

Sectoral Marine Plan for Offshore Wind Energy

October 2020

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LIST OF ABBREVIATIONS

AoS	Areas of Search
CCC	Committee on Climate Change
CES	Crown Estate Scotland
CfD	Contracts for Difference
cSAC	Candidate Special Area of Conservation
DPO	Draft Plan Option
EMEC	European Marine Energy Centre
EMR	Electricity Market Reform
eNGO	Environmental Non-Governmental Organisation
EOWDC	European Offshore Wind Deployment Centre
EU	European Union
EV	Electric Vehicles
GHG	Greenhouse Gas
GW	Gigawatt
HIE	Highlands and Islands Enterprise
HRA	Habitats Regulations Appraisal
IPCC	Intergovernmental Panel on Climate Change
JNCC	Joint Nature Conservation Committee
LCOE	Levelised Cost of Energy
MGN	Marine Guidance Note
MOD	Ministry of Defence
MPA	Marine Protected Area
MW	Megawatt
NGO	Non-Governmental Organisations
NM	Nautical Miles
N-RIP	National Renewables Infrastructure Plan
O&C	Opportunity and Constraint
O&M	Operations and Maintenance
ORE Catapult	Offshore Renewable Energy Catapult
PMF	Priority Marine Features
pMPA	Possible Marine Protected Area
POs	Plan Options
pSPA	Proposed Special Protection Area
RLG	Regional Locational Guidance
SA	Sustainability Appraisal
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEIA	Socio Economic Impact Assessment
SLVIA	Seascape, landscape and visual impact assessment
SMP	Sectoral Marine Plan
SNCB	Statutory Nature Conservation Bodies
SOWEC	Scottish Offshore Wind Energy Council
SPA	Special Protection Area
TCE	The Crown Estate
The Plan	The Sectoral Marine Plan for Offshore Wind Energy
UK Sector Deal	The UK Sector Deal for Offshore Wind
UXO	Unexploded Ordnance

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MINISTERIAL FOREWORD



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Minister for Rural Affairs and
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We are delighted to publish this Sectoral Marine Plan for Offshore Wind Energy in Scotland. It is the culmination of over 2 years of extensive analysis, consideration and engagement with a wide range of stakeholders.

When we published the draft Plan in December 2019, we outlined our intention that it would maximise the benefits for Scotland, our communities and our people, striking a balance between economic, social and environmental needs. During the consultation we received 443 written responses and heard the views expressed at 17 events in coastal communities throughout the country. We are sincerely grateful to everyone who took the time to engage with us. We hope that the changes made in this final Plan demonstrate that we have listened to these wide ranging views. We believe that in bringing forward this Plan we have achieved our aim of delivering a Plan that is as ambitious as it is balanced.

Of course, since we concluded the consultation in March, the country has experienced an unprecedented challenge to our economy and society as a result of the COVID-19 pandemic. The stakes, therefore, could not be higher in terms of the need to deliver on the huge industrial and economic potential of offshore wind. However, we must do so in a way that minimises impacts on other marine users and the environment, and ensures that our economic recovery is consistent with our climate ambitions and our transition to a net-zero society.

It is clear from both the feedback received during the consultation and as we strive to deliver a green recovery and meet our ambitious targets for net zero and build our Blue Economy, that our waters offer significant potential to maximise those opportunities in Scotland. Those opportunities, however, will also require some ambitious and bold decisions about how we best manage the marine environment to meet these targets. This Plan marks an important step in this process but also acknowledges some of the challenges we face. We will strive to address these challenges fairly and with the support of stakeholders and the necessary scientific research and evidence.

To-date we have seen substantial investment in offshore wind in Scotland, including the deployment of the world's first floating offshore wind farm at the Hywind Scotland Pilot Park and the successful completion of the Beatrice windfarm, the fourth largest offshore wind farm in the world. The publication of this Plan, and the associated ScotWind leasing round, launched by Crown Estate Scotland in June, represents the beginning of the next chapter. Many challenges still lie ahead, and we are clear in the Plan that this is the start of a process, not the end.

In the coming months we will set out further details of how we will take forward the necessary actions required by the Plan. We want to continue on this journey as we have up until now, by continuing to engage our key stakeholders who care so passionately about our marine environment and resources.

1. Introduction and background

The Scottish Government is committed to ensuring secure, reliable and affordable energy supplies, within the context of long-term decarbonisation of energy generation. As set out in the Offshore Wind Policy Statement,¹ which builds on the ambitions outlined in Scotland's Energy Strategy,² the continued growth of the renewable energy sector in Scotland will be an essential feature of our future clean energy system and a potential key driver of economic growth. As a nation with an abundance of renewable energy resources, opportunities exist not only to meet domestic needs, but also to export low carbon energy to the rest of UK and Europe.

To-date, Scotland has seen a significant amount of offshore wind energy activity, with 14 offshore wind farms (including two floating wind farms) having received consent, six of which are currently operational. This equates to a total generating capacity of just over 5 Gigawatts ("GW"). Our first Sectoral Marine Plan for Offshore Wind Energy (*Blue Seas Green Energy*) ("the 2011 Plan") was adopted in 2011,³ with draft wind, wave and tidal plans subsequently produced in 2013.⁴

Three of the six short-term option sites identified in the 2011 Plan have progressed to consenting (Beatrice, Inch Cape and Neart na Gaoithe), with Beatrice Offshore Wind Farm becoming operational in 2019 with an installed capacity of 588 MW. As part of the 3rd UK Offshore Wind Farm Leasing Round, two Round 3 sites are being progressed in Scottish Waters - the Firth of Forth Offshore Wind Zone and the Moray Firth Offshore Wind Zone.

Recent technological, policy, regulatory and market developments, such as the commitments outlined in the *UK Offshore Wind Sector Deal*,⁵ the development of new technologies suitable for deployment in deeper water and the aspirations established in recent climate change legislation presented the opportunity for Scottish Ministers to undertake a new strategic planning process to support further offshore wind development in Scotland's seas. This planning process provides the spatial strategy to support the current CES ScotWind leasing round, the first offshore wind leasing round to be administered in Scotland.

¹ Scottish Government, *The future of energy in Scotland: Scottish energy strategy* (2017). Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/>

² Scottish Government, *Offshore Wind Policy Statement* (2020) Available at: <https://www.gov.scot/ISBN/978-1-80004-237-7>

³ Scottish Government, *Blue Seas Green Energy* (March 2011) Available at: <https://www2.gov.scot/Topics/marine/marineenergy/wind>

⁴ Further information available here: <https://www2.gov.scot/Topics/marine/marineenergy/Planning>

⁵ Department for Business, Energy and Industrial Strategy, *Offshore wind Sector Deal* (2019). Available at: <https://www.gov.uk/government/publications/offshore-wind-sector-deal>

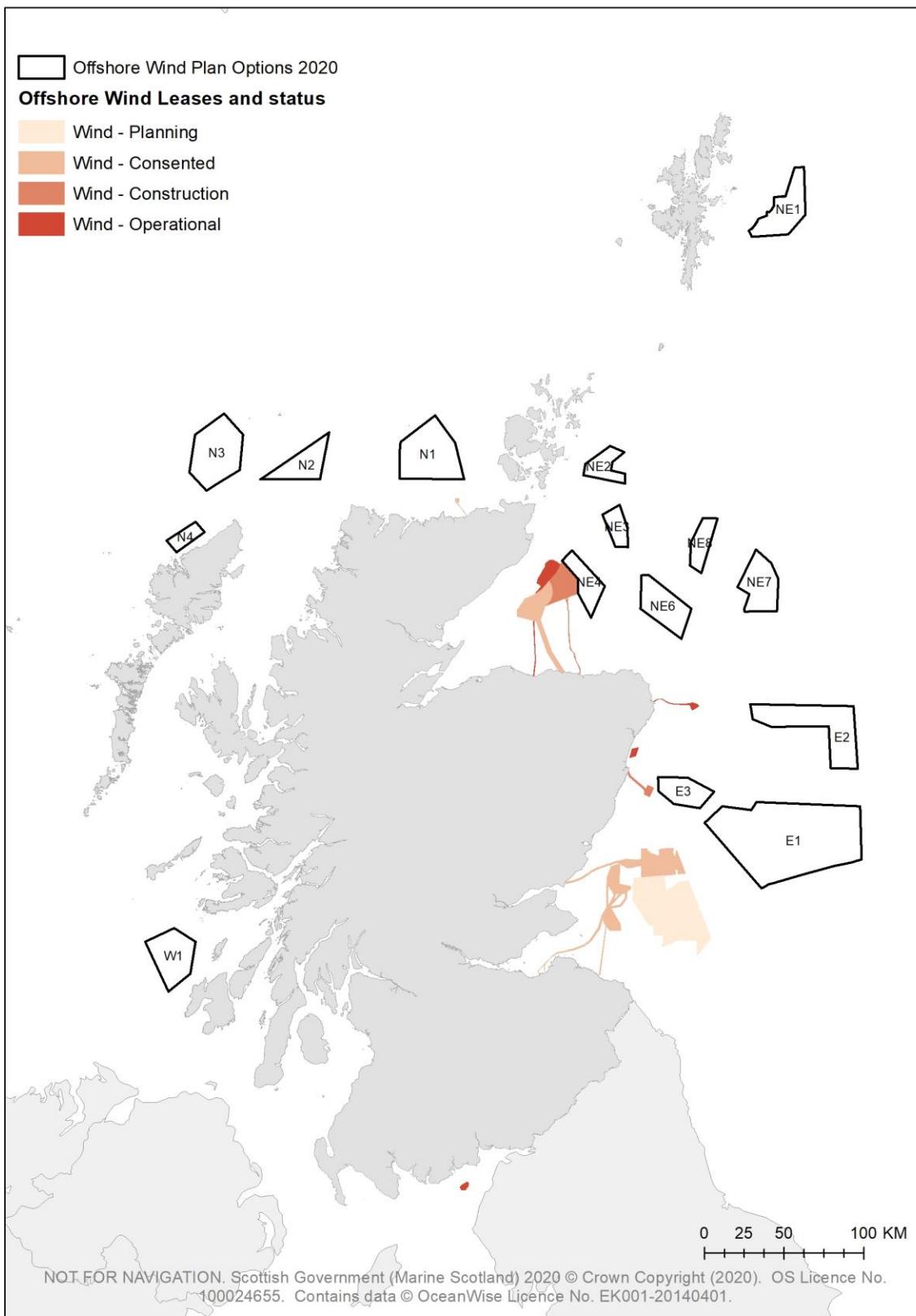


Figure 1 Offshore wind Plan Options and current offshore wind developments

Offshore wind energy has the potential to play a pivotal role in Scotland's energy system over the coming decades. As the amount of planned and constructed offshore wind development increases, however, opportunities to install offshore windfarms close to shore and/or in shallower waters will decrease, resulting in the need to explore opportunities to develop sites located further offshore and/or in deeper waters. These types of development pose new technical and financial constraints which will need to be overcome. However, Scotland has natural advantages in terms of a combination of high wind speeds and availability of deep water sites, which help to address these challenges. The development of deep water wind technology also provides an opportunity to further develop offshore wind supply chains and to lever existing infrastructure and supply chain capabilities from the offshore oil and gas industry and help create the requisite conditions to position Scotland as a world leader in deep water wind technologies. This Plan provides opportunities for development within deeper waters, a consideration not factored into the 2011 Plan.

The Plan development process has taken into account wider policies and priorities relating to climate change, lowering carbon emissions and promoting green energy to ensure that the Plan supports the delivery of our national and international obligations. The process has also taken into consideration the potential economic, social and environmental impacts of offshore wind energy and has been undertaken in accordance with relevant Scottish, UK and EU legislation.

During April 2019, the First Minister declared a global climate emergency, making Scotland one of the first countries in the world to do so. Following this, the Scottish Government has set a net-zero greenhouse gas emissions target for 2045, with interim targets of 75% by 2030 and 90% by 2040, thereby putting in place the most stringent framework of statutory targets globally.

The COVID-19 pandemic has seen unprecedented changes in our society, necessitating the need to review our commitments and programmes to achieve our transition to a net-zero society and support Scotland's economic recovery in a manner consistent with these aims. The Cabinet Secretary for Environment, Climate Change and Land Reform announced that she hoped to lay a revised Climate Change Plan⁶ ("CCP") before the end of 2020 and the recast plan will set out a pathway as part of the work towards a green economic recovery. Furthermore, the Programme for Government commits to delivering a Blue Economy Action Plan, to strengthen the resilience of our marine industries and support coastal communities. This Plan, enabling strategic offshore wind development in Scotland, is a key driver in building our Blue Economy, helping to maximise sustainable development in Scotland.

The Plan will provide the strategic framework for the first cycle of seabed leasing for commercial-scale offshore wind by Crown Estate Scotland (the 'ScotWind' leasing round). This Plan provides the strategically planned spatial footprint for offshore wind development in Scotland and - alongside the Offshore Wind Policy Statement

⁶ <https://www.parliament.scot/parliamentarybusiness/CurrentCommittees/102792.aspx>

(“OWPS”), CCP review and the Economic Recovery Implementation Plan⁷ - forms part of the framework to ensure our sustainable green recovery.

⁷ <https://www.gov.scot/publications/economic-recovery-implementation-plan-scottish-government-response-to-the-advisory-group-on-economic-recovery/>, accessed on 13 August 2020

2. Plan

2.1 Purpose and vision

The Plan aims to identify sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland, including deep water wind technologies, and covers both Scottish inshore (Scottish territorial waters or within 12 NM from shore) and offshore waters (extending out to the Exclusive Economic Zone limit).

This Plan seeks to contribute to the achievement of Scottish and UK energy and climate change policy objectives and targets, through the provision of a spatial strategy to inform the seabed leasing process for commercial offshore wind energy in Scottish waters, which;

- Minimises the potential adverse effects on other marine users, economic sectors and the environment resulting from further commercial-scale offshore wind development; and
- Maximises opportunities for economic development, investment and employment in Scotland, by identifying new opportunities for commercial-scale offshore wind development, including deeper water wind technologies.

This Plan has been developed to ensure consistency with the objectives and principles set out within Scotland's National Marine Plan (2015) and the UK Marine Policy Statement (2011).

Figure 2 Plan Vision Statement

2.2 Plan Options

This Plan identifies 15 Plan Options ("POs"), split across 4 regions (see Figure 3), which are capable of generating several GW of renewable energy.

As a result of consultation feedback, amendments were made to the boundaries of 7 of the Draft Plan Options ("DPOs") and 2 DPOs were not progressed as POs (SW1 and NE5). A detailed account of the amendments made to the Plan is provided in the Post Adoption Statement.⁸ These amendments, however, have primarily been implemented to mitigate potential negative impacts on commercial fishing, natural heritage and the shipping sectors and in response to strong and consistent public opposition in relation to SW1. Full details regarding the consultation process are provided at section 3.1.

