need genuine co-operation between government, industry and trade unions to alleviate the increasing pressure on the sector while protecting employment rights.

We support calls for the UK and Scottish governments to pull together an industry summit which would regularly meets. However, moves to change the taxation regime must be tightly monitored and regulated at

³² Ben Caldecott et al., Lessons from Previous 'Coal Transitions', IDDRI and Climate Strategies. 2017, p.8
https://coaltransitions.files.wordpress.com/2016/09/coal_synthesisreport_v04.pdf

³³ STUC, Broken Promises and Offshored Jobs: Employment in the low-carbon and renewable energy economy, April 2019,
<https://www.gmb.org.uk/sites/default/files/Broken%20promises%20and%20offshored%20jobs%20report.pdf>

both Scottish and UK level with employers providing tangible evidence that they are used to protect jobs, conditions and health and safety.

Support for the industry should include but not be limited to urgent action on government revenues from offshore oil and gas. The Treasury has a range of taxes that impact on the industry, most notably the Supplementary Charge on Corporation Tax, which reflects the exceptional profits the industry made in the boom years. Unite has advocated changes in the North Sea tax regime to stimulate investment on the basis that it does not lead to an assault on the workforces terms and conditions.

The North Sea cannot be left exclusively to market forces because the sector is of vital economic interest and paramount to the security of supply. There is a national interest to be taken into account. The UK and Scottish governments have been slow in response to the deteriorating situation in contrast with support for the UK's new nuclear fleet. The industry needs to have confidence that they can invest for the future, and certainty about the fiscal framework for a sustained period to see it through the current crisis. While tax changes are a necessary component in the strategy, it will be insufficient to going forward to maximise extraction. Rather, the key issue if activity is to be maintained is the injection of fresh capital.

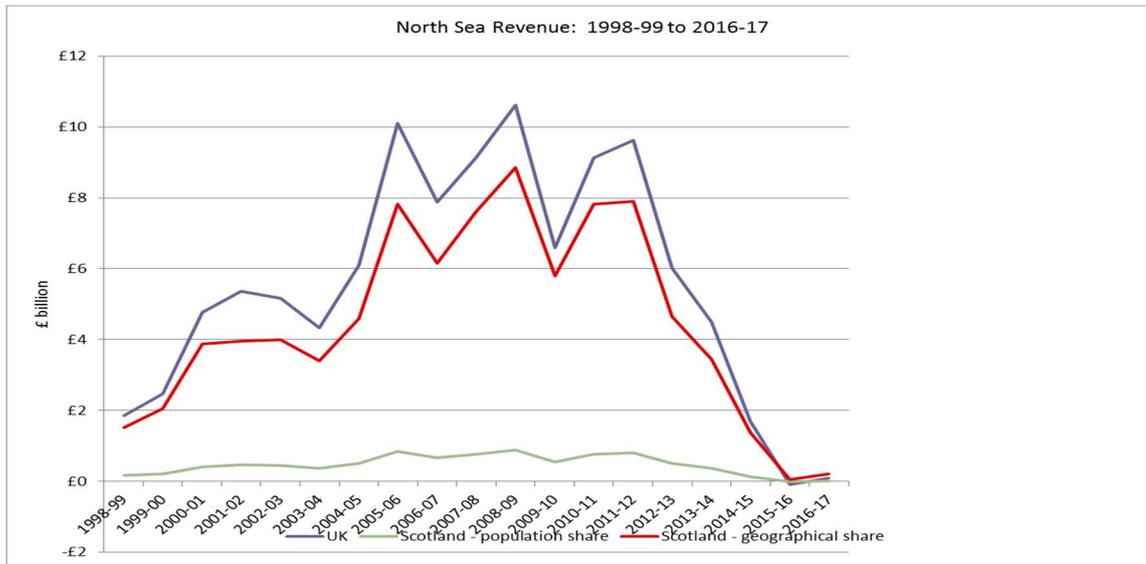
The Oil and Gas Authority (OGA) has a strong mandate to maximise production, however, we need more imaginative policies including the usage of Scottish and UK government borrowing powers to leverage money into the sector including public stakes in a way that it has done so for the nuclear sector. The below table illustrates that while the price of oil has risen to around \$80 per barrel the lasting effects of the downturn remains.

Geographical Share of North Sea Revenue: Scotland 2010-11 to 2016-17							
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
UK revenue	9,135	9,619	6,020	4,499	1,691	-80	84
Licence fees	69	67	69	71	70	72	72
North Sea corporation tax	7,608	7,520	4,214	3,310	1,544	410	661
Petroleum revenue tax	1,458	2,032	1,737	1,118	77	-562	-649
Scottish geographical revenue	7,830	7,900	4,643	3,448	1,374	56	208
Licence fees	61	56	57	58	58	59	59
North Sea corporation tax	6,732	6,296	3,485	2,718	1,269	335	540
Petroleum revenue tax	1,037	1,548	1,101	672	47	-338	-390

Source: Scottish Government (GERS 2016-17)

Oil revenues were as high as nearly £8bn in 2011-12 for Scotland but are now just £200m. In March 2013, the Office for Budget Responsibility had forecast oil revenues of £4.8bn for 2016-17, while the Scottish

Government forecast revenues of between £4.2bn and £10.7bn for 2016-17.³⁴ However, the latest quarterly figures show that taking account of Scotland’s geographical share of North Sea oil revenues there was a return to a surplus, with tax revenues rising to just over £1 billion.



Source: Scottish Government GERS (2016/17)

Therefore, the Scottish and UK governments must work to support the whole supply chain in the North East and across the country. We have repeatedly voiced our disappointment that the UK government’s Oil and Gas Workforce Plan, published on 6 July 2016, fell short of developing a strategy to arrest decline in the industry. The oil and gas industry lost 150,000 jobs since its peak in 2014.³⁵ Moreover, Aberdeen area is estimated to lose a further 5,500 energy sector jobs by 2027 according to Skills Development Scotland.³⁶

Following a joint report by the Department for Business, Innovation and Skills and the Department for Energy and Climate Change, Unite also reiterated its calls for a summit of key industry figures and ministers from the Scottish and Westminster governments to produce an action plan to save the offshore oil and gas industry. The report failed to address the race to the bottom which we are seeing in pay, terms and conditions and safety, while tens of thousands of jobs are cut.

