Response to the Draft Offshore Wind Policy Statement

March 2020

Dear Sir/Madam,

Scottish Renewables is the voice of Scotland's renewable energy industry, working to grow the sector and sustain its position at the forefront of the global clean energy industry. We represent around 260 organisations working across the full range of renewable energy technologies in Scotland and around the world, from large suppliers, operators and manufacturers to small developers, installers and community groups and companies right across the supply chain.

We welcome the Scottish Government's support for offshore wind and the publication of a draft policy statement. Our members believe that this is an important opportunity to set out the Government's aspirations for the sector, alongside the draft Sectoral Marine Plan which is the process through which new sites for development will be identified. With global attention on Glasgow at COP26 later this year, the Scottish Government can put forward an ambitious vision for the Scottish offshore wind sector which can be an example for countries around the world.

The key points that we wish to highlight are as follows:

- Our members welcome the policy statement which is an opportunity to clearly articulate the Scottish Government's ambitions for the sector to 2030 and 2045 to capitalise on Scotland's tremendous natural resources and excellent potential for floating offshore wind.
- We recommend an ambition of 12 GW of offshore wind in Scotland by 2030 and potentially 30 – 35 GW by 2045, to enable Scotland to meet net zero and 2030 emission reduction targets with a resource appropriate share of UK offshore wind.
- The Sectoral Marine Plan should be aligned with these ambitions by retaining all Draft Plan Options, the removal of DPO NE6 from the list of high ornithological constraint, addressing other ornithological constraints as a priority and exploring the need for potential derogations.
- The final offshore wind policy statement should define key principles for the Scottish Government's approach to key policy areas such as planning, environmental assessment, supply chain, networks and innovation.

We look forward to working with the Scottish Government as its plans for offshore wind and the wider response to the Climate Emergency are developed.

Kind regards,

Fabrice Leveque
Senior Policy Manager
fleveque@scottishrenewables.com

RESPONSE TO CONSULTATION QUESTIONS

1. **Does the current pipeline and level of activity in the offshore wind sector in Scotland provide a sufficient platform upon which to build the greater contribution required to achieve our climate change goals?**

Our members do not believe that the current pipeline of projects will be enough to achieve Scotland's climate change goals. Scotland currently has a pipeline of 7.5 GW of potential offshore wind capacity (with a total of 3.5 GW in operation or under construction). Meeting the Scottish and UK Government targets to reach net zero emissions will require a substantial increase in renewable power generation, with analysis by the Committee on Climate Change indicating that at least 75 GW of offshore wind capacity will be needed across the UK by 2050[1].

Targeting a 40 to 45% share of this in Scotland[2] would make the most of its excellent wind resources and bring substantial economic benefit. This would require potential deployment of 30 – 35 GW by 2050, requiring additional pipeline of fixed and floating projects beyond the current set of consented projects, which the Sectoral Marine Plan (SMP) and ScotWind can provide. The plan contains sufficient resource in theory to meet this level of ambition, although our members note that the deployment cap in the SMP (10 GW), as well as ornithological constraints, limit current potential delivery significantly below that level[3].

2. **Do you believe that the 2030 visions and aspirations described above are sufficiently ambitious?**

Our members welcome the intention to drive greater offshore wind deployment through the Sector Deal and support the UK Government ambition to increase deployment by 2030 from 30 GW to 40 GW. This will unlock additional economic benefit as well as moving the UK towards the net zero emissions pathway.

Our members also welcome the formation of the Scottish Offshore Wind Energy Council (SOWEC) and believe that it will provide a valuable means by which to coordinate and accelerate measures to grow the industry in Scotland. We welcomed the 2030 vision but note significant changes in context since it was developed. It would be helpful to reflect this by increasing ambition: the UK Government ambition noted above and the passing of net zero emissions targets. Scotland's new climate change targets require a 75% cut in emissions by 2030, an increase on the previous target that will require a faster pace of emissions reduction by this date. This will likely lead to increased demand for electricity in the transport and heat sectors which will require additional renewable generation.