⁸ Scottish Government, *Sectoral Marine Plan Post Adoption Statement (2020)* Available at: <https://www.gov.scot/isbn/9781800042445>

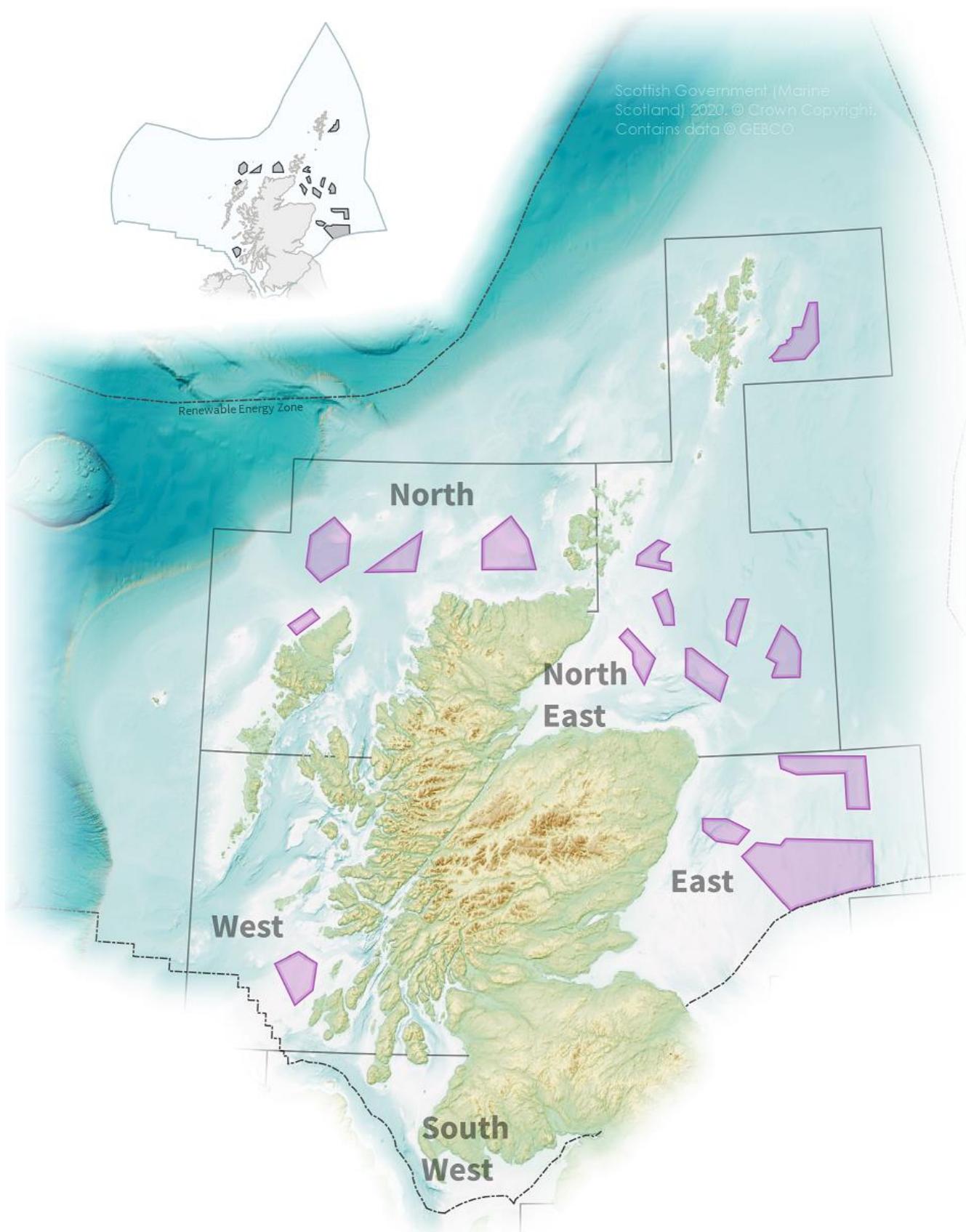


Figure 3 Final Plan Options (2020)

It should be noted that the proposed changes do not impact the overall national limit on generating capacity of 10 GW (which the Sustainability Appraisal concluded was required as a mitigation measure, on the basis of an average deployment density of 5MW/km²) under this iteration of the Plan. Nor do the revisions, including the removal of two DPOs, significantly impact the likelihood that such a level of deployment can be realised. It is, however, acknowledged that with the removal of two options it may be the case that if the maximum of 10 GW is delivered, this capacity may be more concentrated in the remaining regions. This is accounted for in the Sustainability Appraisal through the use of different capacity scenarios.

The Plan articulates the Scottish Government's strategic vision and objectives for future commercial-scale offshore wind development and articulates the spatial framework to inform the CES leasing process. It is not possible, however, to determine the exact timing, scale and type of future development within the Plan Options, which are subject to factors outwith the control of the Plan. For example, individual projects coming forward may be shaped by further technical, environmental and economic constraints related to the location, scale or timing of the proposed project. The Plan will guide the relevant consenting bodies when making decisions on individual licence and consent applications, but should not be considered as pre-determining those decision-making processes.

This Plan will be subject to iterative plan review, as set out below at section 5.4, which will ensure that this Plan remains reflective of current scientific understanding and knowledge, as well as the wider regulatory and policy context.

2.3 Crown Estate Scotland seabed leasing (“ScotWind”)

In November 2017, Crown Estate Scotland (“CES”) announced its intention to run a further leasing round for commercial-scale offshore wind energy projects in Scottish waters. This Plan provides the spatial framework for this leasing round, by identifying which areas of seabed can be made available for leasing by CES. This is the first cycle of seabed leasing to be administered wholly within Scotland, with previous rounds being administered by The Crown Estate.

The first cycle of ScotWind leasing launched on 10 June 2020 and the window for submission of Option Agreement applications⁹ will conclude following the publication of this Plan. CES will publish a leasing Post-adoption Addendum, outlining the changes made as a result of this document and the potential implications for applicants.

It is anticipated that further rounds of ScotWind will occur around 24 months after completion of the first cycle of leasing. For further detail regarding the relationship with the ScotWind leasing process, please see below at section 3.2.1. and Figure 10.

2.4 Definition of commercial-scale offshore wind

⁹ Option Agreements are agreed between CES and a project developer and set out the terms on which CES would grant such a lease in the event that the developer succeeds in obtaining all the necessary consents.

Under this Plan, commercial-scale offshore wind projects are defined as projects capable of generating more than 100 MW of electricity. This definition of ‘commercial-scale’ originated from historic leasing rounds for projects administered by The Crown Estate UK in both Scottish and (rest of) UK Waters.

With recent improvements in offshore wind technology making turbines more efficient and increasing power output, reaching the commercial-scale threshold is easier to achieve. This may mean that new innovative projects, or test and demonstration projects, may reach this threshold with fewer devices. Views were sought on this definition via the consultation process. Scottish Ministers considered the feedback received and have determined that the threshold should remain at 100 MW. This approach is consistent with the findings outlined in the ORE Catapult report (commissioned by CES) on the *‘Macroeconomic Benefits of Floating Offshore Wind in the UK’* (September 2018), which considered that “100 MW represents a manageable step from small-scale demonstration and one-off oil and gas projects” to support supply-chain growth and readiness. This Report and the 100 MW threshold have also been referenced in the current BEIS consultation regarding proposed amendments to the Contract for Difference scheme¹⁰ and proposals surrounding differentiated support for pre-commercial projects. Retention of the threshold at 100 MW would therefore also ensure consistency with the approach taken by The Crown Estate in English and Welsh waters allowing for similar future assessment methodologies or classifications. Should the Contract for Difference scheme seek to move this threshold, this may have implications for projects in Scotland. Accordingly, Scottish Ministers may seek to realign the Plan definition of “commercial-scale” to ensure consistency and competitiveness. Any amendment of this nature would be conducted through the iterative plan review process, discussed at section 5.4.

As stated, this may have an impact on future smaller innovation projects and these implications and our approach to test and demonstration projects are addressed below.

2.5 Innovation leasing and test and demonstration projects

The Plan establishes the spatial footprint for the first cycle of ScotWind and will be kept under review for any future commercial scale leasing rounds or as new evidence comes forth. Rapid technological advances and cost reductions, as well as innovative ideas and projects, will help Scotland capitalise on its excellent natural resources and expertise in the offshore wind industry, as well as presenting new opportunities for the Scottish supply chain.

Following the closure of the 2020 cycle of ScotWind, Scottish Ministers may choose to explore the demand for future leasing round to enable innovative projects and projects aimed at the decarbonisation of the oil and gas sector in Scotland. Such a leasing round would require a strategic planning exercise to assess the suitability of

¹⁰ Department for Business, Energy and Industrial Strategy *Contracts for Difference (CfD): proposed amendments to the scheme 2020* (March 2020)
<https://www.gov.uk/government/consultations/contracts-for-difference-cfd-proposed-amendments-to-the-scheme-2020> (Last accessed: 06/05/20)

potential locations and to ensure compatibility with other projects and marine users in Scotland. CES and Marine Scotland will engage with developers to scope interest in the possibility of a future leasing round.

If progressed, this approach could support and facilitate the delivery of smaller (<100MW) innovative projects. It could also specifically target larger (>100 MW) projects that seek to support the decarbonisation of the oil and gas sector. Further information regarding this approach will be released in the coming months.

2.6 National and Regional Marine Plans

The Plan has been developed in accordance with the strategic aims of the National Marine Plan (2015), which addresses the potential for interactions between renewable energy development and other marine users (including, but not limited to, recreational users, commercial fishers, other construction works, shipping traffic, ports and harbours).

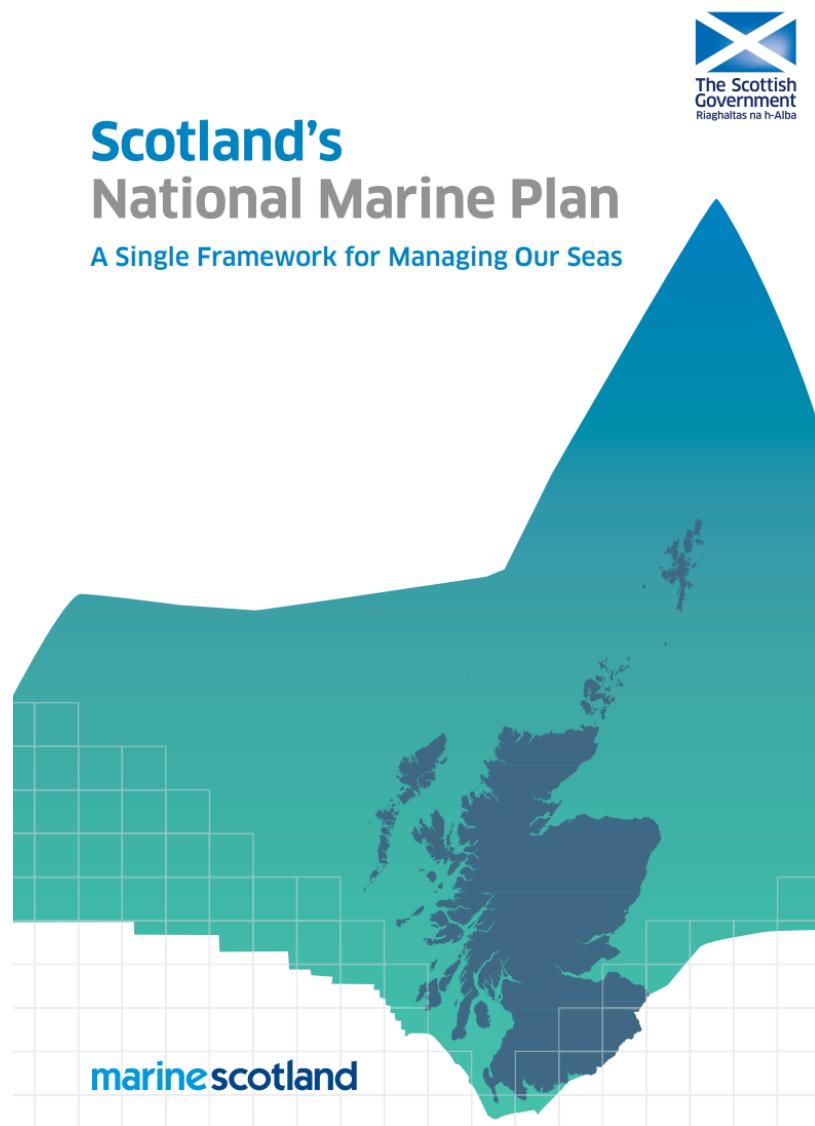


Figure 4 - Scotland's National Marine Plan

Regional marine plans are currently in the process of being prepared within those Scottish Marine Regions where there is an established Regional Marine Planning Partnership. The planning competence of these Regional Marine Planning Partnerships extends out to 12 nautical miles. Regional marine plans are required to be developed in accordance with the National Marine Plan (unless relevant considerations indicate otherwise) and will be required to take into account the Plan Options identified via the sectoral marine planning process, as well as co-ordination with the CES leasing regime and any relevant grid requirements and initiatives.

Figure 5 shows the Plan Options in relation to the Scottish Marine Regions.

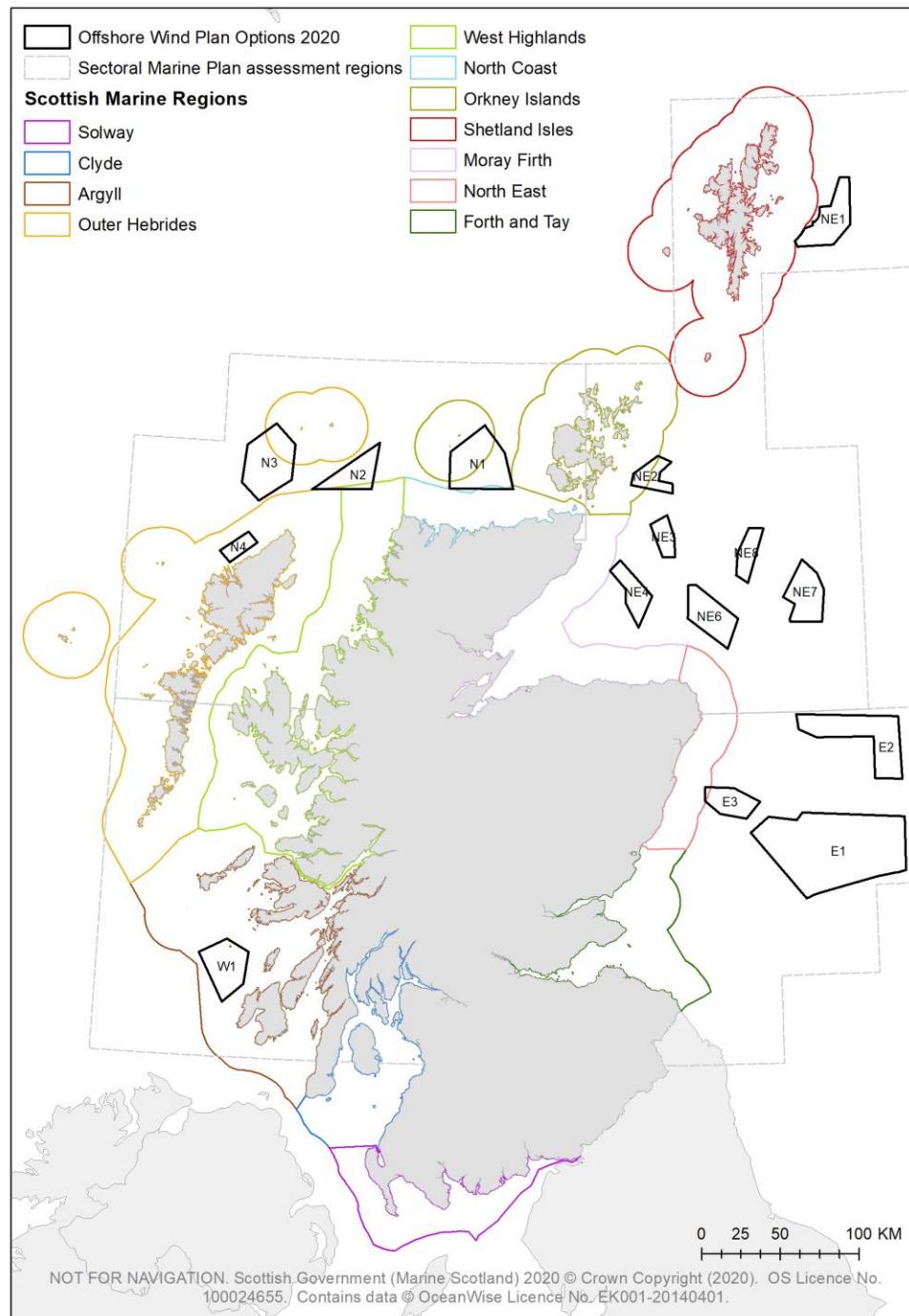


Figure 5 Plan Options and Scottish Marine Regions

2.7 Island communities

A number of Plan Options are located close to island communities or in areas from which island communities derive benefits (namely N2, N3, N4, NE2, NE1 and W1). It should be noted that the boundary of NE1 has now been amended to avoid overlap with the area covered by the Shetland Isles' works licensing regime. New powers introduced under Part 6 of the Islands (Scotland) Act 2018 allow Scottish Ministers to establish a scheme to licence development adjacent to, or within, 12 nautical miles of an island, in respect of designated island licensing areas. Island licensing areas may only be designated upon application by a Local Authority.