³⁴ <https://fraserofallander.org/scottish-economy/gers/government-expenditure-and-revenue-scotland-2016-17/>

³⁵ <http://www.bbc.co.uk/news/uk-scotland-41122892>

³⁶ <https://www.energyvoice.com/oilandgas/north-sea/160594/aberdeen-suffer-5500-oil-job-losses-report-says/>



Decommissioning

Decommissioning remains a key issue for the industry, requiring public support. Unite strongly believes that a coherent plan must be established to ensure as much of the work as possible is retained in Scotland – and the UK.

The Oil and Gas Authority is tasked with developing a plan and timetable for developing the infrastructure that will support decommissioning. According to DeCom NS (October 2014) forecasts indicate that the overall decommissioning expenditure in the North Sea could be between £1.1bn and £2.6bn per annum, and is estimated to reach over £17bn for the period between 2014 to 2022. The Financial Times in January 2017 also reported that oil companies are forecast to spend around £53bn from 2017 winding down North Sea operations.³⁷

Scottish Enterprise estimates that decommissioning activity in Scotland over the next 10 years could be valued at between £8.3 billion and £11.3 billion - supporting peak employment of 16,925 to 22,775 jobs.³⁸ There will be over 150 decommissioning projects in the UKCS by 2025 with over 1,200 wells are forecast to be plugged and abandoned over the next decade, representing close to 30% of the total number of wells on the UKCS that will eventually require decommissioning.³⁹ In this context, Unite welcomes the Decommissioning Centre of Excellence which will be tasked with addressing the current and future challenges of the industry. Yet, more strategic government action and regulation must be enacted to ensure that as much of the work as possible is undertaken in Scotland – and wider UK.

Norway, for example, also regulates its decommissioning sector through the Petroleum Act, *'throughout all phases of petroleum activities, the industry is required to take environmental concerns into account and show consideration for other users of the sea.'* Under this act, a plan for decommissioning must be submitted to the ministry between two and five years before the oil production licence expires. The plan consists of an impact assessment and plans for disposing installations, including costs and environmental consequences. The purpose of this act is to employ only the 'most skilled offshore workers'; to ensure no mistakes are made which could damage the environment, and to prohibit disused offshore installations remaining in place, with

³⁷ <https://www.ft.com/content/9b1d17d0-d425-11e6-b06b-680c49b4b4c0>

³⁸ <https://www.scottish-enterprise.com/knowledge-hub/articles/publication/oil-gas-decommissioning-action-plan>

³⁹ Oil and Gas UK, Decommissioning Insight (2015).

limited exceptions.⁴⁰ Norway has created four facilities that have a permit for receiving and processing disused shelf facilities.⁴¹

It is estimated that there are more than 8,200 wells in the North Sea that are active or suspended and awaiting P&A with the majority of these located in the UKCS, which accounts for 61% of wells.⁴² Dismantling structures requires specialist equipment and is high value work in a competitive market. Land-based dismantling of topsides requires deep water port facilities such in Dundee or Nigg, but to secure this work upfront further investment is needed in facilities. The Lerwick Port Authority is also investing around £30 million into extending its quays and developing deep-water berths.⁴³ The Montrose Port Authority will be investing £15 million to build on previous upgrades to the harbour to include more deep-water berths and heavy-lift pads.⁴⁴

Despite these substantial opportunities, Unite has deep concerns that Scotland does not have a coherent strategy to benefit from decommissioning following a Norwegian port winning a contract to decommission Maersk's Janice Floating Production Unit after Scottish firms missed out on the decommissioning work following a tendering process.⁴⁵ The Oil and Gas Authority Report titled 'Decommissioning Strategy' published in June 2016 further stated there is a need for, "*a clear strategy and a delivery programme, with concerted effort and strong stakeholder commitment across the industry.*"⁴⁶ Unite supports this objective but we presently believe there is no 'clear strategy' for decommissioning in Scotland, which must be addressed and involve the trade unions directly.

The aforementioned report highlighted that high decommissioning costs are, "*driven by a number of factors. For example, there is the immaturity of the decommissioning industry and a lack of direct experience by operators and the supply chain.*" As such, Unite believes that the Scottish and UK governments must intervene in order to explore the opportunities to leverage investment into the sector including state borrowing powers to offset a lack of investment by the private sector, to help address capacity issues and to proactively assist in reducing decommissioning costs.

⁴⁰ Norway premises its decommissioning framework on the following assessments: 1. Projections of the volume of offshore decommissioning in the years ahead, and the quantities of different waste materials to be recycled. 2. The decommissioning capacity available today, and Norway's needs in the future, based on the timing of decommissioning on the Norwegian continental shelf and projections of the import of installations for decommissioning. 3. The environmental implications of decommissioning large installations of this type, and whether the authorities need to introduce requirements or take action specifically related to the companies involved in these activities (specific techniques to be used, monitoring, control, etc). 4. Implications of these activities for other sectors (health, fisheries, land use, etc). 5. Which Norwegian legislation applies to decommissioning of offshore installations, and which authorities are involved in licensing, etc. 6. Which international rules are applicable to these activities. 7. Proposals for new measures and instruments at national or international level to address the impacts of decommissioning operations. Source: Norwegian Climate and Pollution Agency: <http://www.miljodirektoratet.no/old/klif/publikasjoner/2761/ta2761.pdf>

⁴¹ <http://insights.claxtonengineering.com/how-does-decommissioning-work-in-norway>

⁴² Ibid.

⁴³ <http://www.shetnews.co.uk/features/showcases/14824-showcase-innovative-new-pier-to-become-fishing-industry-hub>

⁴⁴ <https://www.energyvoice.com/oilandgas/decomm/124662/decomm-series-montrose-punch-weight-decommissioning-market/>

⁴⁵ <https://www.energyvoice.com/oilandgas/north-sea/116276/maersk-oil-grants-janice-decommissioning-contract-norwegian-port/>

⁴⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/533973/OGA_DECOMM_v1.1.PDF

However, Unite also wishes to reemphasise while it is correct that we initiate a National Decommissioning Strategy to plan for the future and to capture projected decommissioning works, we must ensure the focus remains on extracting up to 20bn barrels of oil and gas estimated in the UKCS to ensure the maximum economic recovery.⁴⁷

Skills and Work Practices

About 10,000 new oil and gas roles are required it is estimated over the next 20 years to cope with the changing demands of the industry. The recent UKCS Workforce Dynamics Review by Opito (May 2018) stated that around 40,000 recruits are needed with a quarter of those roles currently not in existence.⁴⁸ The UK government's Oil and Gas workforce plan in July 2016 further acknowledged:

There is also a risk that the UK's highly-trained niche engineering and technical skilled workers, employed in areas such as research and development, migrate to other parts of the world where their skills are in demand.