Revising the 8 GW by 2030 ambition would also enable better alignment with ScotWind leasing. New options for leases will be awarded for ten years which will require those awarded in 2020 to deliver operational projects by 2030; the current 8 GW ambition could largely be achieved by delivering the existing 7.5 GW of project pipeline. We recommend an ambition to deliver 12 GW in Scotland by 2030. This would put Scotland on a path to delivering up to 35 GW by 2045 and ensure ambitious deployment of floating offshore wind this decade to secure early mover advantage.

Our members also believe that it would be helpful for SOWEC or the Scottish Government to set delivery ambitions out to 2045. Given the long lead in time for projects, and the clear low-carbon energy requirements of net zero targets, such a target would provide clarity around which other policies (e.g. the SMP, skills etc.) can be aligned.

[1] Committee on Climate Change, 2019, Net Zero Technical Report
[2] Scotland will have a c.20% of the UK's installed offshore wind fleet by the time all projects currently under construction come online
[3] Total deployment in Scotland of 17.5 GW could be achieved with the SMP as currently proposed: 7.5 GW of currently consented projects and 10 GW through ScotWind

3. What actions do you believe should be taken by the Scottish Government, UK Government and agencies in order to realise the full potential of Scotland's offshore wind sector?

The Scottish Government has a key role to play to realise the full potential of Scotland's offshore wind sector. Our members have identified the following priority areas where action is required:

- Work to alleviate the constraints that limit development at some DPOs within the Sectoral Marine Plan
- Regular seabed leasing to meet greater ambition out to 2050
- Strengthen the planning process
- Resourcing for environmental and other regulatory bodies
- Ensure that regulatory burdens do not penalise the economics of Scottish projects in the UK market
- Foster better coexistence between all users of the sea

Alleviate SMP constraints

Our members welcome the development by Marine Scotland of a new Sectoral Marine Plan (SMP) for offshore wind, which will determine the location for potential new projects and the long-term future of the industry in Scotland. This process has highlighted uncertainty over cumulative ornithological impacts as a potential barrier to further development, with development at eight of the seventeen potential zones (Draft Plan Options, DPOs) subject to high ornithological constraint, significant additional research or survey work. The constrained DPOs provide some of the most suitable sites for projects - two provide shallower water suitable for the fixed bottom foundations[4] that are the basis for current projects, and all are on the East coast with greater access to onshore electricity transmission capacity. Addressing the constraints at these sites will be a vital step to providing sufficient pipeline for deployment in Scotland. The proposal for an Iterative Plan Review (IPR) of the SMP is welcome (subject to uncertainties regarding governance and process being resolved) as this will provide the opportunity to coordinate the necessary research and survey work. Our members also urge the Scottish Government to explore the potential for derogations under Article 6 (4) of the Habitat Regulations as a route to enabling more potential projects to come forward.

Regular seabed leasing to meet greater ambition out to 2050

In order to increase the scale and pace of deployment, and to ensure that the industry is able to achieve the deployment levels set out above, the Scottish Government and Crown Estate Scotland should clarify the number and timings of future ScotWind leasing rounds. Regular leasing rounds are required to meet ambitious deployment scenarios and ensure a consistent pipeline of activity to the supply chain.

Strengthen the planning process

Linked to the above, a significant difference between development of offshore wind projects in Scotland and the rest of the UK is the Scottish Government approach to planning. Whilst our members recognise the robust spatial approach taken with the draft SMP, it is felt that the identification of new sites has taken a risk averse approach, with potential areas selected before industry consultation. Similarly, the reasons for the removal of some initial Areas of Search from the final list of proposed DPOs has not been clearly articulated within the SMP documents. It is also felt that Scotland has taken a more precautionary approach to potential ornithological risks, with assessments informed by SNCB advice rather than the legal baseline position that no AEOI has been concluded for the three relevant projects consented to date.

It would be helpful if Scottish Government policy could reflect Minister's intention to make Scottish planning 'efficient and effective'. This will require a leasing, planning and consenting regime that is consistent and robust to ensure the right offshore construction projects are developed to reach and exceed the Scottish Offshore Wind Energy Council's (SOWEC) 8GW offshore wind target.