We recommend that developers engage with potentially impacted island communities as early as possible during the project development process. Potential impacts on island communities have been considered in the accompanying Islands Communities Impact Assessment, in accordance with our statutory duties under the Islands (Scotland) Act 2018.¹¹

2.8 Scottish Offshore Wind Policy

As set out in the Government's Programme for Scotland 2019-20, we will continue to work hard to make Scotland an attractive place to invest in offshore wind energy developments, and will take further steps this year to provide clarity and certainty across the sector. It also sets out our intention to develop a Blue Economy Action Plan which will harness and bolster Scotland's international profile as a successful, modern and innovative maritime nation.

The Scottish Offshore Wind Energy Policy Statement ("OWPS")¹² sets out our ambition to capitalise on the potential that offshore wind development can bring to Scotland and the role this technology could play in meeting our commitment to reach net zero by 2045.

The OWPS builds on the ambitions outlined in Scotland's Energy Strategy¹³, published in December 2017, which sets out the 2050 vision for energy in Scotland, including generation and energy usage targets and strategic priorities for action. The Plan will form a key component of the implementation of the Offshore Wind Policy Statement, by identifying suitable areas for further offshore wind deployment and identifying a pipeline of potential projects for the industry and supply chain. Consultation on the draft OWPS was undertaken in tandem with the draft Plan and the outputs of this consultation process influenced the finalisation of both the OWPS and the Plan.

The OWPS sets out an ambitious yet realistic target of 8 – 11 GW of offshore wind generation capacity by 2030. This figure is based upon our strong commitment to

¹¹ Scottish Government, *Sectoral Marine Plan Island Communities Impact Assessment* Available at: <https://www.gov.scot/isbn/9781800042438>

¹² Scottish Government, *Offshore Wind Policy Statement (2020)* Available at: <https://www.gov.scot/ISBN/978-1-80004-237-7>

¹³ Scottish Government, *The future of energy in Scotland: Scottish energy strategy (2017)*. Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/>

reach net zero by 2045, our commitment to sustainable development in the marine environment and an assessment of the current and estimated development rates for offshore wind projects. This Plan sets out the spatial footprint for the current cycle of ScotWind leasing and a maximum potential capacity under this leasing round of up to 10 GW. Whilst assessments and estimates of impacts of the Plan were measured out to 2050, if it is necessary, the iterative plan review process and any future ScotWind leasing may also necessitate a review of the development capacity limits in order to meet this target.

The UK Sector Deal targets the generation of 30 GW of offshore wind energy by 2030 and commits to key enabling actions, such as certainty regarding future Contracts for Difference ("CfD") rounds, investment in the UK supply chain and a commitment by the renewables sector to increase UK supply chain content to 60% by 2030 (including increases at the capital expenditure phase). The Scottish Government played a key role in the development of the UK Sector Deal, to ensure that Scotland is well placed to gain long-term benefits as the delivery of the deal progresses.

Following the Offshore Wind Supply Chain Summit early in 2020, Crown Estate Scotland set out its intention to utilise the ScotWind Leasing Round to support the local supply chain and introduce a Supply Chain Development Statement into the ScotWind Leasing process. Prior to lease, a Contracted Position Statement for any given project will be required to lay out in more detail how the Supply Chain Development Statement will be fulfilled. If the Contracted Position Statement does not fulfil the Supply Chain Development Statement there will be contractual consequences. This is discussed in more detail in the OWPS.¹⁴

SOWEC has set out the scale of ambition necessary if Scotland is to meet its share of the UK Sector Deal's targets with scale and pace. SOWEC believes that the sector in Scotland should seek to deliver at least 8 GW of offshore wind in Scottish waters by 2030 and increase the number of offshore wind jobs in Scotland to more than 6,000, a 75% increase on 2019 figures. The Plan is reflective of the scale and ambition of SOWEC's vision and recommendations.

Our energy demand and mix is changing rapidly and will continue to do so for the coming decades, as a result of factors such as; the need to reduce greenhouse gas emissions, the increased demand for low-carbon electricity for transport, ensuring security of energy supplies and tackling energy poverty. These changes have implications, not only on energy generation and required capacities but on the way that power is transferred and used in the future, through the National Grid. The OWPS sets out our future position offshore wind generation targets and challenges Scotland faces with regard to grid infrastructure and transmission charges.

This Plan assumed a traditional approach to grid connections would be adopted but The Scottish Government remains supportive of a co-ordinated approach to grid infrastructure and are playing a constructive role in work to explore opportunities to progress these approaches at UK and European levels.

¹⁴ Scottish Government, *Offshore Wind Policy Statement (2020)* Available at:
<https://www.gov.scot/ISBN/978-1-80004-237-7>

3. Plan development process and assessment of potential impacts

The sectoral marine planning process (as shown in Figure 6) is an iterative process, informed through stakeholder engagement and evidence from the related social, economic and environmental assessments. All of the information and consultation feedback gathered throughout the planning process has been used to support the Scottish Ministers in identifying the Plan Options and policies included in this Plan.

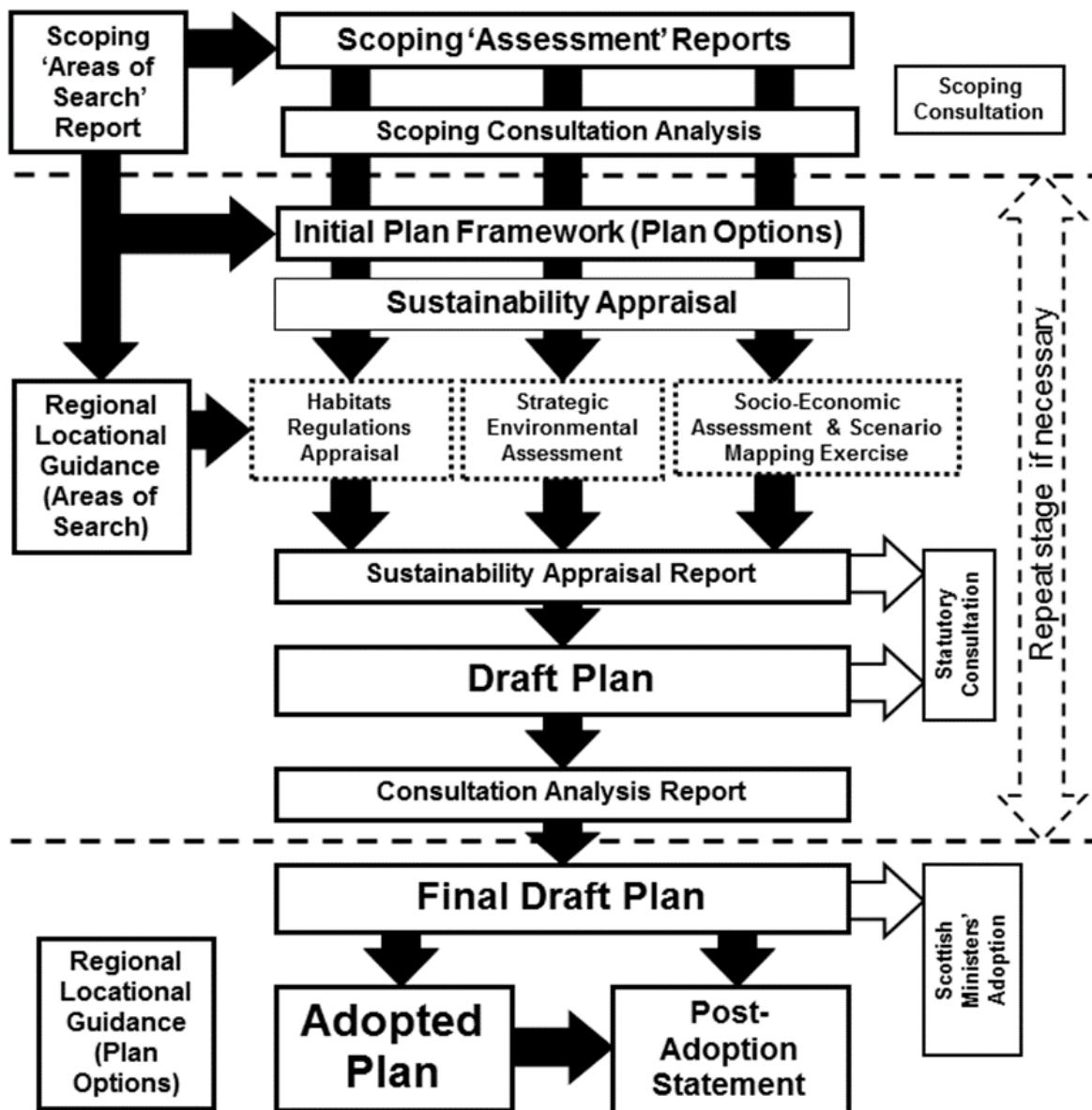


Figure 6 Sectoral Marine Plan for Offshore Wind Energy Development Process

This process ensures delivery of the necessary environmental and socio-economic assessments required to ensure compliance with our statutory duties. Furthermore, the process enables active and regular engagement with key stakeholders throughout the process, as well as through specific consultation exercises.

3.1 Key planning stages

The key stages of the planning process in relation to the identification of the Draft Plan Options are:

1. Opportunity and Constraint Analysis – Iteration 1
2. Opportunity and Constraint Analysis – Iteration 2 - Single Issue Constraint Analysis
3. Scoping Consultation
4. Opportunity and Constraint Analysis – Iteration 3
5. Identification of Draft Plan Options
6. Assessment of Draft Plan Options
7. Consultation on Draft Plan Options
8. Finalisation and adoption of the Plan
9. Next Steps

1. Opportunity and Constraint Analysis – Iteration 1

The identification of initial Areas of Search (“AoS”) was carried out through the use of an Opportunity and Constraint (“O&C”) analysis.¹⁵ It built upon previous work carried out by Marine Scotland Science (“MSS”) in 2011¹⁶ and the production of draft Regional Locational Guidance for potential deep water floating offshore wind test sites in 2014.¹⁷ The analysis was iterative, so updates could be incorporated as required in order to reflect stakeholder feedback.

Full details of the O&C analysis can be found in the AoS scoping report published for consultation in 2018.¹⁸ The O&C analysis sought to identify areas of opportunity for the future development of offshore wind, whilst also identifying areas that minimised potential negative impacts to the environment, other sectors and users of the sea. This analysis was completed through the use of GIS and numerous spatial data resources.

2. Opportunity and Constraint Analysis – Iteration 2

Sectoral engagement workshops were held in spring 2018. The AoS were then refined with consideration to specific spatial issues and feedback from the workshops.

This refinement process identified a range of distinct AoS (see Figure 7). As the draft Plan is technology neutral, no commercial or technology specific information was used in this refinement process

3. Scoping Consultation – Screening and Scoping Reports

¹⁵ <https://www.gov.scot/publications/scoping-areas-search-study-offshore-wind-energy-scottish-waters-2018/>

¹⁶ Davies, I. M. and Watret, R. (2011) Scoping Study for Offshore Wind Farm Development in Scottish Waters. Scottish Marine and Freshwater Science Vol 2 No 13. Available at: www.gov.scot/Publications/2011/11/28104658/0

¹⁷ <https://www2.gov.scot/Topics/marine/marineenergy/Planning/DRLG>

¹⁸ <https://www.gov.scot/publications/scoping-areas-search-study-offshore-wind-energy-scottish-waters-2018/>

Scottish Ministers then consulted on the screening and scoping stages of the Plan process during June and July 2018. Screening and scoping reports were prepared and published online for the SEA, HRA and SEIA alongside the AoS scoping study¹⁹.

4. Opportunity and Constraint Analysis – Iteration 3

Iteration 3 of the O&C analysis was undertaken, which considered the responses received during the Scoping Consultation, for more details see the Consultation Analysis Report.²⁰

The AoS were refined with consideration to the outputs of the Iteration 3 O&C Analysis. As a result, certain AoS were either removed or refined to avoid/incorporate certain areas of Scottish Waters.

This stage also considered the areas of seabed proposed by stakeholders via the scoping consultation. A number of the areas proposed overlapped with existing AoS, while others overlapped with areas with higher levels of constraint or entirely new areas.

Upon review of the above information, a number of areas were identified to move forward in the plan process. Accordingly, some additional areas were included at this stage, where there was significant stakeholder interest, but also increased constraint. The Sustainability Appraisal stage assessed these new areas in greater detail.

5. Identification of Draft Plan Options

The 22 revised AoS were made available to the Sectoral Marine Plan Project Board and two Project Steering Groups for consideration and comment.²¹

Responses from both the Board and Steering Groups, together with the outputs of the initial assessments, was presented to Scottish Ministers to inform their decision on which AoS should progress to the Sustainability Appraisal for more detailed assessment. 17 revised AoS were selected as DPOs.