Moreover, over 80,000 workers are likely to retire or leave the sector for other reasons by 2035 according to the OPITO report. Previous research conducted by UK Commission for Employment and Skills' (UKCES) in March 2015 also showed that the substantial shortage of skills is the most important challenge currently facing the energy sector, which despite affecting all key occupations, the taskforce workplace report identifies this relates to: "...predominantly engineers and technicians who are in limited supply despite high levels of demand."⁴⁹

Unite notes that the UK Government has divided UK industries into 'high, medium or low priority' categories for the forthcoming Brexit negotiations, with the steel, oil and gas sectors marked as 'low'. This demonstrates the UK Government's failure to link the issues of Brexit and industrial strategy. Unite is clear that a proper industrial strategy is needed to deal with Brexit and develop the UK's infrastructure and industrial base for the post-Brexit future.

In the context of Brexit, there is an urgent requirement for a coherent skills strategy to ensure the oil and gas industry responds to the challenges of the future. Unite believes this must include a targeted assessment of the impact of any work restrictions which in all probability will apply to the industry following the UK ending the freedom of movement of labour. This will potentially exacerbate the skills gaps and shortages already prevalent in the industry. For these aforementioned reasons, Unite strongly believes that full devolution of

⁴⁷ <https://www.ft.com/content/9b1d17d0-d425-11e6-b06b-680c49b4b4c0>

⁴⁸ <http://www.bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-44067949>

⁴⁹ Sector insights: skills and performance challenges in the energy sector. Evidence Report 90, UKCES, March 2015.

employment law, full control over skills and apprenticeships and linking it into our wider education system is critical. These issues must be addressed in a joined-up and strategically coherent manner through industrial sector forums to target and address key growth areas of our economy. As Murray and Roy (2016) have argued with the transfer of these powers,

....comes the opportunity to deliver a much more coherent package of support for those out of work (and at threat from being out of work) which encompasses Scotland's entire school education, higher & further education, training, skills, apprenticeship and enterprise policies.⁵⁰

- Concomitant with the previous points is the growing precarious 'contractual' nature of those working in the industry. Unite representatives have identified an increasing trend of casualisation through non-permanent contracts. Companies are utilising agencies and bogus self-employed staff to operate on offshore units, which has clear health and safety implications.
- Unite also welcomes the recent announcement by Shell that they plan a review of their offshore model including the current three weeks on three weeks off shift rotas, a pattern adopted by numerous employers in the North Sea.
- Unite has argued that spending three weeks at a time offshore, instead of two would have dire safety implications as well as implications for the general mental and physical health of workers.
- A report by Robert Gordon University confirms this. The report identifies workers on three-week, equal-time rotas were nearly twice as likely to experience ill health as those on two on two off shifts, leading to issues with relationships, mental and physical exhaustion, not being fully focused and issues with depression.
- These issues when combined with the precarious nature of the industry are a further distraction that workers employed in such a hostile and dangerous industry should not be exposed to. Unite would like to see these three week shift rotas abolished. Unite believes that no one should be expected to work twenty one days in a row, working twelve hour shifts, being pushed to the limits of what is safe mentally and physically. There can only be one outcome if this level of pressure is sustained, one that can lead to mistakes that could ultimately lead to a major incident.

⁵⁰ <https://fraserofallander.org/2016/08/05/its-the-economy-scotland/>



Unite Action Points

1. For the OGA to ensure it fulfils its objective of 'maximum economic recovery' with an estimated 20bn barrels still to be extracted in the UKCS. The OGA in cooperation with the UK and Scottish governments must initiative strategic public stakes in the offshore sector including infrastructure investment (e.g. pipelines) through discussions with government, industry and trade unions to facilitate co-investment;
2. For the UK and Scottish governments must use (new) borrowing powers and national investment banks to enact the strategic public stakes to support the sector in dialogue with the OGA;
3. For the UK and Scottish governments in consultation with local authorities, industry and trade unions to initiate a comprehensive national decommissioning strategy and to bring forward legislation which supports the emergent industry to capture the opportunities the multi-billions pounds industry provides like Norway;
4. Request the OGA to undertake further research to assess employment prospects, the skills gaps and shortages in the UKCS in the context of Brexit, the degree of transferability of skills to the emergent decommissioning sector over the medium term and the long term effects of unsustainable shift rotas.

Annex D – submission from RMT

Potential impact of the energy transition on the region/industry/workforce

The total offshore oil and gas workforce fell again in 2018 by around 5% to just under 260,000.⁵¹ This is a 44% fall in four years. The number of staff employed offshore remained the same at around 38,000.

The potential impact on the workforce and the region of the transition from offshore oil and gas to offshore renewables, particularly wind will be extremely damaging if left to market forces. The offshore oil and gas industry itself estimate that meeting the net zero-carbon target for the Scottish and UK economy by 2050 will require £1 trillion investment.

This is an enormous figure that is hard to engage with, as it is based on some significantly variable factors such as the pricing of renewable energy, storage capacity, skills and the development of the domestic

⁵¹ Pg 10, *OGUK Workforce Report 2019* 23 Aug 2019

renewables industry. Nevertheless, it does illustrate the scale of the challenge to Government, society and offshore workers in Scotland.

There is major potential in mitigating any reductions in total (direct and indirect) employment and we are pleased to see that planning to avoid a disastrous transition for workers and communities is one of the aims of the Just Transition Commission.

However, RMT is clear that we must not see any employment lost amongst offshore oil and gas workers as a result of the move toward a low carbon economy. We must have in place practical and enforceable measures to protect employment well in advance of carbon reduction targets set by Government.

The average age of an offshore oil and gas worker is 42.5 years and it is clear that we need a just transition strategy that utilizes the existing skills base as effectively as possible across existing and emerging offshore energy sectors.

Firstly, growth areas of decommissioning and offshore wind, including maintenance will be significant strands in a just transition.

On decommissioning, there is an urgent need to build onshore capacity in Scotland and the UK to receive, dismantle and recycle decommissioned offshore oil and gas infrastructure. Ports including Aberdeen, Methil, Nigg, Dundee and Rosyth should be able to receive the topsides and sub-sea infrastructure that will be decommissioned over the coming years. Infrastructure investment by the Scottish and UK Government should reflect this priority and expand capacity at these and other ports.