[4] These DPOs account for approximately 25% of the shallow water area (< 60m) contained within the SMP

Resourcing for environmental and other regulatory bodies

To ensure that the offshore wind sector can deploy new generation in a timely and cost-effective manner, departments and delivery bodies in Scotland and across the UK need to be adequately resourced to support the Government's ambition. To deliver Scotland's ambition, substantial engagement will be required from Scottish Natural Heritage (SNH), the Scottish Environmental Protection Agency (SEPA), Marine Scotland, Local Planning Authorities (LPAs) and Heads of Planning Scotland (HoPS). Delivery bodies will not only require allocation of additional resource, but appropriate resource and experienced staff, to support future delivery of projects.

Regulatory costs

Another important way that the Scottish Government can support the offshore wind sector is to ensure that the costs of its policies and regulations do not place Scottish projects at a competitive disadvantage within the UK offshore wind market. Projects compete for Contracts for Difference on cost, and with Scottish projects already disadvantaged through higher transmission charges relative to projects located in the south of the UK, any extra costs could place Scottish projects at a relative disadvantage. Scotland-specific policies are currently in development – with proposals for Supply Chain Management Statements to be implemented through ScotWind leases, a Marine Conservation Fund and new decommissioning proposals. To ensure the future competitiveness of Scottish projects it will be important to ensure that Scottish Government regulatory requirements are aligned as far as possible with those elsewhere in the UK, and where additional requirements are implemented, that the costs of these are proportionate.

Interactions with other marine users/stakeholders

The Scottish Government already plays an important role in managing access to Scotland's seas between different industries and stakeholders. Achieving a significant deployment of offshore wind in Scottish waters will require the careful management of multiple sea users. Our members report some difficulties in establishing and implementing new ways of working with other sectors such as the fishing industry and would welcome resolution of key issues such as the removal of fishing gear and a consistent approach to calculating compensation for fishing disruption. Our members welcome the significant cross-sector consultation that has informed development of the SMP and hope that the significant input to that process from other sectors will facilitate constructive co-existence in future.

UK Government

The key means by which the UK Government can support Scotland's offshore wind sector will be by revising the Contracts for Difference scheme, to hold yearly auctions and provide a separate allocation pot for floating offshore wind projects. Yearly auctions would enable better delivery of the 40 GW by 2030 ambition by providing a more consistent pipeline of projects to the supply chain. At present, floating offshore wind projects are unable to compete on price against fixed bottom projects in the Contracts for Difference auctions. In light of this we welcome the recent proposals[3] to create a separate pot for fixed bottom projects which will increase potential for floating offshore wind to successfully compete in the next allocation round, subject to auction prices. This potential will be even greater if floating offshore wind is defined as a separate eligible technology and given its own administrative strike price.

4. **What are the key regulatory and cost challenges facing the offshore wind sector?**
5. **What more can the sector and other key stakeholders do to tackle these?**

The offshore wind industry is looking to more than quadruple the UK's current installed capacity by 2030 to meet the UK's requirements for low-carbon electricity and help meet climate targets. This will require that the relevant regulatory regimes are fit to deliver at scale and at the lowest cost. The Sector Deal provides a framework within which to do so, but our members highlight the following regulatory and cost challenges specific to Scotland.

Transmission network charging

A key challenge facing offshore wind in Scotland is electricity transmission network charging, and our members welcome acknowledgement of this in the draft policy statement. These costs are regulated by Ofgem and are higher for projects situated furthest from centres of demand. Ofgem is currently working on reforms[5] that would further increase the fees paid by projects in the north of the UK. These costs are a significant burden for Scottish projects competing in Contracts for Difference auctions. For example, charges could increase the CfD auction bid of a 1 GW project in Scotland by £5/MWh[6] which represents 12.5% of the value of the winning bids in the third CfD auction round. We have expressed our concerns to Ofgem[7] and have commissioned research in collaboration with RenewableUK that will illustrate the scale of the potential charging increases on Scottish projects. We would welcome the opportunity to share these outputs with the Scottish Government.

Interactions with other marine users/stakeholders

As noted in answer 3 above, interactions between the offshore wind and fisheries industries present a source of risk and cost. Although our members strive to engage local fishing communities and welcome the constructive attitude of this sector, there have been instances where fishing gear has interrupted surveying and construction operations at pre-agreed sites. Such delays can cause costs into the hundreds of thousands of pounds, as survey vessels are costly to hire and done so on a time-limited basis by individual projects.