¹⁹ <https://consult.gov.scot/marine-scotland/offshore-wind-scoping/>

²⁰ Available here: <https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/>

²¹ Further detail regarding the cross sectoral Steering Groups is provided in the *Statement of Public Participation*. Available here: <https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/>

Sectoral Marine Plan for Offshore Wind Energy (2020)

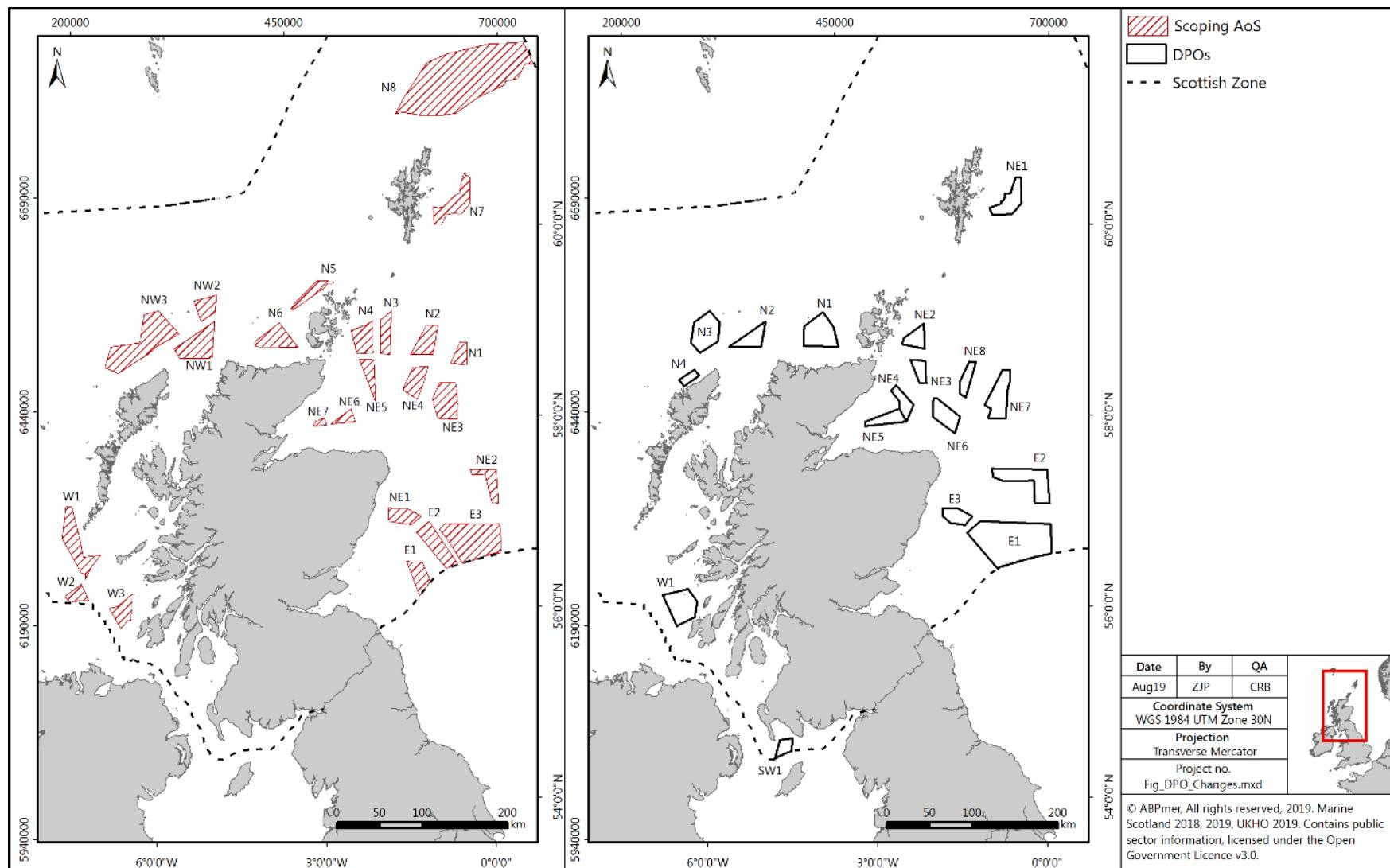


Figure 7 Evolution of Areas of Search to Draft Plan Options

6. Assessment of Draft Plan Options

The DPOs identified have been subject to Strategic Environmental Assessment (SEA), Habitats Regulations Appraisal (HRA) and Socio-Economic Assessment with reports produced to summarise these.²²

The assessments completed on the Draft Plan were included within the consultation discussed below.

7. Consultation on Draft Plan Options

Statutory consultation was held on the draft Plan and Sustainability Appraisal for a period of 14 weeks between 18 December 2019 and 25 March 2020. To support the consultation process, a total of 17 events were held during February and March 2020 were held in coastal communities across Scotland during February and March 2020.

A total of 443 consultation responses were received and the responses received have been analysed to produce the Consultation Analysis Report (June 2020).²³ Where permission has been granted, copies of submitted responses have been published online.²⁴

8. Finalisation of Plan

An analysis of the responses received was used to inform the Scottish Ministers' decision on which Draft Plan Options to progress. The Post Adoption Statement published in conjunction with this Plan details the changes made to the draft Plan as a result of consultation feedback. Figure 8 details the changes between draft and final Plan Options.

In addition to the production of the Final Plan, the following documents have been updated and finalised;

- Final Regional Location Guidance;
- Post Adoption Statement;
- Appropriate Assessment;
- Final Islands Communities Impact Assessment; and
- Final Equalities Impact Assessment.

9. Next Steps

Within one month of the publication of this Plan, CES will publish a Post Adoption Addendum, detailing the implications of any differences between the draft and final Plans for their leasing regime. The application window for Option Agreements will close thereafter.

²² All Draft Plan documents are available here: <https://protect-eu.mimecast.com/s/xQmKCN90zS0pNX6c4uirf?domain=consult.gov.scot/>

²³ Available here: <https://www.gov.scot/publications/draft-sectoral-marine-plan-offshore-wind-energy-2019-consultation-analysis-report/>

²⁴ Available here: https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/consultation/published_select_respondent

The Plan will guide the relevant consenting bodies when making decisions on individual licence and consent applications, but should not be considered as pre-determining those decision-making processes.

After adoption of the Plan, applicants will prepare their licensing and consenting applications. If successful in obtaining the necessary consents and licences and if the conditions of their Option Agreements have been fulfilled applicants may then choose to proceed to an Agreement for Lease with CES, which enables construction to commence. The standard project development process is outlined in Figure 9 below and further information about the marine licensing and consenting process and project-level assessment is included at section 5.1.2.

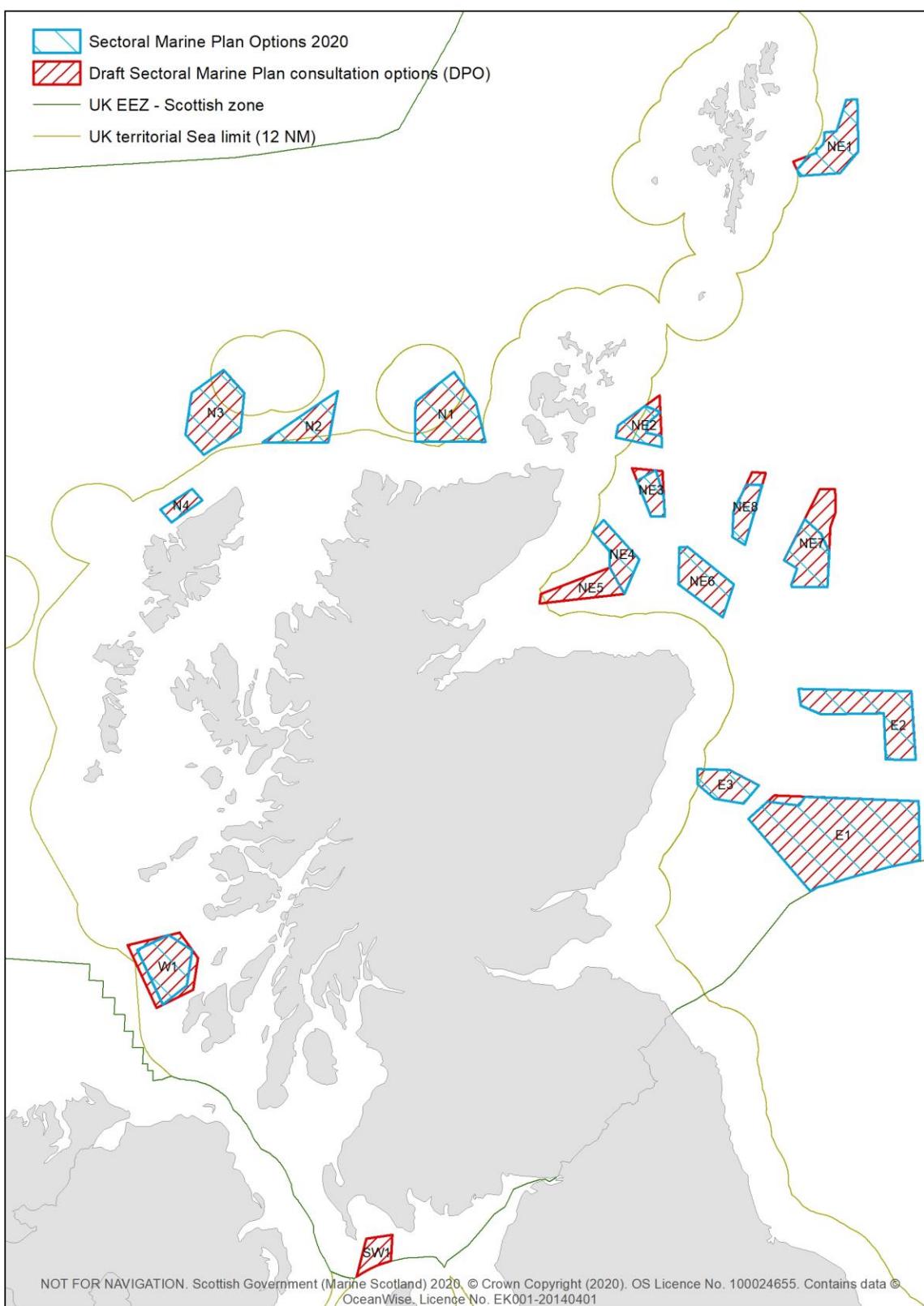


Figure 8 Draft Plan Options and final Plan Options

1 - Publication of Final Sectoral Marine Plan



Final Plan and supporting documentation published

2 - ScotWind Leasing - Closure of application window

Closure of application window and Option Agreements concluded

3 - Licensing and consenting

Projects developed and progress through the licensing and consenting regime

4 - ScotWind - Agreements for Lease granted

If successful in obtaining licence and consents and fulfilling terms of Option Agreements.

5 - Construction and operation phases

Construction, operation and maintenance phases of offshore wind farms

Figure 9 What happens next - Leasing, Licensing and Consenting Regimes

3.2 Sustainability Appraisal

Sustainability Appraisal (“SA”) was undertaken on the 17 DPOs, comprising of a Strategic Environmental Assessment (“SEA”), Habitats Regulations Appraisal (“HRA”) and Social and Economic Impact Assessment (“SEIA”). The findings of the SA are set out in the individual SEA, HRA and SEIA reports and summarised in the overall SA report. These reports, and the draft Regional Locational Guidance (“RLG”), were published for consultation in December 2019.²⁵

The RLG has been updated to reflect the final POs. It provides baseline data used in the assessment process and supports further spatial planning and inform project-level site selection and assessment.

The modifications made to the POs and final Plan are minor and do not alter the significance of the impacts assessed in the SA, therefore, it is not necessary to undertake re-assessment and further consultation in respect of these minor modifications.

The assessments have been undertaken in accordance with the European Commission Directive and the Scottish requirements for Strategic Environmental Assessment,²⁶ the Habitats and Birds Directives²⁷ and the requirement to consider social and economic factors under the UK Marine and Coastal Access Act 2009, and in accordance with the methodology agreed by the two cross-sectoral Steering Groups (outlined in the Scoping documentation) and statutory consultees (as defined by the Environmental Assessment (Scotland) Act 2005).²⁸

The likely significant effects during all phases of offshore wind development, including pre-construction (e.g. unexploded ordnance clearance (“UXO”) and survey works), construction, operation and maintenance and decommissioning, have been considered. In order to complete the assessment of potential impacts, a number of underpinning assumptions have been made. These are set out in full in the various assessment reports but are summarised briefly at section 3.2.1 below.

3.2.1 Underpinning assumptions

The assessment was undertaken on a technology neutral basis, as it is unclear how quickly and to what extent deep water technologies will become cost competitive and, therefore, what the balance of deployed technologies may be. Whilst the precise nature of technology and construction method(s) etc. have implications for the scale and nature of potential impacts, it is not appropriate to make detailed assumptions about these within the assessments. The Plan identifies POs located in a range of water depths, but does not direct what type of technology or technologies

²⁵ <https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/>

²⁶ SEA Directive 2001/42/EC and the Environmental Assessment (Scotland) Act 2005

²⁷ Conservation of Habitats and Species Regulations 2017 (in relation to reserved matters), the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2017.

²⁸ See further, Scottish Government, *Sectoral Marine Plan Offshore Wind Scoping Consultation* <https://www2.gov.scot/Topics/marine/marineenergy/Planning/smp-scoping-consultation>

should be deployed within them. Full details on the range of technologies and methods assessed were set out in the *Scoping Context Report*.²⁹

The impacts of individual DPOs were assessed using a realistic maximum deployment scenario (in GW) for each DPO, which equated to a proportion of the overall area of the DPO. This proportion varies according to the size and conditions of the DPO and has been derived from known constraints on development, early indications as to likely developer interest and established infrastructure to support development during the plan timescale.

Development within POs, therefore, should not exceed the parameters assessed in the SA, e.g. meaning that operational development(s) within a PO should not exceed the maximum realistic development scenario for that PO (as outlined in Table 1 below). The regional scenarios presented have been used in the assessment to provide an indication of potential impacts, however, these regional scenarios will not be used to constrain potential levels of operational development within POs.

In addition, potential impacts have been assessed at regional and national levels using a range of overall deployment scenarios (3, 5 and 10 GW at a national level). This range of development scenarios has been used within the SEA, HRA and SEIA to assess a wide range of impacts and reflect the inherent uncertainty in carrying out strategic assessments and the possible scales of development within each DPO, regionally and nationally.

Scenarios were developed relating to the potential scale of development within each option area, taking account of the ambitions of the plan (maximum of 10 GW installed capacity) in order to feed into assessment processes so that the outcomes of assessments were realistic. These scenarios were used in both the SEA and the SEIA and ultimately allowed for some consideration of spatial planning within each PO area as a mitigation measure. Whilst these scenarios gave an indication of the potential scale of maximum development, consistent with the aspirations of the plan, these scenarios should not be taken as being an endorsement of projects up to this size within a PO, as further project level assessment and planning will be required to ensure avoidance of significant adverse effects. Some consideration of the potential constraints associated with the environmental, social and economic effects of developments is included within the SEA, SEIA, HRA and RLG reports.

A recent review of the density of offshore wind turbine layouts of recent European offshore wind projects indicated average deployment densities of between 4-6.5 MW/ km²,³⁰ and, therefore, an average deployment density of 5 MW/ km² was used in the assessment. When this average deployment density is applied, it is estimated that approximately 2,000 km² of seabed would need to be operationally developed to deliver up to 10 GW of generating capacity nationally.

²⁹ See further, Section 6, Scottish Government, *Sectoral marine plan for offshore wind energy: context report* (June 2018). Available at: <https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy-encompassing-deep-water-plan>

³⁰ Deutsche Windguard, *Capacity Densities of European Offshore Wind Farms* (2018). Available at: https://vasab.org/wp-content/uploads/2018/06/BalticLINES_CapacityDensityStudy_June2018-1.pdf (Last accessed: 02/10/20)

Where a PO is now smaller in size than the DPO assessed, the realistic development scenario has not changed, i.e. the proportion of the PO area which could be utilised may increase. For example, NE2 has been reduced in size by 119 km² (26%). The realistic development scenario for this PO remains 1 GW, but the maximum percentage of the area which could be developed has increased from 43% at DPO stage, to 58% at PO stage.