Annual decommissioning investment of £1.5bn is expected over the next decade. To date, the UK taxpayer has footed over half of the existing £8.2bn North Sea decommissioning bill:

Year	Decom Tax Relief ^[1] from Corp. Tax (£m)	Decom expenditure ^[2] (£b)	% decom tax relief
2013-14	635	1.1	57%
2014-15	750	1.1	68%
2015-16	965	1.3	74%
2016-17	670	1.2	55%
2017-18	685	1.7	40%
2018-19	1,040	1.8	57%
TOTAL	4.745 billion	8.2 billion	57.8%

This public investment must be made conditional on oil and gas companies funding investment in port capacity to handle major decommissioning contracts, with the associated boost to direct and indirect employment, particularly in the north east and eastern regions of Scotland.

Secondly, increased employment in manufacturing and infrastructure development associated with changing transport fuels. For example, the advent of low Sulphur fuels in shipping and electric vehicles are the first major steps to zero emission transport.

In shipping in particular, Scotland is in an advantageous, with the Scottish Government's recent nationalisation of Ferguson Marine Engineering Ltd offering a golden opportunity to put Scotland at the forefront of the international drive to decarbonise ship design, build and operation. It is essential that the Just Transition debate is a comprehensive assessment of the implications of the decline in hydrocarbon exploration, production and usage.

Thirdly, major investment in transition training, specifically for offshore oil and gas workers to transfer their skills to the renewables and broader maritime sector.

And finally, moves in Scotland, the UK and across the world to a net zero-carbon economy will inevitably reduce use of cars, specifically the end of the internal combustion engine and revolutionise non-hydrocarbon home heating systems.

^[1] Combined Corporation Tax and Petroleum Revenue Tax reliefs contained in HM Treasury *Estimated Cost of Principal Tax Reliefs* January 2019

^[2] Pg 6 OGUUK – *Business Outlook 2019* March 2019

What is the transition the industry/sector in the north east needs to make if it is going to survive and prosper into the future?

There are many aspects to the transition that will be required, from industry and Government, as well as from workers and their trade unions.

Some jobs will transfer from offshore installations to onshore and ship-based locations. In particular, jobs on mobile drilling units will change radically, with different types of jack-up vessel required to install offshore wind turbines through a different, non-exploratory process.

Offshore workers involved in safety maintenance will also see a transfer to shore-based work and a different set of safety standards to monitor and report on.

Workers currently employed as caterers on offshore installations will see a transfer to ship-based work, with jobs on accommodation vessels, special operation vessels and other specialist ships most likely to fit their skill set, with only minor re-training requirements. The UK Government has predicted an increase in demand of 21,000 for 'Hotel and Other' Ratings (including catering grades) by 2026.⁵² The Offshore catering workforce is ideally suited to meet this demand and we would like to see this argument made strongly to and within the Just Transition Commission.

Work in maintaining offshore wind farms and, to a lesser extent, tidal energy units (subject to successful development of the technology) will be a major difference.

Existing collective bargaining agreements covering commercial Contractors, Caterers, Divers and Drillers in the offshore industry could also have a role to play, if only in identifying the constituency of workers most vulnerable to the negative aspects of transition.

In the short term, the Scottish Government should be looking at ways to reduce the enormous 'constraint' payments the taxpayer continues to make to wind farms (mainly onshore) not to produce energy when storage capacity is reached.⁵³

As more offshore wind farms such as Beatrice and Inch Cape come online, it is essential that storage capacity is increased, so that 'constraint' payments from the taxpayer do not subsidise private profits. And if constraint payments continue then they must be tied to a commitment to spend that subsidy on training and employment for Scotland's new generation of energy workers.

⁵² Pg. 36 *UK Seafarer Projections* January 2017

⁵³ <https://www.ref.org.uk/ref-blog/348-constraint-payments-to-wind-farms-in-2018>



The oil multinationals historically active in all sectors of the North Sea have finally woken up to the need to diversify their asset base, from oil and gas installations to offshore renewables, especially wind. Shell, Total, BP and others have notified investors that they are seeking to enter the offshore wind market and over half of trade association OGUK's members have 'diversified into other energy sectors.'⁵⁴

Whilst that is an important hurdle to clear, trade unions like RMT organizing offshore oil and gas workers of today can see some significant threats in a transition that is handled badly, i.e. offshore workers are jettisoned with next to no support in re-training to work in the expanding offshore renewables portfolio of the oil and gas majors.

With nearly 80% of offshore oil and gas workers (including the vast majority of RMT, Unite and GMB members) employed by contractors rather than the oil majors, it is absolutely essential that the STUC use its position on the Just Transition Commission to argue for the North Sea oil and gas industry to work with their contractors, as part of Vision 2035 to ensure that their oil and gas workforce are supported in re-training and finding work in the offshore renewable sector if they wish to.

We would argue that the trade association Oil and Gas UK would be in the ideal position to ensure that there is a Just Transition for offshore oil and gas workers, and not just the oil and gas multinationals.

The development of the European Offshore Wind Deployment Centre in Aberdeen Bay is also extremely encouraging, not just from the technological development of wind farms but in terms of a just transition from oil and gas to renewables. This will require an honest and open debate, in which trade unions are included at every stage. We hope that the Just Transition Commission can fulfil that role in that context.

In terms of emerging technology which would support the development of the UK decommissioning sector, we support continued investment in carbon capture usage and storage (CCUS).

According to a recent report by the UK Parliament's Public Accounts Committee,

*CCUS could be essential for decarbonising the economy at the lowest cost, but it is currently too expensive to be commercially viable.*⁵⁵

It is clear from an employment and environmental perspective that an innovative use of decommissioned oil and gas infrastructure to store large amounts of unwanted carbon, even temporarily, could be a welcome solution.

⁵⁴ Pg. 35 OGUK *Economic Report* 4 Sept 2019

⁵⁵ Pg 7 PAC Committee HC1742 *Public cost of decommissioning oil and gas infrastructure* 27 March 2019.

Encouragingly, the National Oceanography Centre (NOC) is carrying out research work into secure storage of carbon dioxide under the sea-bed.⁵⁶ This has the potential to make CCUS viable and would utilise decommissioned infrastructure. The seafarers working on the NOC vessel RRS James Cook, covered by an RMT collective bargaining agreement, are supporting this extremely important scientific research and also provide a positive example of employment practice in the decommissioning and wider offshore energy supply chain.