Industry has created a fisheries sub-group within SOWEC which will aim to share learning, best practise and find solutions to common problems faced by projects as they enter construction and operation, to complement initiatives by Marine Scotland to foster collaboration between both sectors. It would also be helpful if the National Marine plan were fully aligned with the net zero target and ambitions within the Sectoral Marine Plan for offshore wind and policy statement.

Potential regulatory costs and timescales in Scotland

As noted above, offshore wind projects compete on price to secure Contracts for Difference, and the cost of regulatory requirements should be assessed, particularly where these may have a variable impact on projects (e.g. penalising some more than others). The Scottish Government is proposing to implement supply chain statements (through ScotWind leases) and a voluntary Marine Conservation Fund, which will impose additional costs on Scottish projects. Whilst our members support the aims of these two initiatives, they must be developed with awareness of the potential impact on cost competitiveness. Similarly, the Scottish Government has previously published guidance relating to Community Benefits from renewable projects[8]. The guidance for offshore renewables is being updated at present and our members therefore recommend removal of reference to these in the policy statement until these changes have been finalised and agreed with industry.

6. What should the key Scottish priorities be in relation to Air Defence Radar, and towards radar mitigation more generally?

Although significant progress has been made in addressing wind/aviation issues, a piecemeal approach with a lack of an overall national (UK-wide) strategy has been a constraining factor. However, the engagement by the Scottish Government in developing this policy statement is viewed as an important contribution in taking a revised approach. If net zero is to be delivered, it is essential that the issues surrounding the co-existence of wind turbines and aviation are resolved, as a case-by-case approach with individual developers seeking to resolve site-specific issues will not be sustainable.

[5] *Targeted Charging* and *Access and Forward Looking Charges* Reviews
[6] Assuming TNUos of £25/kW and a load factor of 0.5
[7] https://www.scottishrenewables.com/publications/562-letter-to-jonathan-brearley-ceo-ofgem
[8] Good Practice Principles (GPPs) for Community Benefits from Onshore Renewable Energy Developments (2014) and Community Benefits from Offshore Renewable Energy developments (2015)

An overall strategy is needed which creates a holistic approach across government departments. With senior ministerial support this would enable all sectors to be cooperative and cohesive in delivering net zero targets as it would set a common framework within which all have to work. This is particularly important as although this policy statement is focussed on offshore, and the set question in the consultation specifically highlights air defence radar issues, the ability to deliver a successful outcome will need to recognise and coordinate the interdependencies between offshore and onshore wind, and air defence, air traffic control and management (civil and military) requirements.

Following the Offshore Wind Sector Deal, a positive initiative has been established between the Ministry of Defence (MOD) and the Offshore Wind Industry Council (OWIC) to develop a strategic approach to finding an enduring air defence mitigation. This work is a significant potential contribution to delivering the Scottish offshore policy and could also have consequential benefit for onshore developments. The scope of the work also includes military air traffic control. The Scottish Government would clearly benefit from remaining closely engaged and supporting this initiative which would appear to offer a significant opportunity.

In respect of civil aviation issues, there is a need to seek a national strategic approach which capitalises on the opportunities which will arise from airspace architecture reviews and advances in civil air traffic management (ATM) technologies. The approach needs to move from one of developers and aviation stakeholders negotiating bespoke, and consequently costly, solutions on a case-by-case basis to one where the overall environment recognises the need for co-existence between wind and aviation. If this was led by the Department for Transport (DfT) as their contribution to a cross-government coordinated approach, it would provide the necessary policy and strategy framework for the Civil Aviation Authority (CAA) and the aviation stakeholders to optimise the future solutions by a requirement to include the wind turbine environment in their objectives.

Key aspects which need to be considered are how the delivery of a future airspace strategy can be implemented in a way which acknowledges the wind turbine/aviation issue so that where feasible and without imposing an unreasonable burden, can additionally support mitigation. In this respect, there is a need for a study to assess how the airspace structure could be used from a strategic, and nationally driven, perspective to support this approach. This could assess the options available and consider how and where, as part of a national strategy, be implemented. This work could also consider the best implementation process as the existing airspace change process may not be the most effective as part of a strategic and holistic approach. The output would also support the Scottish Government in pursuing a national approach with Westminster and, in particular the DfT.