Implications of development scenarios for the first cycle of ScotWind Leasing

The SA determined that an overall national limit on generating capacity of 10 GW was required as a mitigation measure (on the basis of average deployment of 5MW/km²). The development scenarios outlined in the SA estimated that the operational development of approx. 2,000 km² of seabed would be required in order to deliver up to 10 GW of generating capacity.

It is recognised, however, that due to the nature of the leasing and development processes and likely attrition rates,³¹ CES will need to offer Option Agreements for an area of greater than 2,000 km² to be likely to enable the operational development of up to 10 GW of generating capacity.

Making an area of up to 8,600 km² of seabed available for Option Agreements via the first cycle of ScotWind leasing could, therefore, support the development of projects capable of delivering up to 10 GW of total generating capacity.³²

Nationally and at the individual PO level, the effects of consented and licensed offshore windfarm development under this cycle of leasing should not exceed the assumed physical footprint for 10GW of generation as assessed in this Plan of approx. 2,000 km² of seabed. It is acknowledged that as technology matures facilitating more efficient use of the seabed, over the life of the Plan, the average deployment density may increase and the same physical footprint may be capable of delivering more than 10 GW in the future.

The ScotWind leasing round documentation³³ sets out how this has been applied at the Option Agreement stage for the purpose of lease applications. A Post-adoption Addendum to these documents will be published by CES following adoption of this Plan. This will address any changes between the draft and final Plan.

Figure 10 Implications of development scenarios for the first cycle of ScotWind Leasing

³¹ Scottish Renewables, *An industry view of the Draft Sectoral Marine Plan for Offshore Wind* (December 2018), recommended a 30% MW attrition rate - a higher figure for Scotland given the more challenging conditions here relative to the rest of the UK, particularly regarding water depth, ground conditions and grid charges. This attrition rate reflects reduction in eventual capacity both at a project level (where an entire project ceases to be progressed), and within project (as MW tend to be lost from initial design to construction).

³² To result in a final area of seabed under lease capable of enabling up to 10 GW of generating capacity, the initial area covered by Option Agreement arising from ScotWind Leasing needs to allow for the attrition of capacity (as per 31 above). The initial area needs to offer the flexibility designed into ScotWind Leasing, which allows for Option Agreements areas to be three times the area of the eventual project, to reduce the risk to developers that a viable project may not be identified within an Option Agreement area. Applying these factors alongside the assessment density (5 MW/km²), indicates that an initial area of seabed under option agreement of 8,571.4 km² would be necessary to best enable operational development of up to 10 GW of generating capacity.

³³ Available at: <https://www.crownestatescotland.com/what-we-do/marine/asset/offshore-wind/section/scotwind-leasing>. Accessed on 30 July 2020

Table 1 Summary of maximum realistic development scenarios (DPO, regional and national levels)

Region	DPO	Total DPO Area (km ²)	Realistic maximum development scenario for DPO (GW)	Realistic development as percentage of total DPO Area	Regional Low Scenario (GW)	Regional Medium Scenario (GW)	Regional High Scenario (GW)
East	E1	3742	3	16%			
	E2	1287	2	31%			
	E3	474	1	42%			
	Sub-total	5503	6		1	2	3
North East	NE1	751	2	53%			
	NE2	345	1	58%			
	NE3	265	1	76%			
	NE4	440	1	45%			
	NE6	699	2	57%			
	NE7	684	3	88%			
	NE8	339	1	59%			
	Sub-total	3523	11		1.5	3	4.5
North	N1	1163	2	34%			
	N2	561	2	71%			
	N3	1106	2	36%			
	N4	200	1	100%			
	Sub-total	3030	7		1	2	3
West	W1	754	2	53%			
	Sub-total	754	2		0.5	1	2
Total:		12810	26		4.3	8.6	13.5
Scaled back to national scenarios (GW):					3	5	10

3.2.2 Strategic Environmental Assessment (“SEA”)

SEA is intended to increase the consideration of environmental issues during decision-making related to strategic documents such as plans, programmes and strategies. For the Plan, it has been used to test and comment on the selection of POs from a strategic perspective and to identify potential strategic environmental constraints, in order to steer future development. The process is applicable to strategic and, to some extent, regional issues.

As a result, the SEA findings have led to broad recommendations for the Plan as a whole. The findings can also, where appropriate, be used as a starting point for further, detailed, data collection and environmental assessment – either to support strategic level review or for project-level assessment. A summary of the key findings for each PO are set out in section 4.

The SEA is available here: <http://www.gov.scot/ISBN/9781839603761>

3.2.3 Habitats Regulations Appraisal (“HRA”)

It was identified at the pre-screening stage that a HRA would be required, as the possibility of likely significant effects on European site(s) from the Plan could not be excluded (either as a result of development within a DPO in isolation or in-combination with other plans or projects). Details of the HRA screening process are included in the *Sectoral Marine Plan for Offshore Wind Energy: Strategic Habitat Regulations Appraisal Pre-Screening Report*.³⁴

The HRA included consideration of impacts on Special Areas of Conservation (“SAC”), candidate and possible SAC (“cSAC and pSAC”), Special Protected Areas (“SPA”), proposed SPA (“pSPA”), Sites of Community Importance (“SCI”) and Ramsar sites (listed under the Ramsar Convention on Wetlands of International Importance). The HRA has been undertaken for all DPOs within the draft Plan and has resulted in the implementation of plan-level mitigation measures to avoid potential adverse impacts on site integrity, as well as recommendations for project-level mitigation measures. A summary of the key findings for each PO are set out in section 4. An Appropriate Assessment has been undertaken for the Plan Options included in the final Plan.

The HRA is available here: <http://www.gov.scot/ISBN/9781839603754>

3.2.4 Socio-Economic Impact Assessment (“SEIA”)

The SEIA has considered the potential negative and positive social and economic impacts of the Plan on a range of sectors. Due to uncertainties regarding the potential scale of development within any Plan Option, regionally or nationally, assessment has been undertaken for a range of deployment scenarios (ranging from low-medium-high), which have been compared to the *do nothing* approach. The SEIA has also been undertaken on a worst case scenario basis where appropriate,

³⁴ (June 2018). Available to view here: <https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy-encompassing-deep-water-plan-9781788519632/pages/4/>

given the uncertainty around development and technology types at a plan level. More detailed project-level assessment will be required accordingly.

The SEIA identified that DPOs are most likely to have negative impacts on the commercial fisheries, commercial shipping, tourism and recreation sectors. The SEIA also identified that development may also have impacts for other sectors (such as the defence and aviation sectors). The SEIA therefore identified a range of possible project-level mitigation measures, such as; adherence to Maritime and Coastguard Agency guidance regarding shipping lanes, spatial planning within DPOs to avoid areas of higher fishing activity, maintaining access to recreational fishing grounds within arrays or reduction in turbine sizes to minimise landscape, seascape and visual impacts. Positive impacts in relation to Gross Value Added and employment, including social impacts, were also assessed in the SEIA. A summary of the key findings for each PO are set out in section 4.

The SEIA is available here: <http://www.gov.scot/ISBN/9781839603792>

3.2.5 Sustainability Appraisal (“SA”)

SA is a tool to undertake cross-sectoral assessment of the impacts of plans in order to promote sustainable development and has been an integral part of every stage of the planning process. The SA has contributed to the Scottish Ministers’ decision-making process and the SA report provides an overview of the conclusions of the component reports (i.e. SEA, HRA and SEIA).

The SA is available here: <http://www.gov.scot/ISBN/9781839603785>

3.2.6 Islands Communities Impact Assessment and Equalities Impact Assessments

Draft partial Islands Communities Impact (“ICIA”) and Equalities Impact Assessments (“EQIA”) were prepared to consider how the draft Plan could impact island communities and equalities considerations. These partial assessments formed part of the consultation process and comments received were used to refine and produce the final ICIA and EQIA records for this Plan.

The comments received did not identify any additional impacts which needed to be considered. Responses reiterated the need for early and sustained engagement with potentially affected communities.

3.3 Consultation Analysis Reports

Extensive stakeholder consultation has been undertaken throughout the planning process to support identification of POs and the development of the Plan.

During June to July 2018, a consultation exercise on the Scoping Areas of Search and supporting screening and scoping reports was undertaken and the feedback used to further refine the O&C model and identification of revised AoS. Further stakeholder engagement was undertaken post-scoping to support the identification and development of DPOs. The consultation analysis report for this consultation

exercise provides a summary of the feedback received during the scoping and post-scoping periods.

The consultation analysis report for pre and post scoping stages is available here:
<https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/>

A further consultation analysis report has been prepared for the statutory consultation on the draft Plan and SA, which ran for a period of 14 weeks from 18 December 2019 to 25 March 2020 (as detailed above). The Consultation Analysis Report also provides summarises of the consultation events which were held during February and March 2020 and is available here:

<https://www.gov.scot/publications/draft-sectoral-marine-plan-offshore-wind-energy-2019-consultation-analysis-report/>

In addition, copies of submitted responses (where respondents have indicated that they approve to their publication) can be viewed and downloaded via the Scottish Government's Consultation Hub here:

<https://consult.gov.scot/marine-scotland/draft-sectoral-marine-plan-for-offshore-wind/>

3.4 Post Adoption Statement

In addition to the impact assessments described above, A Post Adoption Statement ("PAS") is published alongside this Plan. The PAS provides further detail regarding action taken in the final Plan to address consultation comments, including amendments made to the DPOs to arrive at final POs. The PAS delivers on the requirements of the Strategic Environmental Assessment Directive (as implemented by the Environmental Assessment (Scotland) Act 2005). The PAS is available here:
<https://www.gov.scot/isbn/9781800042445>

4. Plan Options

4.1 National perspective

The Plan identifies 15 POs across four regions within Scottish Waters (see Figure 11). As the POs are spatially distinct within the four regions, there is limited potential for cumulative negative effects at a national scale. Conversely, there exists the potential for cumulative positive effects through a significant contribution to the decarbonisation of the energy sector in Scotland and the establishment of a secure energy supply.

Regional cumulative effects include the potential for negative effects on bird populations, benthic habitats, cetaceans, navigational safety, seascape/landscape and commercial fisheries. It is recognised that both regionally and nationally the level of impacts will vary according to which POs become the focus of development. The development of multiple POs within a region could form a potential barrier for mobile species (such as seabirds, diadromous fish and cetaceans) or result in the diversion of shipping and fishing traffic routes, or concentration of vessel traffic into smaller areas. The North East region, for example, has the largest number of POs and, therefore, the scale of potential positive and negative impacts from this region may be higher and opportunities to mitigate potential negative impacts may be comparatively more limited if development is concentrated in this region.

In line with the conclusions of the SA, HRA, SEA and SEIA, the Plan includes measures to mitigate potential impacts at various scales, including the requirement for further spatial planning within individual POs and limiting the scale of development under this iteration of the Plan to 10 GW nationally.

Whilst 10 GW was used as a total maximum realistic development scenario for the Plan as a whole, the individual PO scenarios (shown in Table 1) should not be taken as being an endorsement of projects up to this size within a PO, as further project level assessment and planning will be required to ensure avoidance of significant adverse effects.

The following sections summarise the most significant potential opportunities and constraints that developers will need to overcome in each PO and region. This is not intended to be an exhaustive list of all potential impacts which could occur and project-level impacts will need to be identified via further project-level assessment, which will benefit from the further level of detail required at that scale.

The SA, SEA and HRA provide a list of suggested project-level mitigation measures, however, these will vary according to the scale, nature and location of the proposed development. The following types of potential negative impacts have been identified and assessed in the SEA, HRA and SEIA and will require further consideration (in addition to any specific potential impacts appropriate to the proposed development) at a project-level;

- Loss of/damage to marine and coastal habitats;
- Effects from pollution releases on species and habitats;
- Effects on subsea geology, sediments and coastal processes arising from changes in hydrodynamics and existing wave regimes;
- Issues relating to navigational safety, aviation and collision risk;
- Effects on marine and coastal recreation and access;
- Effects on landscape and coastal characters and visual receptors;
- Contribution to supporting a diverse and decarbonised energy sector;
- Effects from the introduction and spread of Invasive Non Native Species;
- Effects on residential amenity;
- Loss of/damage to historic environment features and their settings;
- Effects arising from noise, vibration, light, dust and shadow flicker;
- Effects on water quality; and
- Effects on ecological status.

Due to the level of uncertainty surrounding potential cable routes to shore, landfall locations and grid connection, a detailed assessment of specific cable routes to shore has not been included in the SA. The SEA, HRA, SEIA and RLG assume that any area inshore of a PO could be utilised as a cable route and identifies areas of higher sensitivity for cable routes and landfall points. Developers are expected to take into consideration sensitive areas at a project-planning level and undertake early engagement with key stakeholders regarding survey requirements, cable routing and burial/protection methods.