This innovative use of decommissioned offshore oil and gas infrastructure could make a significant contribution to the reduction of carbon emissions and facilitate a just transition for workers.

What needs to happen to secure a positive future for the region, workforce, the industry?

Clearly, the Scottish Government's Transition Training Fund (TTF) needs further investment and the qualifying criteria re-drawn to ensure that offshore oil and gas workers receive the help they need to re-train. The £12m fund to date, although welcome, is insufficient to effect change on the scale required and the criteria used has seen too many offshore workers applications knocked back.

Launched in spring 2016 the TTF is the only publicly funded support for workers to transfer between the offshore energy sectors. Up to March 2018, under half of the applicants for assistance in transferring from offshore oil and gas to offshore renewables were successful.⁵⁷

RMT also have long-standing concerns over the lack of regulatory oversight conducted by Government of new training standards in the offshore wind industry, particularly the effect that this is having on the transition of qualified offshore oil and gas workers into the renewables sector.

Barriers in the form of extra costs exist to transferring from the offshore oil and gas industry into the offshore wind industry which are the direct result of the training standards developed and promoted by the Global Wind Organisation (GWO).

The OPITO-approved Basic Offshore Safety Induction and Emergency Training (BOSIET) qualification that all offshore oil and gas workers need to obtain before going to work is not accepted by GWO member companies, although training providers are offering it as a qualification accepted in the offshore wind farm sector.⁵⁸

⁵⁶ <https://www.noc.ac.uk/news/world-first-experiment-will-provide-confidence-sub-seabed-carbon-dioxide-storage>

⁵⁷ Written Answer of 6th March 2018 to Question S5W-14522 John Finnie MSP

⁵⁸ <https://www.warsashacademy.co.uk/courses/course-pages/bosiet-and-escape-chute-training/course-details.aspx>

Major offshore wind employers such as Ørsted, Vattenfall, SSE, E-on, Equinor and MHI Vestas are members of the GWO. In October last year, RenewableUK dropped their own training standards in favour of the GWO standards.⁵⁹

The fundamental point is that there is no mutual recognition agreement between the offshore oil and gas and offshore wind sector regarding basic training standards and qualifications. This is hindering the smooth transition between the sectors that is in everyone's interest.

Government and industry, working with trade unions, must make it easier for offshore energy workers to transfer between sectors without compromising safety or terms and conditions of employment. This should be done through standardisation of the basic training requirements and the Scottish Government should be pressed to commit to taking this matter up with the offshore industry training body OPITO.

In the longer term, the European Offshore Wind Deployment Centre and ORE Catapult must also work with the Scottish Government and trade unions on the skills implications of the transition from hydrocarbons to a net zero carbon economy.

Annex E – OPITO reports

OPITO have highlighted two reports relevant to the information gathering session.

1. [UKCS workforce dynamics: the skills landscape 2019 -2025](#)

[Available to read here](#)

This report outlines how advances in technology, internationalisation and the transition to a lower carbon future are accelerating changing skills demands in the oil and gas sector.

2. [UKCS workforce dynamics: shaping the skills of tomorrow](#)

[Available to read here](#)

This report assesses the changing skills requirements for the industry over the next 20 years. Research findings indicated that:

- On the basis that the industry can achieve its goals around Vision 2035 and the broader energy diversification, the workforce requirements are estimated to be around 130,000 people in 2035
- Over 80,000 workers are likely to retire or leave the sector for other reasons by 2035

⁵⁹ http://www.globalwindsafety.org/gwo/news/news_q4_2017/renewableuk_withdraw_ruk_training_standards.html

- More than 40,000 new people will need to be recruited into the industry over the next 20 years, including 10,000 in posts that don't exist today.

Annex F – submission from Scottish Carbon Capture and Storage

CCS in a just transition

Scotland needs to plan for a just transition for workers in the oil and gas industry. At the same time, the oil and gas industry has a crucial role to play in enabling a just transition for workers in other parts of the Scottish economy.

The future of the oil and gas industry in a net-zero world is inextricably linked to carbon capture and storage (CCS)

- The oil and gas industry needs CCS to be operational in order to allow continued use of its products.
- CCS deployment needs the knowledge, skills, experience and assets in the oil and gas industry to make it happen.

Geographically, the oil and gas industry and CCS operate in the same place: the sedimentary basins where oil and gas have been produced in the UK offshore areas hold the depleted oil and gas fields and saline aquifers that make the most suitable sites for securely storing carbon dioxide (CO₂) deep under the offshore subsurface.

CCS – a necessity, not an option

Carbon capture and storage involves a suite of technologies to separate CO₂ from other gases (for example the flue gases from a steel plant), compress and transport the CO₂, and then inject it into offshore geological formations, where it is trapped permanently⁶⁰. In this way, CCS prevents greenhouse gas emissions reaching the atmosphere.

Emissions from industry account for around 20% of Scotland's greenhouse gas emissions.⁶¹ Industry accounts for 21% of Scotland's gas use, 4% of its petroleum use and 70% of its solid fuel use.⁶²

⁶⁰ For more information, see the SCCS briefing, *What is CCS?*

⁶¹ Scottish greenhouse gas emissions 2017, Table B1: <https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/3/>

⁶² Department of Business, Energy and Industrial Strategy (2019) *Digest of United Kingdom Energy Statistics 2019* (Table 1D). Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/822305/DUKES_2019_MASTER_COPY.pdf

Some industries might be able to switch to renewable electricity to replace fossil fuels or, once it becomes available, to hydrogen: both of these options would enable the industry to keep producing goods but without (or with much reduced) CO₂ emissions.

However, this will not be an option for many industries. For those that have a high heat demand that can only be practically met by fossil fuels, or that have CO₂ emissions as an unavoidable part of the process – such as cement manufacture, CCS is the only option for decarbonising.