The second key element of a national way forward is the role that technology developments could play in achieving future co-existence within the context of an overall strategy. Although the future of the UKs engagement in European aviation programmes will change as a result of leaving the EU, technologies are being developed and deployed to deliver significant benefits to aviation within the Single European Sky programme. Although these projects will deliver specific aviation improvements, many have the potential to make a significant mitigation to the effects of wind turbines. However, the opportunity to capitalise on this in support of a holistic approach may be undermined if at the national strategy level, the interrelationships and possibilities are not formally recognised. It would appropriate to further investigate this potential opportunity and ensure the output is again used in supporting a national approach involving a Westminster strategy.

The initiative taken by the Minister for Energy, Connectivity and the Islands in forming the Aviation 2030 task force is a productive step in working towards addressing these issues. SR welcomes this proactive approach and the areas of work highlighted in this response would appear to be appropriate to this workstream which involves the relevant civil stakeholders. The outputs of these would support the Scottish Government in taking forward proposals for a UK-wide strategy and policy and would enable a parallel approach to be taken alongside the OWIC/MOD initiative.

7. What more can the Scottish Government do, working with industry and other stakeholders, to address 'knowledge gaps' in environmental assessments for potential offshore wind developments?

Our members would like to highlight that collective knowledge of bird ecology and impacts has increased rapidly over the last 10 years and our understanding of impacts will no doubt increase over the next 10 years. However, there will always be knowledge gaps and new questions to answer. Whilst ongoing research is important, uncertainty/knowledge gaps should not be a reason to stifle development decisions.

Our members welcome the commitment within the Draft SMP for the final SMP to be subject to regular review and management following adoption, supported by an Advisory Group and support the intention to review the plan on a two-yearly basis. We believe this to be the best vehicle through which to address current environmental constraints.

An important element of iterative plan review will be a process for identifying when the evidence base will become sufficient to allow HRA of future plans to conclude no likely AEOI from the DPOs currently subject to high ornithological constraint and enable developments within these DPOs to be consented. A timetabled evidence-gathering exercise, including monitoring data from consented windfarms and additional research projects, should set out how and when this evidence will be available to a satisfactory level, identifying further research gaps and how these will be addressed. As those developers awarded DPOs which are subject to high levels of ornithological constraint shall have to work closely with regulators, SNCBs and other stakeholders to address uncertainty. It would be prudent to structure a specific working group to address ornithological constraints either as a standalone group or as a sub-group which feeds into the Advisory Group. We also encourage the Scottish Government to look into opportunities to collaborate outside of Scotland given a number of UK-wide initiatives that could provide valuable input to Scottish assessments.

Although we support the IPR process, there are a number of issues still to be resolved. To have a rolling programme of the IPR has the potential to have an ongoing influence at project level, which is potentially concerning for developers progressing projects in the DPOs not currently considered high risk. Clarity is needed from Marine Scotland that individual projects will be autonomous in their decision making, that full access to Article 6(3) and Article 6(4) remains at project level where relevant in each case and that if an individual developer makes a case for a project it should be considered on its own merits.

8. What steps can be taken to improve interactions between offshore wind and other marine sectors?

Offshore wind will increasingly interact with other marine sectors and stakeholders as deployment in Scottish waters trebles over the next five years with the construction of the Neart Na Goithe, Moray East and SeaGreen projects. The fishing industry is perhaps the most crucial stakeholder, in terms of breadth of interaction and potential to impact on construction and operation of offshore wind projects, and our members would welcome additional alignment of marine polices with the Scottish Government's ambitions for increased deployment of offshore wind.

There will be increasing opportunities for the offshore wind and oil and gas sectors to collaborate, with opportunities to transition workforce between the two sectors and the deployment of floating turbines. The two industries are already collaborating, and we welcome Scottish Government support for this.