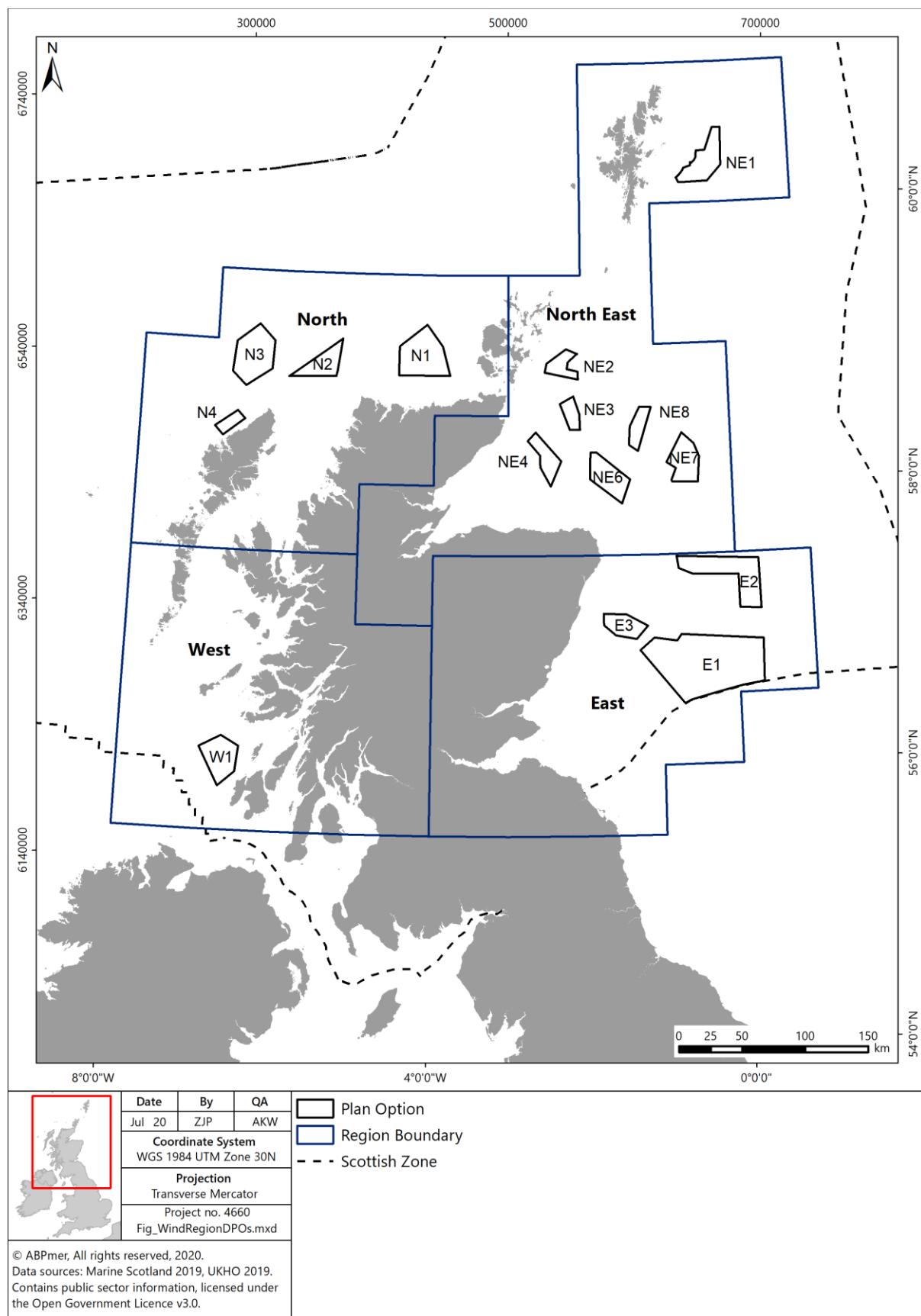


Figure 11 Sectoral Marine Plan Regions and POs

4.2 West Region

The West region encompasses one PO (W1), located off the coast of Islay (as shown in Figure 12). The key risk factors to development within the West region are:

- potential visual impacts and landscape/seascape character impacts;
- potential impacts on marine mammal receptors;
- potential impacts on commercial shipping;
- risks to bird species, including collision risk and displacement, as well as potential impacts to birds on migratory pathways;
- potential impacts on benthic habitats and species;
- potential impacts on migratory fish species;
- potential impacts on commercial fishing;
- potential impacts on recreational angling; and
- potential cost impacts and associated navigational risk from diverting key commercial shipping routes.

Within the West region, there is the potential for tidal energy development in this region and three leases were previously awarded for tidal stream installation (including Isle of Islay, Sound of Islay and Connel), however, none of these sites are currently operational (although consents have been awarded for the Isle of Islay and Sound of Islay sites). These projects may need to be considered within any in-combination assessment. The SEA recognises the potential for cumulative effects on migrating birds with currently installed wind turbines at the Robin Rigg windfarm and other west coast DPOs in the North region.

4.2.1 W1

W1 covers a total area of 754 km² and offers a potential maximum realistic deployment scenario of up to 2 GW of generating capacity (equating to 53% of the total area of the DPO). The majority of the DPO is in shallow water (< 60 m) but gets deeper to the north-west..

The SEIA identifies generally lower socio-economic costs arising from potential offshore wind development within the PO, with the most significant cost to the recreational angling sector, however, commercial fisheries, particularly static gear, may also be impacted by development.

There would be the potential for adverse visual impacts and impacts on seascape and landscape character, due to the proximity of the PO to shore, particularly the south eastern part of the PO, however, these impacts may be reduced or avoided via project-level mitigation measures and the now increased distance from shore due to the modified PO. The western part of the PO is located close to a shipping route but avoids the main thoroughfare. Project-level mitigation measures may be required to address potential impacts on commercial shipping and navigational safety.

Consultation would be required with the Ministry of Defence (“MOD”) regarding potential offshore safeguarding concerns due to potential Royal Navy activities within W1.

Diadromous fish, particularly Atlantic Salmon, are likely to be present within this PO. Although the exact location of migration routes or connectivity to specific rivers is not known, mitigation at the project-level may be required to avoid potential negative impacts.

Mitigation to reduce, avoid or offset impacts on marine mammals (including harbour porpoise, basking shark and seals) during construction activities would need to be considered at a project level, given the proximity of W1 to a number of designated and protected sites. Consideration would also need to be given to potential impacts on benthic features (deep sponge communities) located to the north west corner of W1, as well as potential impacts on migratory whooper swans.

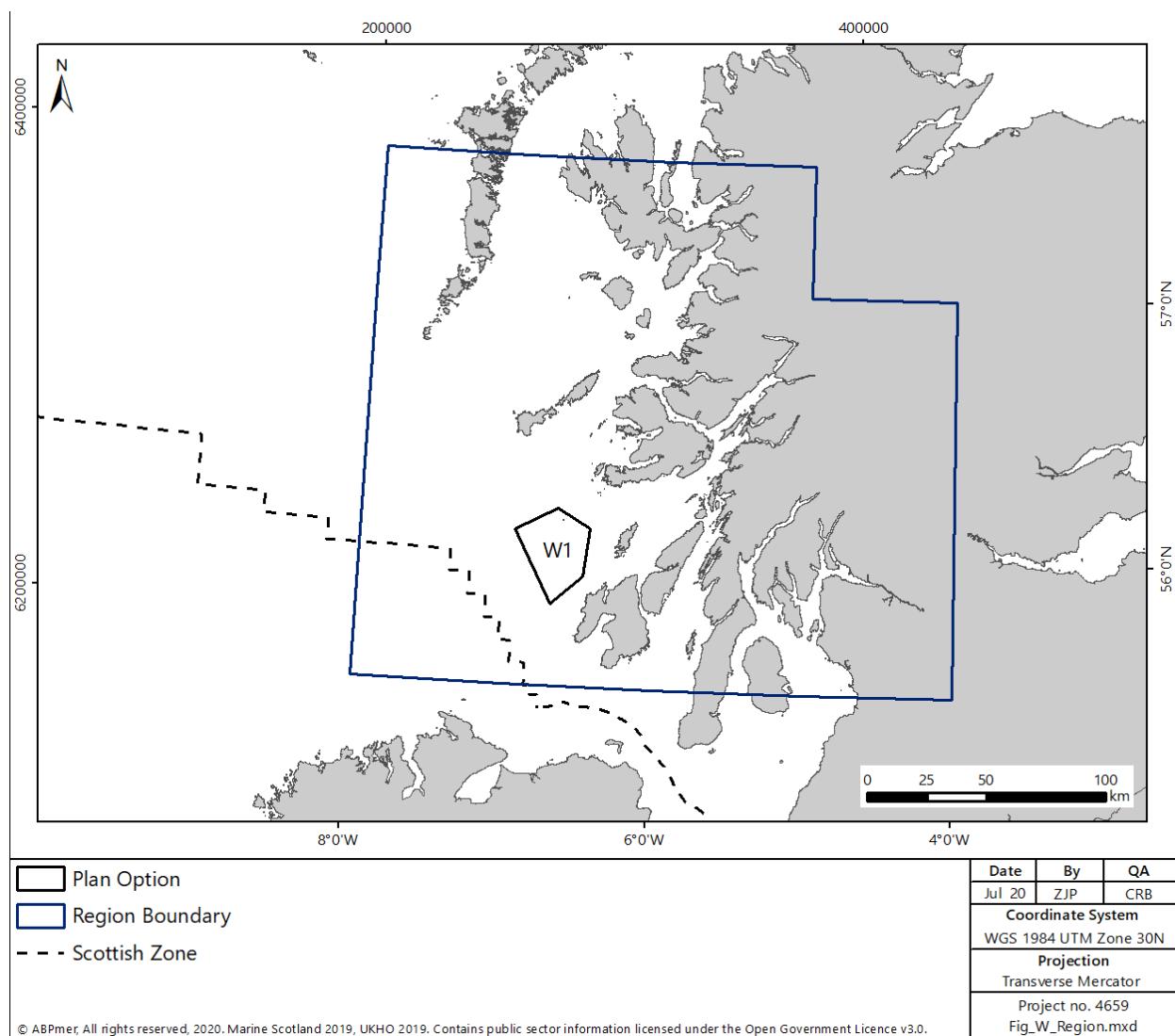


Figure 12 West Region PO

4.2.2 Key actions for the West region

In order to progress development in the West region, the following (non-exhaustive) key steps are likely to form part of the development process:

- consultation with stakeholders in Argyll and Bute regarding landscape and seascape concerns;
- consultation with MOD regarding potential interaction with Royal Navy activities;
- consultation with the fishing community;
- pre- and post-consent, and post-construction, bird monitoring;
- benthic survey and spatial planning to avoid significant effects on benthic PMF receptors; and
- mitigation of potential cost impacts and associated navigational risk from diverting key commercial shipping routes.

4.3 North region

The North region encompasses four POs (N1, N2, N3 and N4) (as shown in Figure 13). The key risk factors to development within the North region are:

- Potential adverse visual impacts and landscape/seascape character impacts;
- potential impacts on marine mammal receptors;
- risks to bird species, including collision risk and displacement, as well as potential impacts to birds on migratory pathways;
- potential impacts on commercial fishing;
- potential impacts on migratory fish species;
- potential impacts on benthic habitats and species; and
- potential impacts on recreational angling.

Within the North region, there is one demonstration wind energy development which holds a valid consent (Dounreay Tri) but has not begun construction. In addition, a number of tidal and wave devices have been deployed in the waters around Orkney as part of the European Marine Energy Centre (“EMEC”) and Phase 1 of the MeyGen tidal array is currently operational in the Pentland Firth. Development across multiple POs in this region may result in cumulative impacts on a range of receptors, including migratory birds, cetaceans and fish species.

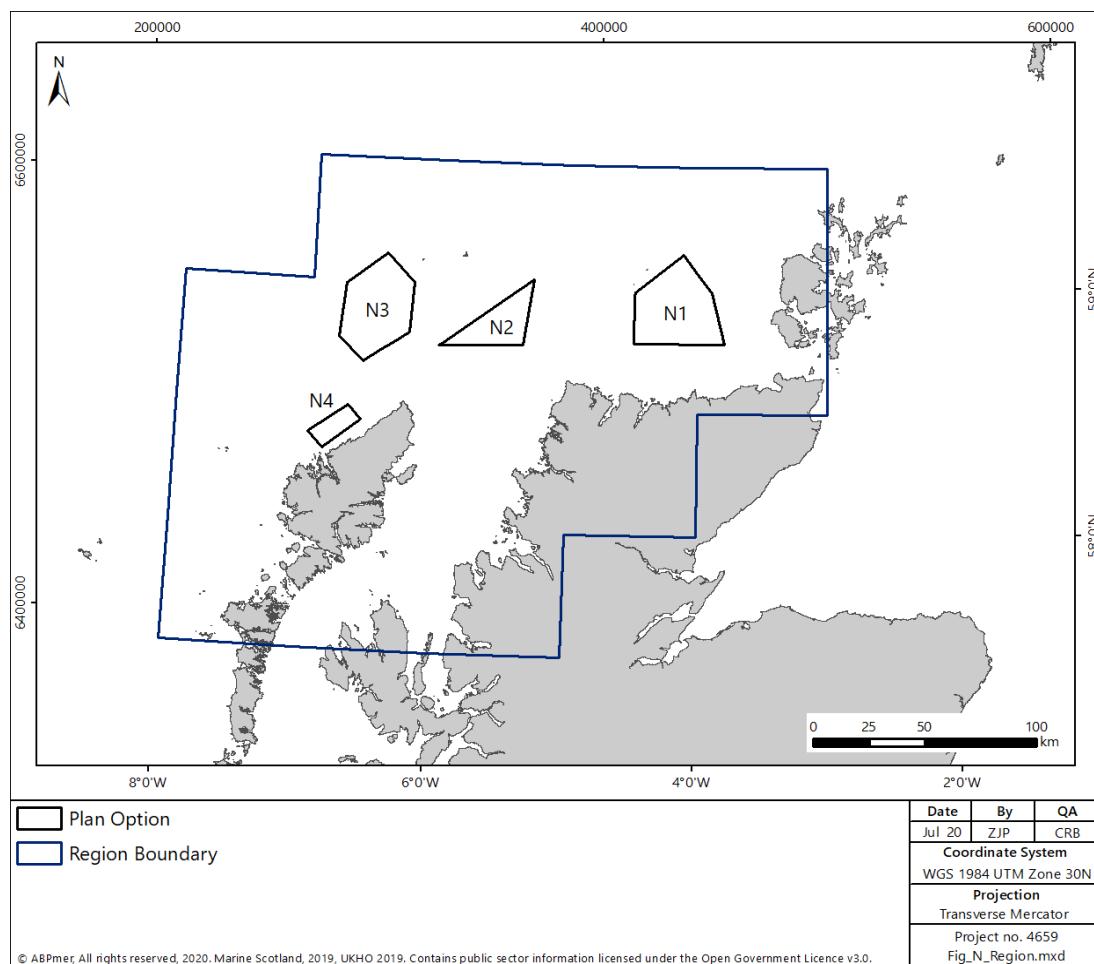


Figure 13 North Region POs

Development across multiple POs in this region will require careful consideration of cumulative impacts on bird species, particularly focussing on migratory species and flyways, with increased turbine heights, as well as the consideration of collision risk, displacement and barrier effects to seabird populations. Migration pathways for migratory bird species transiting from the UK towards the Faroe Islands and Iceland intersect POs in this region and development within multiple POs could result in cumulative barrier effects, increased collision risk and increased energetic requirements for these birds.

Concurrent construction activities in this region could result in significant cumulative impacts on marine mammals, which would need to be considered and mitigated at a project and regional level.

Diadromous fish, particularly Atlantic Salmon, are likely to be present within the POs in this region. Although the exact location of migration routes or connectivity to specific rivers is not known, mitigation at the project-level may be required to avoid potential negative impacts.

In addition, if development were undertaken at both POs N3 and N4 there may be cumulative visual, seascape and landscape impacts (due to the proximity of these POs to the coastline and their ability to be seen from the same single viewpoints). Navigational safety should also be considered at a project level if development at both POs progresses. These impacts would therefore need further consideration and mitigation at a project-level.

4.3.1 N1

N1 covers a total area of 1163 km² and offers a potential maximum realistic development scenario of up to 2 GW of generating capacity (equating to 34 % of the total area of the PO). The water depth across the PO varies, with areas of shallow water (< 60 m) and areas of deeper (>60 m) water dispersed across the PO.

The SEIA identifies potential impacts on the commercial shipping sector, which could be reduced or offset via project-level mitigation measures or spatial planning within the PO. There is also the potential for significant cost impacts associated with the loss of fishing grounds in N1. Key gear types in N1 are demersal trawls and creels. It is recognised that of these, the creels may not be displaced in the medium to long term.

The SEA identifies potential effects on bird populations including connectivity with nearby SPAs, such as Sule Skerry and Sule Stack SPA, as well as Orkney SPAs. As such, additional research, spatial planning and consideration of further mitigation at a project level may be required within N1 to avoid areas of key usage for bird species or reduce potential impacts.

4.3.2 N2

N2 covers a total area of 561 km² and offers a potential maximum realistic development of up to 2 GW of generating capacity (equating to 71% of the total area of the PO). The water depth across the PO is generally deeper (60-100 m) water with some areas of deep water (> 100 m) in the west of the PO.