Without CCS, these industries will not be able to operate in a net-zero world, so would have to cease production. This would affect not only those directly employed, but those in supply chain and other induced jobs as well.⁶³

The Committee on Climate Change described CCS as “a necessity, not an option”. Part of the reason the CCC recommended that Scotland set a target for net-zero emissions by 2045 is its CO₂ storage potential.⁶⁴

Capture rates

CCS can capture close to 100% of emissions from a particular source. This may come as a surprise to many people, as a capture rate of 90% is often quoted. However, 90% is just a figure that was felt to hit a balance between efficiency and cost of capture – in fact, near-100% capture rates have always been possible, and recent research suggests that the additional cost of higher capture rates is much lower than previously thought.⁶⁵

Security of storage

Researchers have built on the experience and data from Scotland’s oil and gas industry to identified the best sites for geological CO₂ storage: porous, permeable rock; overlain with impermeable cap rock; at a depth which will keep CO₂ in a dense phase; without features that would allow the CO₂ to migrate to the surface.⁶⁶

Geoscientists at the universities of Aberdeen and Edinburgh have modelled CO₂ storage using a worldwide database of information from natural CO₂ and methane accumulations and hydrocarbon industry experience, including engineered gas storage, decades of borehole injection, and laboratory experiments. They found

⁶³ Turner, Karen and Alabi, Oluwafisayo and Low, Ragne and Race, Julia (2019) *Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report)*. Available at: <https://strathprints.strath.ac.uk/67391/>

⁶⁴ Committee on Climate Change (2019) *Net Zero: The UK’s contribution to stopping global warming*. Available at: <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

⁶⁵ Feron et al (2019) *Towards Zero Emissions from Fossil Fuel Power Stations*. Available at: <https://www.sciencedirect.com/science/article/pii/S1750583618308934>

⁶⁶ ETI (2016) *Strategic UK CCS Storage Appraisal*. Available at: <https://www.eti.co.uk/programmes/carbon-capture-storage/strategic-uk-ccs-storage-appraisal>

that well-regulated storage⁶⁷ is extremely secure, more than meeting the IPCC's requirement of 99% security over 100 years.⁶⁸

The role of CCS in a just transition

A just transition will be needed for workers in all high-emitting industries – not just oil and gas. Using CCS means that manufacturing industries can keep producing, reducing the impact on their workers of the requirement to reduce emissions.

CCS deployment will have immediate, direct benefits for workers:

- The roles and skills needed in CCS map very closely to those needed in the oil and gas industry, providing the opportunity for jobs with minimal need to re-train.
- By enabling high-emitting industries to continue production, CCS retains jobs in industry, and those in the supply chain and wider economy that support them.⁶⁹

It also has indirect benefits:

- Once CCS infrastructure is in place, it allows for 'negative emissions' – capture and storage of CO₂ from biogenic sources, or even directly from the air. This means that emissions from other sectors – such as farming – can be offset, allowing production to continue.
- Having the ability to use CCS means that natural gas – methane – can be used to produce hydrogen, with the CO₂ by-product captured and stored. This hydrogen can then replace fossil fuels in heating and transport⁷⁰, as it does not produce CO₂ when it is burnt.
 - This means the potential for more home energy jobs, adapting gas boilers to accept hydrogen.
 - It also means there could be construction and engineering jobs in providing the infrastructure to distribute hydrogen for vehicles.
 - Having a ready supply of hydrogen allows decarbonisation of heavy transport vehicles, such as HGVs, trains and even ships.
 - It means a continuing market for natural gas, without entailing CO₂ emissions from its use.

⁶⁷ "Well regulated" means all abandoned wells are documented and is equivalent to the regulations in the North Sea or Texas, currently.

⁶⁸ Estimating geological CO₂ storage security to deliver on climate mitigation, Juan Alcalde, Stephanie Flude, Mark Wilkinson, Gareth Johnson, Katriona Edlmann, Clare E. Bond, Vivian Scott, Stuart M. V. Gilfillan, Xènia Ogaya & R. Stuart Haszeldine <https://www.nature.com/articles/s41467-018-04423-1>

⁶⁹ Turner, Karen and Alabi, Oluwafisayo and Low, Ragne and Race, Julia (2019) *Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report)*. Available at: <https://strathprints.strath.ac.uk/67391/>

⁷⁰ Subject to the safety case being satisfactorily made, and to changes to regulations. See <https://www.sgn.co.uk/about-us/more-than-pipes/future-of-gas/hydrogen/hydrogen-100> and https://www.sccs.org.uk/images/expertise/reports/working-papers/WP_SCCS_2018_10_BEIS_CCS_Inquiry_requested_evidence.pdf

- Having CCS infrastructure in place in an area would make it an attractive location for high-emitting industries to (re)locate, providing additional jobs in the area.

Scotland and CCS

Carbon capture can happen anywhere where there are CO₂ emissions. This means that any industry in the world could capture its carbon if it chose to – although the costs would vary greatly between operations.

However, CO₂ storage can only happen in certain locations, where the right rocks exist in the right formations – and fortunately Scotland is one of those locations.

The UK has approximately 30% of Europe's CO₂ storage capacity, and Scotland has the capacity to store an estimated 46Gt CO₂⁷¹. This implies two things:

- Scotland has a responsibility to make best use of its resources and its advantages over other countries to develop CO₂ storage as part of global efforts to achieve the ambitions of the Paris Agreement.
- Scotland has the opportunity to make its storage capacity available – at a fee – to other countries and other parts of the UK.

CCS means that Scotland's economy can flourish in a net-zero world, supporting existing industries and growing new ones.

Infrastructure

Scotland – particularly the North East – has a host of infrastructure from its oil and gas industry that can be re-purposed for CO₂ storage. This includes offshore pipelines, which can transport CO₂ to storage sites and onshore pipelines, such as Feeder 10, which can transport CO₂ from the central belt to St Fergus. Scotland also has ports such as Peterhead, which could be developed to receive CO₂ by ship from elsewhere in the UK and, in future, from elsewhere in Europe.⁷²

UK policy on CCS

⁷¹ SCCS (2009) *Opportunities for CO₂ storage around Scotland – an integrated strategic research study*. Available at: <http://www.sccs.org.uk/images/expertise/reports/opportunities-for-co2/CO2-JointStudy-Full.pdf>

⁷² ACT Acorn (2019) D18 Expansion Option. Available at https://www.actacorn.eu/sites/default/files/ACT%20Acorn%20Expansion%20Options%20Report%201.0%20Rev_0.pdf

CCS is, essentially, a waste management operation – taking away a by-product that no-one wants and preventing it from causing environmental problems. Because it is the removal of a ‘bad’ rather than the provision of a product, there is no profit to be made in it, and therefore no incentive for the industry to invest. CCS deployment benefits governments, through enabling them to meet their climate objectives (and other objectives, such as employment and public health) and so will need government intervention to make it happen.⁷³

The UK Government has re-affirmed its commitment to CCS⁷⁴ in a series of policy documents, most recently the CCUS Deployment Pathway Action Plan⁷⁵. However, it has been criticised by the Committee on Climate Change for not acting more quickly on CCS and has so far failed to implement a number of the committee’s recommendations.