9. **How could a competitive market framework that promotes the development of floating wind be developed whilst still retaining value for money for the consumer?**

As we have highlighted in our 'Floating Wind: The UK Industry Ambition' paper[1], cost reductions in floating offshore wind can be achieved rapidly with the right support in place, mirroring the significant cost reductions in fixed-bottom offshore wind over successive Contracts for Difference allocation rounds. Based on realistic levels of UK and global deployment, we would expect floating wind to be cost-competitive with other energy technologies by 2030.[2]

At present, floating offshore wind projects are unable to compete on price against fixed bottom projects in the Contracts for Difference auctions. In light of this we welcome the recent proposals[3] to create a separate pot for fixed bottom projects which will increase potential for floating offshore wind to successfully compete in the next allocation round, subject to auction prices. This potential will be even greater if floating offshore wind is defined as a separate eligible technology and given its own administrative strike price.

We also encourage the Scottish Government to look holistically at other support measures that could bring about routes to market for floating wind technology, including supply chain synergies with the oil and gas and wave and tidal sectors. We would like to see any redesign of Pot 2 for future auctions take into account the different scales and development status of both floating wind and wave and tidal technologies, so that both could benefit from this support.

1. Floating Wind: The UK Industry Ambition
2. Macroeconomic Benefits of Floating Offshore Wind in the UK; September 2018. Crown Estate Scotland & Offshore Renewable Energy Catapult
3. Contracts for Difference: Consultation on amendments to the scheme

10. **Considering the currently available literature and analysis, what do you consider a successful offshore wind industry in Scotland in the future would look like?**
11. **What scale of deployment would you estimate or believe to represent a successful outcome, and why?**
12. **What actions should industry and government take to address the issues described in this section and ensure the most positive future position for offshore wind in Scotland?**

Our members believe that a successful offshore wind industry in Scotland by 2045 will be one that delivers substantial renewable generation to both Scotland and the rest of the UK, is deployed in an environmentally sensitive way that delivers substantial local and national economic benefit as part of a net zero emissions economy.

Clear articulation of the Scottish Government's ambitions for offshore wind deployment to 2030 and 2045 would help ensure alignment of policies across Government and help ensure the maximum benefit accrues to Scotland of growing this globally significant low-carbon industry. Targeting a 40 to 45% share of the UK's likely offshore wind deployment by 2045/50 would make the most of Scotland's excellent wind resources and bring substantial economic benefit. This would require deployment of 30–35 GW by 2050, meeting Scotland's domestic requirements[9] and exporting a large surplus to neighbouring countries.

The next decade will be a crucial one for offshore wind in Scotland as the industry catches up with the rest of the UK, and the commercialisation of floating offshore wind opens up new opportunities in our deeper waters. Our members therefore recommend an ambitious deployment target of 12 GW in Scotland by 2030.

[9] Meeting the Scottish Government's 2050 'electrification' scenario in the 2017 Energy Strategy would require c.22 GW of offshore wind (if this was the sole source of generation) to meet the ambition of generating 140% of Scotland's electricity needs. This scenario was modelled to meet the previous target of an 80% cut in emissions and requirements will be higher for net zero emissions targets.

SUPPLY CHAIN

13. What areas of the Scottish supply chain do we excel at, and what could we do better?

Offshore wind in Scotland is still an emerging industry, with activity increasing significantly in the last few years after a slow start due to more challenging water depths and sea conditions relative to other parts of the UK - Scotland currently has 10% of the UK's operational offshore wind capacity[10]. This will increase over the coming years with a further 2.5 GW of capacity under construction[11] providing conditions to bolster the emerging Scottish supply chain. The sector currently employs 3,400 people in Scotland[12] and this is expected to grow as deployment increases.

Scotland has particular current strengths in project development, with a number of established developers with bases in Scotland[13] and wide range of companies providing dedicated legal, financial and consulting services[14].

Offshore wind farms are operated and maintained locally and ports along the east coast are benefitting from dedicated servicing facilities each bringing around 100 long-term jobs[15]. Local ports are also benefitting from construction phase activity, with Dundee and Port of Nigg expanding their capabilities as a result of recent contracts.