There is some potential for significant cost impacts associated with the loss of fishing grounds in N2, particularly in relation to demersal trawlers, which are likely to be excluded from the footprint of any offshore wind development.

Consultation would be required with the MOD regarding potential offshore safeguarding concerns due to Royal Navy activities within N2.

NatureScot highlight the potentially significant visual, seascape and landscape impacts resulting from development in this PO.³⁵ This is primarily due to the proximity to Cape Wrath and NatureScot suggest development should be focussed in the north west of the PO.

4.3.3 N3

N3 covers a total area of 1106 km² and offers a potential maximum realistic development scenario of up to 2 GW of generating capacity (equating to 36% of the total area of the PO). The water depth across the PO is generally deep (> 100 m) with some small areas of shallower water (< 60 m) in the northeast of the PO.

The SEIA identifies potential significant cost impacts associated with the loss of fishing grounds in N3. Key gear types in N3 are midwater and demersal trawls which are likely to be excluded from the footprint of any offshore wind development.

Consultation would be required with the MOD regarding potential radar interference from turbines in N3.

The SEA identifies potential risks associated with bird species foraging in the northeast of the PO from the North Rona and Sula Sgeir SPA and migrating bird species transiting towards the Faroe Islands and Iceland. To address these risks at a project level, appropriate pre-consent bird surveys, mitigation measure development and post-construction monitoring would be required.

4.3.4 N4

N4 covers a total area of 200 km² and offers a potential maximum realistic development scenario of up to 1 GW of generating capacity (equating to 100% of the total area of the PO). The water depth across the PO is shallow (< 60 m) throughout, with a small area of 60-100 m water depth in the southwest of the PO.

³⁵ Available at <https://www.nature.scot/sites/default/files/2020-04/Sectoral%20Plan%20Consultation%20-%20SNH%20Landscape%20and%20Visual%20Impact%20Assessment%20and%20Design%20Guidance.pdf> (Last accessed: 07/08/20)

The SEIA identifies potential cost impacts to recreational angling, tourism and commercial fishing sectors. The presence of N4 close inshore from the recommended deep water route around the Hebrides on a lee shore may also affect navigational safety and these impacts would need to be considered and mitigated at a project-level.

Impacts to the tourism sector are associated with potential visual, landscape and seascape issues, which similarly is the most significant risk identified within the SEA. N4 is located in very inshore waters, and therefore seascape, landscape and visual impacts will occur. NatureScot advise that a detailed design-led approach involving the local stakeholders should be utilised if a project is identified here. Consideration of these impacts would require early consultation with local communities and stakeholders. Potential mitigation measures may be limited, however, consideration could be given to wind farm design and turbine selection, (i.e. the selection of smaller turbines to reduce visual impact).

Further to the potential landscape, seascape and visual impacts, the SEA identifies potential noise impacts to local populations, due to the PO's close proximity to land, which will need management through early and comprehensive consultation with local stakeholders and communities.

4.3.5 Key actions for the North region

In order to progress development in the North region, the following (non-exhaustive) key steps are likely to form part of the development process. It is recognised that some steps will be more applicable to specific POs within the North region:

- consultation with local stakeholders regarding landscape and seascape concerns; and potential noise impacts on local populations;
- pre- and post-consent, and post-construction, bird monitoring;
- consultation with the MOD;
- consultation with the fishing community;
- consideration of potential impacts to diadromous fish; and
- consultation with the Maritime and Coastguard Agency.

4.4 North East Region

The North East region encompasses seven PO areas (NE1, NE2, NE3, NE4, NE6, NE7 and NE8) (see Figure 14). Please note that DPO NE5 did not progress as a final PO and has been removed. The key risk factors to development within the North East region are:

- risks to bird species, including collision risk and displacement, as well as potential impacts to birds on migratory pathways;
- potential impacts on commercial fishing;
- potential impacts on marine mammal receptors;
- potential impacts on migratory fish species;
- potential impacts on benthic habitat and species; and
- potential cost impacts and associated navigational risk from diverting key commercial shipping routes;

Within the North East region, there is already significant offshore wind development, principally in the Moray Firth, adjacent to PO NE4, including;

- Beatrice offshore wind farm (588 MW, operational);
- Moray East offshore wind farm (950 MW, in construction); and
- Moray West offshore wind farm (850 MW, consented).

Additionally, there are current marine renewable energy developments in the Orkney and Shetland Islands (including wave and tidal devices deployed as part of EMEC and the Nova Innovation Shetland Tidal Array) which would need to be considered in any in-combination assessments.

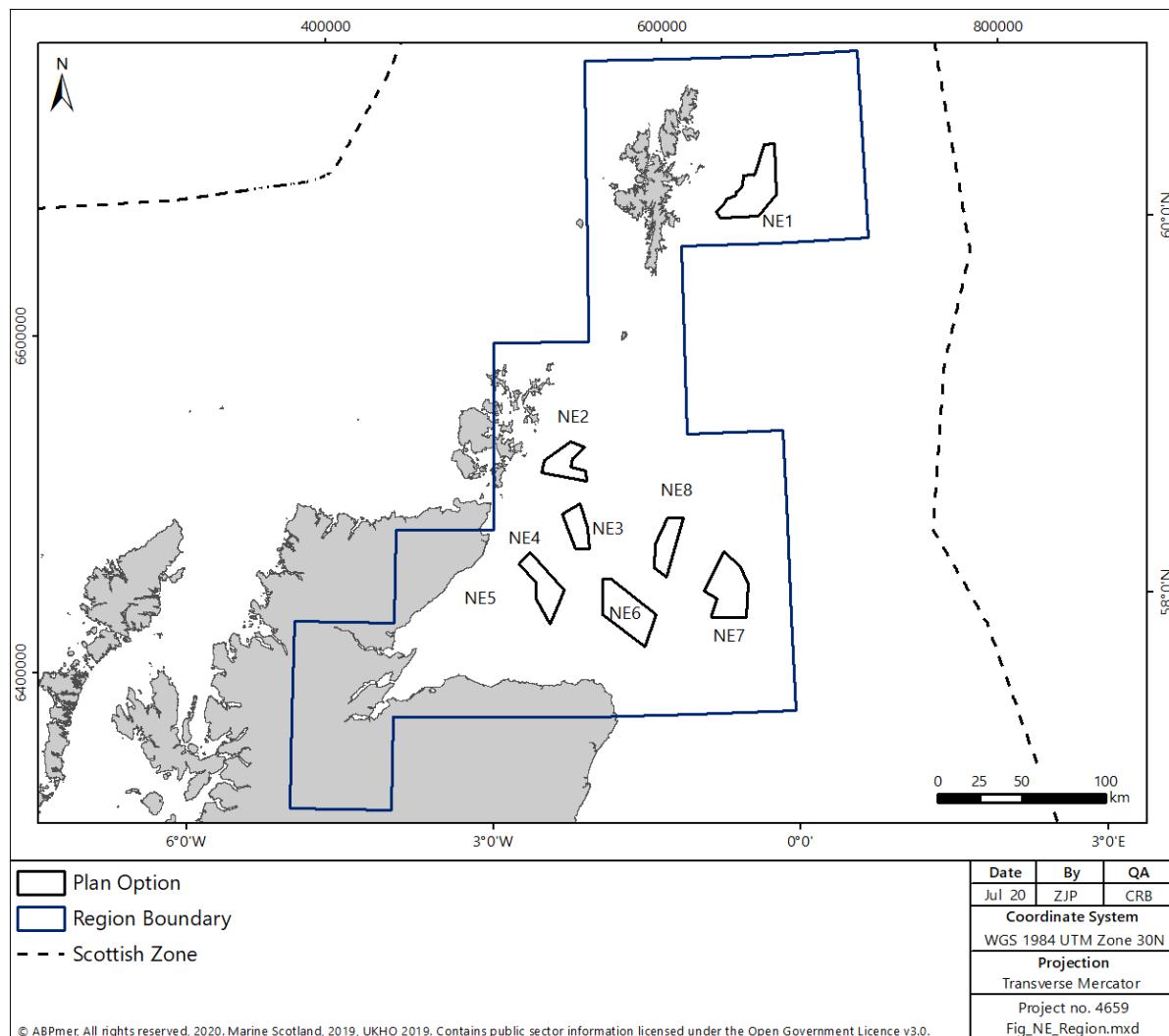


Figure 14 North East Region POs

Within the North East region, development across multiple POs could result in significant cumulative collision risk and displacement impacts on key seabird species. These concerns are detailed in full in the HRA Report and the Appropriate Assessment. POs NE2, NE3, NE4, and NE6 are therefore classed as being subject to 'higher levels of ornithological constraint' and require that sufficient scientific evidence, which reduces the level of risk to an acceptable level, is made available. This may, therefore, delay the progression of licence and consent determinations within these POs, until such time that further evidence, research and knowledge around mitigation is available to support decision-making in this region. This is discussed in greater detail at section 5.3.

Potentially significant effects on marine mammals could occur during construction activities and further consideration of these impacts would be required at a project-level. In addition, potential cumulative impacts on navigation would need to be considered as a result of development of large areas within the POs and these impacts would need to be considered and addressed at a project-level.

There are some areas of overlap with existing oil and gas infrastructure, licensed blocks for oil and gas production and round awards for oil and gas exploration.

Further, some POs are located inshore of existing and potential oil and gas production areas. There are some areas of overlap with areas awarded under the 29th and 30th oil and gas leasing rounds, however, it is anticipated that activity will have lapsed or concluded prior to offshore wind development commencing.

Where there are areas of spatial overlap, it is assumed that renewable energy development will not be permitted within a given corridor either side of the pipeline/platform (to facilitate maintenance activity and access to said structures, until such time as any structure(s) are decommissioned). It is also assumed that the cost of any required cable/pipeline crossings with existing infrastructure will be borne by the offshore wind developer.

Further consultation would be required with the oil and gas industry regarding potential interactions between these two sectors.

Projects considering possible connections to oil and gas platforms or infrastructure should also note section 2.5 regarding the possibility of a future leasing round to support oil and gas decarbonisation. Although any such future leasing round may specifically target projects exploring oil and gas decarbonisation, projects progressing under this cycle of ScotWind leasing may also utilise these types of connections, as long as the project site is located within a PO.

Diadromous fish, particularly Atlantic Salmon, are likely to be present within the PO in this region. Although the exact location of migration routes or connectivity to specific rivers is not known, mitigation at the project-level may be required to avoid potential negative impacts.

The POs in the North East overlap with widespread commercial fishing effort. Whilst effort has been taken to avoid overlap, there remains the potential for negative impact through the loss of fishing grounds in this region. This is due, in part, to the number of PO in this region and the level of commercial fishing activity in the north east of Scotland. The Scottish Fishermen's Federation ("SFF") and the Scottish White Fish Producer's Association ("SWFPA") both responded to the consultation on the draft Plan and suggested areas within a number of the DPOs which could facilitate co-existence between both sectors. Developers bringing projects forward inside these POs should consider these suggestions when formulating their proposals and early and sustained consultation with the commercial fishing sector is recommended.

Following consideration of the feedback received during the consultation period, it should be noted that DPO NE5 has not been taken forward for inclusion as a PO due to the potential cumulative impacts on commercial fishing in this region. Further information regarding its removal is outlined above at section 2.2 and in the PAS.

4.4.1 NE1

NE1 covers a total area of 751 km² and offers a potential maximum realistic development scenario of up to 2 GW of generating capacity (equating to 53% of the total area of the DPO). The water depth across the PO is deep throughout (> 100 m).

The SEIA identifies some potential for significant cost impacts associated with the loss of fishing grounds in NE1. Key gear types in NE1 are demersal trawls and mechanical dredges which are likely to be excluded from the footprint of any offshore wind development. Areas within NE1 may be important fish spawning grounds, including for herring, cod and whiting and these risks would need to be addressed by project-level mitigation measures.

Consultation will be required with the MOD regarding potential radar interference from turbines in NE1.

The SEA identifies that NE1 lies adjacent to the Pobie Bank SAC, designated for benthic habitats, therefore, some examples of these benthic features could be present with the PO. Benthic survey and spatial planning within the PO will be required to mitigate any potential impacts, including potential impacts associated with sediment smothering or increased scour associated with turbine foundations.

Whilst NE1 is fully located outwith the territorial waters surrounding Shetland (12 NM), regular, large vessels landing at Sullom Voe regularly use the area to anchor and wait for access. This project level mitigation may be required to avoid unnecessary impacts resulting from the potential overlap.

4.4.2 NE2

NE2 covers a total area of 345 km² and offers a potential maximum realistic development scenario of up to 1 GW of generating capacity (equating to 58% of the total area of the PO). The water depth across the PO is between 60 m and 100 m throughout.

Key potential cost impacts arising from development in NE2 are to commercial shipping and power interconnector sectors (due to diversion of routes), which could be mitigated at a project-level.

The SEA and HRA identify that NE2 may be important as a foraging area for kittiwake and concerns regarding potential in-combination impacts has resulted in this PO as being classified as being 'subject to higher levels of ornithological constraint', see further, section 5.3.

There is potential for important fish spawning grounds, including those for herring, to be located within NE2. Risks to spawning fish (mainly related to piling noise) would need to be addressed via project-level mitigation.

4.4.3 NE3

NE3 covers a total area of 265 km² with a potential maximum realistic development of up to 1 GW of generating capacity (equating to 76% of the total area of the PO). The water depth across the PO is between 60 m and 100 m throughout.

The SEIA identifies costs to commercial shipping and fishing sectors, both of which are low when considered over the lifetime of a development and would need to be

considered at a project-level. There is also potential, however, for development in NE3 to have consequences for navigational safety, due to proximity to key shipping routes, which will require consideration and management in project level assessment.

Consultation would be required with the MOD regarding potential radar interference from turbines in NE3.

The SEA and HRA identify that NE3 may be important as a foraging area for seabirds, and concerns regarding potential in-combination impacts has resulted in this DPO as being classified as being ‘subject to higher levels of ornithological constraint’. See further, section 5.3.

There is potential for areas within NE3 to be important fish spawning grounds, including for herring. Risks to spawning fish would need to be addressed by project-level mitigation.

4.4.4 NE4

NE4 covers a total area of 440 km² and offers a potential maximum realistic development of up to 1 GW of generating capacity (equating to 45% of the total area of the PO). The water depth across the PO is predominantly shallow (<60 m) throughout, with small areas of deeper water (60-100 m) in the south of the PO.

The SEIA identifies generally lower socio-economic costs arising from potential offshore wind development within NE4. The only identified costs are to commercial shipping and fishing sectors, both of which are low when considered over the lifetime of a development. There is also potential for development in NE4 to have significant consequences for navigational safety, due to a large overlap with the key shipping route around the Scottish coastline. This will require significant consideration and management in project-level assessment, as these effects are unlikely to be avoidable, due to the high density of traffic throughout the PO.

Consultation will be required with the MOD regarding potential radar interference from turbines in NE4.

Similar to NE2 above, the SEA and HRA identify that NE4 is likely to be important as a foraging area for seabirds, including kittiwake from multiple SPA. As discussed above, concerns regarding potential in-combination impacts on key seabird species has resulted in this PO as being classified as being ‘subject to higher levels of ornithological constraint’.