While the UK Government’s position on CCS is promising, and it has set a target for net-zero greenhouse gas emissions by 2050, there remains the risk that other political objectives will overtake support for CCS.

CCS is crucial for meeting Scotland’s greenhouse gas emissions targets and for a just transition. The sooner CCS is deployed, the greater its climate impact, as the total CO₂ emitted to the atmosphere will be reduced by early action (this, of course, applies to all activities that reduce CO₂ emissions).

For these reasons, we suggest that the Scottish Government should have its own contingency plan for getting CCS up and running, in case UK Government support fails to be adequate. This could include measures to fund CCS deployment directly.

What can the Scottish Government do?

Some initial actions we would recommend for the Scottish Government include:

- Identify the industries and sectors that will become less viable as carbon prices rise, or as greenhouse gas emissions become otherwise constrained.
- Understand the sectors that will emerge and grow in a zero-carbon economy.
- Identify and support the development of the skills that will be needed in these sectors.

Once this analysis has been carried out, the Scottish Government should develop a strategy for CCS deployment, including how it could happen in Scotland in the absence of UK Government support. This

⁷³ Regulation or carbon pricing could also drive industries to invest in CCS, if capturing and storing CO₂ became cheaper than paying to emit, or became a legal requirement. However, there is a very high risk that companies currently located in Scotland could respond by moving their operations elsewhere in the world, meaning that as well as there being no reduction in CO₂ emissions, Scotland would lose the jobs.

⁷⁴ The “U” stands for utilisation, or usage: using captured CO₂ rather than storing it. There are very few instances where using CO₂ would result in it being kept out of the atmosphere permanently, so we do not advocate utilisation as a climate change mitigation solution, and keep our focus on geological storage.

⁷⁵ Available at: <https://www.gov.uk/government/publications/the-uk-carbon-capture-usage-and-storage-ccus-deployment-pathway-an-action-plan>

strategy should enable the Scottish Government to identify where CCS should be deployed, and how this deployment should be phased, to have the maximum benefit both for Scotland's greenhouse gas emissions and for its workers. The strategy should identify a pipeline of projects – for CO₂ capture, transport and storage – and should ensure that government policies, particularly land-use and marine planning, are aligned with it.

Annex G – Scottish Enterprise report: Scottish Oil and Gas Diversification Opportunities

A pdf copy of this report has been included in the dropbox for this session. It is also available [here](#).

This report presents the findings of an assessment that aimed to identify key sub sectors and areas of opportunity in alternative markets for the diversification of the Scottish oil and gas supply chain. It highlights and analyses the heat, water, and energy storage and systems subsectors, and assesses the viability of the diversification opportunities they present. The report also identifies and maps active companies in the oil and gas sector in Scotland who may be well suited to capitalise on opportunities.

Annex H – submission from Skills Development Scotland

This note gives an overview of Skills Development Scotland's activity to support the net-zero transition, including a summary of the current pipeline of activities relevant to the Oil and Gas sector.

Skills Development Scotland Strategic Intent

SDS continues to support the low-carbon skills development as an integral part of responding to the Climate Change Emergency/Energy Strategy, strengthening actions across regions and sectors, to reduce carbon intensity, and supporting the emergence of new and low-carbon technologies and services.

Future skills planning, in which comprehensive intelligence on the skills demands of industry and needs of the economy is the fundamental driver of skills supply. Scotland already has many of the skills required to facilitate the transition to a low carbon economy. These skills exist across many of our existing sectors such as energy, engineering, construction, and chemical science but with the growing complexity within many roles, and rapidly changing technology environment, there is a need for a collaborative and integrated approach to skills alignment and provision:

1. SDS is keen to support the development of a specific Climate Change Skills Action Plan that builds greater capacity & capability, helping Scotland transition to a zero-carbon economy. This will require greater focus and intensity around the specific skills implications of not just the Energy Strategy, but all relevant sectors, making them more action orientated, with clear aims and specific & measurable

objectives. Demographics, population and the availability of people, specific skills sets and geographies should be considered in this.

Despite the wealth of evidence which shows there is potential for significant job creation and therefore skills demand, specific skills demand can be more challenging to assess due to the broad scope of low carbon and the need to consider future job roles which may not yet exist.

There remains the challenge around mapping future jobs and therefore identifying the skills needs. We should also recognise that there are interdependencies across a wide range of other policy areas including transport, energy, housing, tourism and food production, a **Climate Change Skills Action Plan** should focus on taking an evidence-based approach to identify priority actions to support the development of the skills required now as we seek to transition to a low carbon economy - and in the future.

2. Following on from this, the **Skills Planning Model and Skills Investment Plans** should be reviewed to ensure that there is a focus for investment in areas such as the circular economy and renewables etc as a practical response to the climate change emergency across all relevant sectors
3. Amplify the focus on climate change within the **Skills 2035** programme of activity. The aim of this would be to raise awareness and discussion at the level of the Strategic Board, SDS/SFC Board and Executive teams. It would build in climate change as a core component of the narrative on future skills.
4. Develop this approach through the **Just Transition Commission** to focus on business engagement and developing a stronger evidence base on skills and workforce issues and in return, provide thought leadership on the knowledge, skills, attitudes and behaviours required to drive more low carbon and circular thinking; this could form the outline of a strategy to initiate development of the knowledge, skills, attitudes and behaviours to drive realisation of the low carbon and circular economy across Scotland;

There is the potential to build climate change into meta skills and embed within the Apprenticeship standards and Apprenticeship Family, and work to embed across all curriculum through Education Scotland and other key stakeholders. This could include the development of Modern and Graduate Apprenticeships where demand is identified through skills planning and evidence based research, initially focussing on areas such

as engineering, business management where there is already a foundation. Likewise, there are opportunities to embed aspects of low carbon within L4/5 and Foundation Apprenticeships.

The Low Carbon Skills Fund, which SDS previously administered, was designed to speed and incentivise the adoption of process around low carbon, renewables and energy/resource efficiency, and a similar programme of upskilling the current workforce could be considered.