There are some areas in which the Scottish and UK supply chain is weaker, particularly in terms of construction and installation. Recent analysis conducted for the Offshore Wind Growth Partnership by the Offshore Renewable Energy Catapult[16] (OREC) into the current UK capabilities for turbine foundations found that:

- **Monopiles:** expected demand Europe-wide and the characteristics of manufacture suggest that a manufacturing facility could be established in the UK.
- **Jackets:** there has been a clear trend of jacket fabrication contracts going abroad despite the presence of UK and Scottish companies (BiFab), driven primarily by cost reduction, with UK-fabricated transition pieces and jackets 10-15% more expensive than the most competitive prices achievable in the market. There have been instances where orders have not been fulfilled which has then impacted on perceived risks and financing, which will need to be resolved through additional investment and work to improve confidence and reputation.
- **Ports:** the best in class fabrication facilities (Esbjerg in Denmark, Rotterdam in the Netherlands or Rostock in Germany) for monopiles and jackets are sited at large ports, with excellent logistics, including efficient goods in and goods out routes and processes for movement of thousands of tonnes of raw materials and finished goods. This is critical to maintaining the most competitive pricing and the UK currently has no equivalent to the best European facilities, with additional investment required to do so.

The Growth Partnership will be publishing further studies examining UK capabilities across the offshore wind supply chain. Whilst the recent focus, through the Sector Deal and SOWEC, on developing the fixed foundation supply chain in Scotland is to be welcome, it will be vital to the future growth of the sector to invest in early action to identify local supply chain opportunities for floating projects. Work has already commenced, for example through OREC, and it will require a coordinated effort between industry and Government to be successful.

[10] 1 GW of a total 8.5 GW operational capacity as of 20.02.20
[11] Naithe ne Goithe, Moray East, Kincardine and Sea Green 1
[12] ONS, Low carbon and renewable energy economy indirect estimates
[13] EDF Renewables, EDP Renewables, Red Rock Power, ScottishPower, SSE, Innogy, Vattenfall
[14] https://www.scottishrenewables.com/publications/532-scotland-s-offshore-wind-sector-supply-chain-impact-2018-19
[15] For example, Wick (Beatrice), Fraserburgh (Moray East), Eyemouth (Neart na Goithe)
[16] Offshore Wind Growth Partnership, 2019, UK Strategic Capability Assessment Offshore Wind Foundations

14. Where are the new areas that Scotland can develop and exploit a competitive supply chain advantage?

Scotland forms part of a UK-wide supply chain but has potentially unique offerings from the oil and gas industry with expertise relevant in high-end technical services, UAV, data and communications and moorings. There is considerable overlap between existing activity from fixed-bottom offshore wind and the oil and gas sector – across ports and harbours, assembly, manufacturing and fabrication facilities as well as more specialist outlets.

Looking further ahead, commercial scale floating offshore wind presents a huge opportunity for Scotland to secure first mover opportunity. We have the following suggestions:

- Developing a floating Scottish concept(s) optimised for fabrication in one of the Scottish yards. An industry/government collaborative effort may be worth considering to fully optimise on the offshore skillsets in Scotland present in the hydrocarbon industry.
- Maximising opportunity around port assembly activities & skillsets. Staging/Assembly port activity is considered able to draw a strong volume of activities to local supply chain.

15. What are the main challenges a company faces when tendering for a contract?

UK companies compete for contracts in a global marketplace. A challenge facing companies bidding for foundation assembly contracts is the state aid support received by some competitors based abroad, which creates an un-level playing field. We welcome moves by both Scottish and UK Governments to assess areas for investment to improve the competitiveness of the UK supply chain.

16. Subject to procurement law, what more should government and its agencies do to assist the supply chain to secure contracts?

Government can assist the supply chain to secure contracts in the following ways:

- Support the activity of the Offshore Wind Growth Partnership.
- Incentivise supply chain to participate in industry reviews of supply chain capability to improve understanding of strengths and weaknesses.
- Review global competitors, with the support of DIT and SE, to benchmark success and expectations to understand what they are competing against.
- Work with industry to identify and deliver joint investments in infrastructure.
- Encourage supply partnerships from early stages. The establishment of clusters in Scotland will help but industry will need strong focus on collaboration to realise new opportunities for example around floating offshore wind, where the scale and volume of substructures may require the clustering of fabrication / assembly yards.
- Help deliver hybrid (fixed and floating) projects which will provide a good test platform for deployment of optimised fabrication processes and act as an interim step to wider commercial floating wind deployment.

17. What are the key skills issues and gaps facing the sector over the coming years, in the short and medium term?

There are current skills gaps in the availability of workforce for operations and maintenance activities. The near-term focus should be on encouraging greater numbers of engineers into the wider construction sector as well as the offshore wind sector and engaging and encouraging transition from oil and gas sector as activity there begins to wind down with continued depletion of North Sea fields. The Investment in Talent (OWIC) and Skills

Group (SOWEC) will be critical to building our understanding in this area. Support for national and international Passporting programmes for enabling transfer between associated industries will also help ensure a smooth transition.

Significant progress has been made, especially in Scotland on having integrated information and approaches. In order for the long-term roles to be available for local residents more flexibility in funding mechanisms should be available – so people can be employed in one location, trained and gain experience outside of that location to ensure operational readiness and then re-deployed locally. Additional work should be done to 'debias' education by the government and the sector needs to ensure a diverse representation of role – to ensure the people with the skills entering the sector are diverse and representative.

In the longer term, Scotland's offshore wind future will likely depend on the commercialisation and deployment of floating wind farms, given the larger volume of deep-water sites in the current draft SMP. Technological uncertainty regarding foundation design makes it hard to determine exactly what the future skills requirements will be for that industry, but deep-water capability and ports and harbour/ logistics infrastructure that can cope with the large size of structures will be key priorities.

INNOVATION

18. What more should government and the sector do to build on the progress made in recent years?

Priority areas for innovation and cost reductions for the sector are:

- Automation of inspection and repairs.
- Minimising material (steel & grout) on fixed bottom structures.
- Supporting and encouraging synergies with O&G in particular with regards:
    - Transfer of skills from individuals and re-training O&G personnel for the offshore wind sector
    - Re-focus suppliers for the offshore wind sector, merging of best practice standards for operations, inspections, health and safety
- Floating offshore wind:
    - Consider creating an industry challenge fund for the development of industrial scale fabrication and deployment of floating offshore wind.
    - Set up of a taskforce in Scotland to support developers and harness opportunities, mirroring the South Korean approach where industry was driven by Government to focus on floating wind and harness local expertise and supply chain.

19. What can Scotland learn from the approach taken in other countries around the world in this area? Are there examples of best practice you can share?

There are lessons to be learned from other markets in terms of support to develop floating offshore wind. In France, a step-by-step approach has been taken (i.e. from prototype to commercialisation) which could be a useful starting point for UK and Scottish initiatives. Projects will need subsidy and capex support for pre-commercial deployment to overcome competitiveness issues.

20. What can the Scottish Government most usefully and feasibly do to build on the innovation support previously and currently available?

Scotland is seen as one of the leaders for offshore innovation and the presence of the Offshore Renewable Energy Catapult in Glasgow is a great advantage for industry. A technology agnostic approach to support should

be taken so as to exploit opportunities across all technology types, and future work should ensure integration with other energy value chains, such as those presented by a potential hydrogen economy.

21. How can we support technologies and developments which reach a viable stage between leasing rounds and CfD auctions?

Having flexibility over lease milestones and baseline validity in EIA would help the stranding of assets that do not gain a Contract for Difference or apply for leases between leasing rounds.

22. Where respondents believe that scope remains for innovation in fixed offshore wind, what areas should be prioritised?

Our members believe that there remains scope for further innovation in the following areas:

- Asset management (optimising and future proofing smart O&M) and life extension.
- Corrosion protection.
- Further streamlining of fabrication processes though further development in automated welding and industry adoption of standardised nodes.
- Development to support even larger turbines (i.e. 15MW+).

23. What actions should be taken to address the key challenges facing the uptake of commercial scale floating in Scotland?

Our members recommend the following actions:

- As noted above, development of a CfD framework that enables floating wind projects to compete for contracts.
- Funding support to enable pre-commercial projects to be developed.
- Reforms to transmission charging and access.
- Greater clarity around grid connection access at the appropriate point of project development.

24. What can be done, on the part of government and / or others, to strengthen and benefit from the synergies with a) hydrogen and b) the oil and gas sector?

The development of green or blue hydrogen will require subsidy support or regulation to make these fuels competitive against higher carbon incumbent fuels. This will create the demand required to enable production facilities, including potentially from offshore wind, to be deployed and tested. The Scottish Government's Hydrogen Action Plan should be coordinated with its approach to offshore wind.