Pipeline of activity

There is a pipeline of activity already in place to develop the evidence base across key priorities, and this should be built upon, and extended:

Offshore Wind

A Scottish Offshore Wind Industry Council has been formed, co-chaired by Paul Wheelhouse, with a formal Skills Group reporting in, taking forward the skills element of the Sector Deal:

- Challenge the sector to more than double the number of women entering the industry to at least 33% by 2030-up from 16%
- Create an Offshore Energy Passport recognised outside the UK, developed for OW workers to transfer skills and expertise to other offshore energy and oil and gas industries
- Work with the FE sector to develop a sector wide curriculum
- Prompt new targets for increasing the number of apprentices (to be announced later in the year)

Energy vision 2035

At Offshore Europe, OGUK in response to the rapidly changing environment it has been recognised that there is a need for the industry to accelerate their approach to net-zero and launched their Roadmap 2035. The roadmap has 5 themes:

- Driving technology and innovation
- Supporting net-zero
- Growing the economy and exports
- Developing people and skills
- Helping meet UK energy needs



SDS are key partners in the Opito-led industry UK Skills Alliance and supporting the industry energy vision road map and skills roadmap through this emerging forum.

Decommissioning

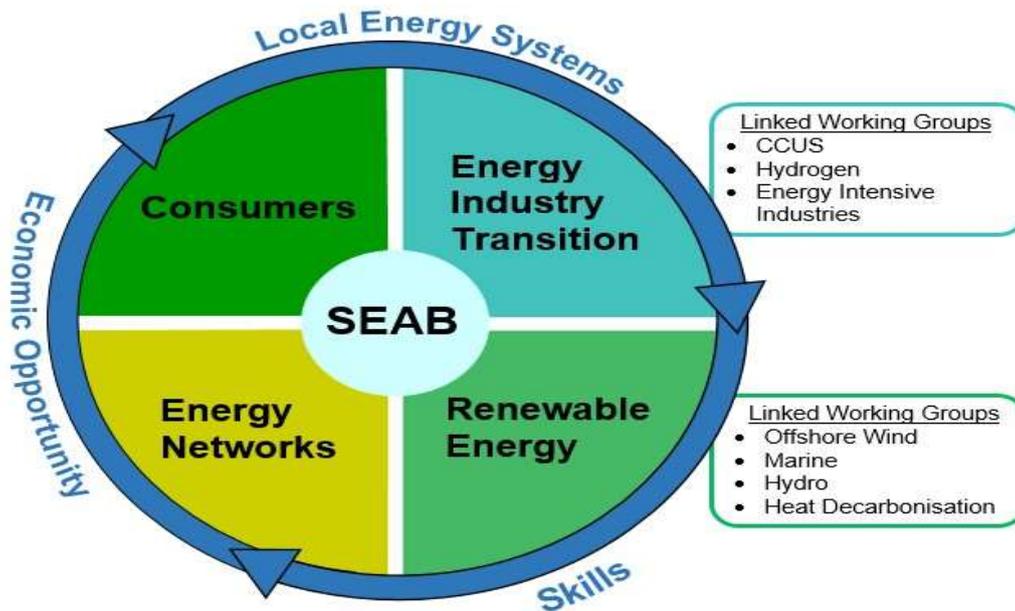
An Oil & Gas Decommissioning Group — formed with SDS, Decom North Sea, OPITO, National Skills Academy for Nuclear (NSAN) has been formed to ease the skills transition from nuclear and oil and gas sectors to decommissioning, and to take forward the recommendations of the Decommissioning Skills study which seek to address:

- Improving data and knowledge about future supply and demand of skills for decommissioning
- Improving awareness and perception of decommissioning as a career opportunity as part of a wider career in offshore energy, including increasing the number of women involved in decommissioning and targeting new entrants and the existing workforce
- Ensuring skills are transferable between relevant sectors
- Building knowledge of the skills, competencies and mindsets required to deliver decommissioning
- Investigating opportunities to modify relevant existing skills development provision to address the change in mindset and subtle skills differences required for decommissioning
- Investigating demand for new skills development provision for the future skills needs identified in this study
- Ensuring a process is in place to meet the skills requirements necessary to deploy future new decommissioning technologies

Industry Leadership Group Support

Whilst the issues around Climate Change and decarbonisation runs across the whole economy Industry Leadership could be assisted through SDS's work across the Scottish Energy Advisory Board and the attached image illustrates the new expert group structure and SEAB could act as the reference group and

challenge panel for the Climate Change Action Plan. An initial conversation with Sir Jim McDonald co-chair of SEAB received a very favourable response.



Annex I – Oil and Gas Authority Energy Transition Policy Position

Objective

To support fully the UK's transition to a low carbon economy.

When undertaking its functions and within its remit, where applicable the OGA will have regard to minimising carbon emissions from the UK offshore oil and gas sector. The OGA will also use its skills and expertise to work with government, industry and other relevant stakeholders as appropriate to support wider energy transition initiatives.

To engage fully with the energy transition to support MER UK by creating further efficiencies, and contribute to the industry's continued licence to operate.

The OGA will:

- approve and issue carbon dioxide storage permits and maintain the carbon storage public register
- where appropriate, identify opportunities for the development of carbon dioxide storage, including the use of carbon dioxide enhanced oil recovery
- support infrastructure re-use and recycling opportunities, including having regard to the development and use of facilities for the storage of carbon dioxide and work with government on its commitments

- d. ensure consistency of the OGA's offshore flaring and venting regime with MER UK and wider government policy, including emissions targets, by eliminating any unnecessary or wasteful flaring and venting of gas
- e. enhance understanding of offshore energy integration, including electrification, hydrogen and regulatory opportunities
- f. support a diverse range of supply chain options building on existing skills and activities
- g. work collaboratively with government and industry to support its wider objectives, including carbon emission reduction commitments, and continue to contribute skills and expertise

The OGA will not:

- h. conduct activities in relation to the energy transition that run counter to its statutory duties in respect of MER UK

When taking decisions, the OGA will consider:

- i. the principal objective of MER UK and its statutory functions and duties
- j. where applicable, how offshore oil and gas developments can benefit from and support the energy transition, including opportunities for integration and improvements in energy efficiency at the field development stage and through the asset stewardship process
- k. as appropriate, re-use and recycling opportunities, in particular with regard to carbon capture usage and storage projects, as part of the cessation of production and decommissioning processes