4.4.5 NE6

NE6 covers a total area of 669 km² and offers potential maximum realistic development scenario of up to 2 GW of generating capacity (equating to 57% of the total area of the PO). The water depth across the PO is mostly 60 m to 100 m throughout with some areas of deeper water (> 100 m) in the south and west of the PO.

The SEIA identifies potential socio-economic impacts on the commercial shipping sector, including lifeline ferry services. There is a high density of shipping activity in this area, therefore, potential for mitigating costs may be limited. Similarly, the SEA identifies potential risks to navigational safety, arising from the potential concentration of traffic into fewer, narrower routes either around, or within the PO. These impacts would need to be considered at a project-level.

Consultation would be required with the MOD regarding potential radar interference from turbines in NE6.

The SEA and HRA identify that NE6 may be important as a foraging area for seabirds, including kittiwake, and concerns regarding potential in-combination impacts has resulted in this PO as being classified as being ‘subject to higher levels of ornithological constraint’ (see further, section 5.3).

There is potential for areas within NE6 to be important fish spawning grounds, including for herring and sandeel. Risks to spawning fish would need to be considered at a project-level.

4.4.6 NE7

NE7 covers a total area of 684 km² and offers a potential maximum realistic development scenario of up to 3 GW of generating capacity (equating to 88% of the total area of the PO). The water depth across the PO is generally deep throughout (> 100 m) with some areas of shallower depth (60 – 100 m).

The SEIA identifies potential for significant socio-economic cost impacts associated with the loss of fishing grounds arising from potential offshore wind farm development in NE7. Key gear types in NE7 are pelagic trawls and demersal trawls, which are likely to be excluded from the footprint of any offshore wind development.

Consultation would be required with the MOD regarding potential radar interference from turbines in NE7.

The SEA identifies that NE7 has the potential to affect bird species, although the distance offshore reduces the potential risk to birds foraging in this area. There may, however, also be species which transit through these offshore areas as part of migration routes, and therefore project-level survey and consideration of potential mitigation measures would be required.

4.4.7 NE8

NE8 covers a total area of 339 km² and offers a potential maximum realistic development scenario of up to 1 GW of generating capacity (equating to 59% of the total area of the PO). The water depth across the PO is generally deeper throughout with a combination of areas of 60 m to 100 m and areas greater than 100 m water depth.

The SEIA identifies potential for significant socio-economic cost impacts associated with the loss of fishing grounds in NE8, which is the most intensively fished PO under consideration. Key gear types in NE8 are midwater trawls which are likely to be excluded from the footprint of any offshore wind development.

Consultation would be required with the MOD regarding potential radar interference from turbines in NE8.

The SEA identifies that NE8 has the potential to affect bird species, although the distance offshore reduces the potential risk to foraging areas. There may, however, be species which transit through these offshore areas as part of migration routes, and therefore project-level survey and consideration of potential mitigation will be required.

4.4.8 Key actions for the North East region

As discussed further in section 5.3.1, POs NE2, NE3, NE4, and NE6 have been classed as being 'subject to high levels of ornithological constraint'. It is proposed, therefore, that development will only be able to progress at these POs where sufficient scientific evidence can be provided to reduce the risk to an acceptable level (unless it can be determined that there are imperative reasons of overriding public interest that require development to proceed).

In addition to the requirements regarding NE2, NE3, NE4 and NE6, and in order to progress development in the North East region, the following (non-exhaustive) key steps are likely to form part of the development process. It is recognised that some steps will be more applicable to specific POs within the NE region:

- consultation with local stakeholders regarding landscape and seascape;
- pre- and post-consent, and post-construction, bird monitoring;
- consultation with the fishing community;
- benthic survey and subsequent spatial planning to avoid any key habitats identified;
- consultation with the fishing community;
- consultation with the MOD;
- consultation with the oil and gas industry; and
- consultation with the Maritime and Coastguard Agency.

4.5 East region

The East region encompasses three POs (E1, E2 and E3) (as shown in Figure 15). The key risk factors to development within the East region are:

- risks to bird species, including collision risk and displacement, as well as potential impacts to birds on migratory pathways
- potential impacts on marine mammal receptors;
- potential impacts on benthic habitat and species;
- potential impacts on migratory fish species;
- potential cost impacts and associated navigational risk from diverting key commercial shipping routes; and
- potential impacts on commercial fishing.

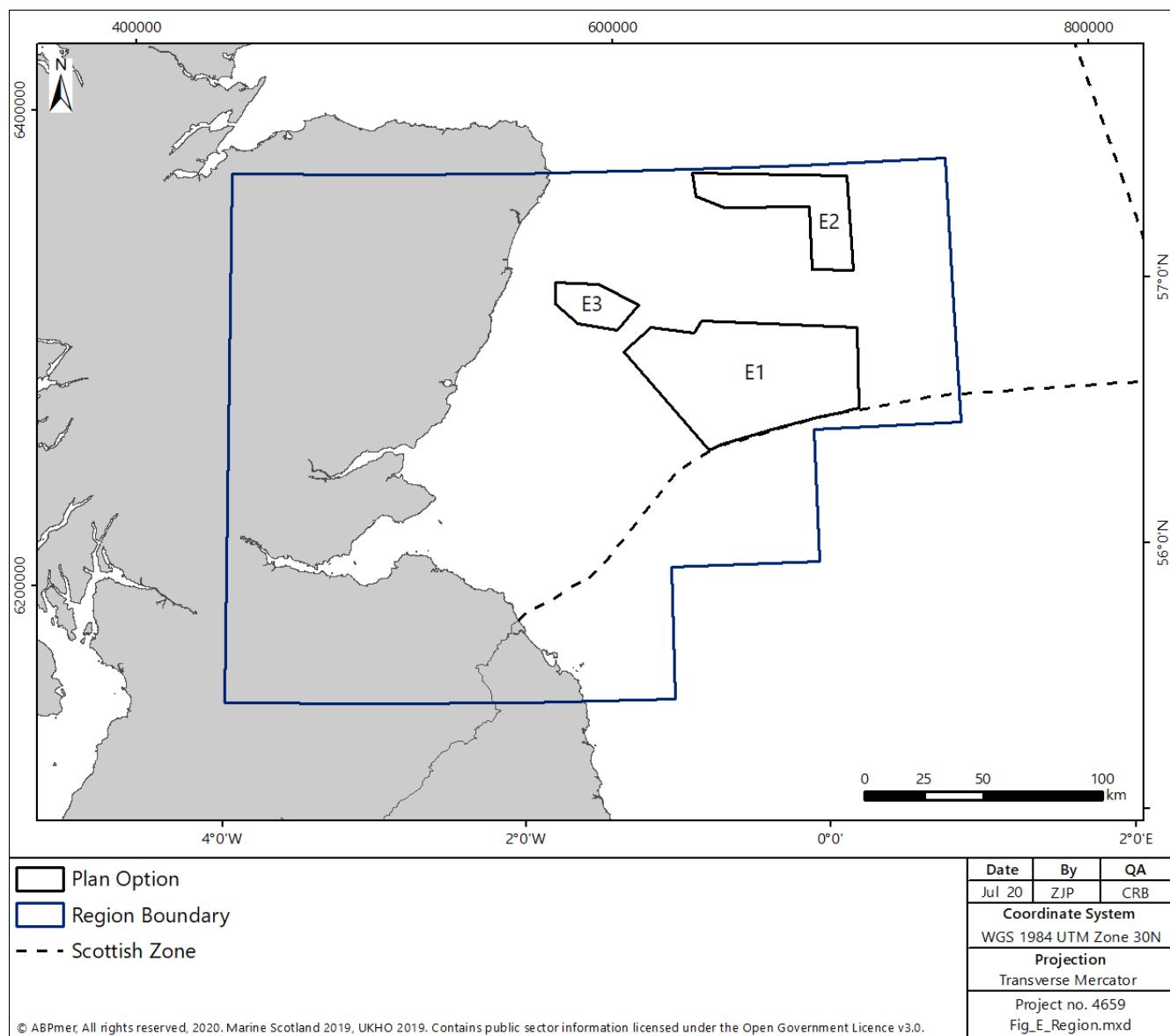


Figure 15 East Region POs

Within the East region, there is already significant offshore wind development, inshore of the proposed POs, including the following operational and consented projects:

- Forthwind Offshore Windfarm (29.9 MW consented);
- Levenmouth Demonstration Turbine (7 MW operational);
- European Offshore Wind Deployment Centre (93 MW operational);
- Inch Cape (700 MW consented);
- Kincardine Offshore Windfarm (50 MW consented, partially operational (1 turbine));
- Neart na Gaoithe (450 MW consented);
- Hywind Scotland Pilot Park (30 MW operational); and
- Seagreen Alpha and Bravo (1050 MW consented).

In addition, Seagreen Berwick Bank (2300 MW) and Marr Bank (between 900 and 1850 MW)³⁶ (previously known as Seagreen Charlie and Delta/Phases 2 and 3) were previously scoped and these projects would need to be considered in any in-combination assessment.

Within the East region a key pathway of concern relates to effects on bird populations, due to potential in-combination impacts resulting from collision risk and displacement for key seabird species. These concerns are detailed in full in the HRA report and PO E3 is therefore classed as being subject to 'high levels of ornithological constraint' (as set out at section 5.3.1). It is proposed, therefore, that development will only be able to progress at POs NE2, NE3, NE4, NE6 and E3 where sufficient scientific evidence can be provided to reduce the risk to an acceptable level (unless it can be determined that there are imperative reasons of overriding public interest that require development to proceed).

Diadromous fish, particularly Atlantic Salmon, are likely to be present within the PO in this region. Although the exact location of migration routes or connectivity to specific rivers is not known, mitigation at the project-level may be required to avoid potential negative impacts.

In addition, the HRA report identifies that there are concerns regarding the scale of the potential in-combination impacts on key seabird species from development at POs E1 and E2. Therefore, further regional survey effort and discussion will be required (as outlined in section 5.3.2) before development can progress in these POs.

Potentially significant effects on marine mammals could occur during construction activities, and further consideration of potential impacts and mitigation measures will be required at a project-level.

As per the North East region, there is the potential for some overlap and/or interaction between the POs and areas licensed and/or leased for oil and gas

³⁶ Available at: <https://www.sserenewables.com/offshore-wind/projects/berwick-bank-and-marr-bank-formerly-seagreen-2-3/> (Last accessed: 07/08/20)

production or exploration. Further consultation would be required with the oil and gas industry regarding potential interactions.

4.5.1 E1

E1 covers a total area of 3744 km² and offers a potential maximum realistic development scenario of up to 3 GW of generating capacity (equating to 16% of the total area of the PO). The water depth across the PO is between 60 m and 100 m throughout.

The SEIA identifies minor socio-economic cost impacts arising from potential development in E1 to commercial shipping, fishing and power interconnector sectors, which would need to be considered at a project-level.

Consultation would be required with the MOD regarding potential radar interference from turbines in E1.

The SEA and HRA identifies that E1 may be important as a foraging area for kittiwake and razorbill and therefore, due to the concerns regarding potential in-combination impacts, further regional survey effort and consultation would be required.

There is potential for areas within E1 to be important fish spawning grounds, including for herring, cod, whiting, plaice and sandeel. Risks to spawning fish would need to be considered and mitigated at a project-level.

4.5.2 E2

E2 covers a total area of 1287 km² and offers a potential maximum realistic development of up to 2 GW of generating capacity (equating to 31% of the total area of the PO). The water depth across the PO is between 60 m and 100 m throughout.

The SEIA identifies minor socio-economic cost impacts arising from potential development in E2 to commercial shipping and fishing sectors.

Consultation would be required with the MOD regarding potential radar interference from turbines in E2.

The SEA and HRA identifies that E2 may be important as a foraging area for kittiwake and razorbill and therefore, due to the concerns regarding potential in-combination impacts, further regional survey effort and consultation would be required.

There is potential for areas within E2 to be important fish spawning grounds, including for herring, cod, whiting, plaice and sandeel. Risks to spawning fish would need to be considered and mitigated at a project-level.

4.5.3 E3

E3 covers a total area of 474 km² and offers a potential maximum realistic development of up to 1 GW of generating capacity (equating to 42% of the total area of the PO). The water depth across the PO varies, incorporating area of shallow water (0-60 m), and deeper water (both 60 – 100 m and > 100 m).

The SEIA identifies minor socio-economic cost impacts for the commercial shipping, fishing and power interconnector sectors, which would need to be considered and mitigated at a project-level.

Consultation would be required with the MOD regarding potential radar interference from turbines in E3.

The SEA and HRA identify that E3 may be important as a foraging area for kittiwake from designated SPA sites. As discussed above, concerns regarding potential in-combination impacts on key seabird species has resulted in this PO as being classified as being subject to ‘higher levels of ornithological constraint’.

There is potential for areas within E3 to be important fish spawning grounds, including for herring, cod, whiting, plaice and sandeel. Risks to spawning fish would need to be mitigated at a project-level.

4.5.4 Key actions for the East region

As discussed below in section 5.3.1, E3 has been classed as a PO subject to ‘high levels of ornithological constraint’. It is proposed, therefore, that development will only be able to progress at PO E3 where sufficient scientific evidence can be provided to reduce the risk to an acceptable level (unless it can be determined that there are imperative reasons of overriding public interest that require development to proceed). As outlined at section 5.3.2, POs E1 and E2 would require the completion of further regional-level survey effort before development can proceed.

In addition to the requirements above and in order to progress development in the East region, the following (non-exhaustive) key steps are likely to form part of the development process. It is recognised that some steps will be more applicable to specific POs within the region:

- consultation with local stakeholders regarding landscape and seascape concerns;
- completion of regional-level ornithological surveys in POs E1 and E2;
- pre- and post-consent, and post-construction, bird monitoring;
- benthic survey and subsequent spatial planning to avoid any key habitats identified;
- consultation with the commercial fishing community;
- consultation with the oil and gas industry; and
- consultation with the Maritime and Coastguard Agency.

4.6 South West region

Within the draft Plan, one DPO was identified in the South West region (SW1), located in the outer Solway Firth

Previous proposals for development within this region (in 2011 and 2013) were subject to strong and sustained opposition as a result of potential negative seascape, landscape and visual impacts, as well as negative socio-economic impacts relating to commercial fishing, tourism and recreation. This led Scottish Ministers to conclude that the Solway Firth and Wigtown Bay sites included in the 2011 Plan were unsuitable for the development of offshore wind and should not be progressed at that time.

These issues regarding socio-economic impact and seascape, landscape and visual impacts were reiterated by local communities and stakeholders during the consultation on the draft Plan, with over 300 respondents strongly opposing the inclusion of a DPO in this region. Concerns regarding the potential level of socio-economic benefit which would, in fact, accrue to the local community as a result of any development, due to the nature of the local supply chain and ports, were also raised. Respondents raised concerns regarding potential negative impacts on migratory bird species and cumulative impacts on sensitive coastal, landscape and visual receptors as a result of existing onshore wind farms and the Robin Rigg development. The SA noted many of these issues and additional key risk factors, as described in the draft Plan.

The SEIA specifically identified that retention of spend in the South West region would be likely to be limited due to supply chain capacity, although some growth has been anticipated by the end of the assessment timeframe. Positive economic impacts would be expected to be concentrated in Ayr, due to the existing facilities, although impacts on fish landings would also be expected to be greatest at Ayr (the SEIA considered that the overall effects in terms of loss of jobs would be low). Negative impacts from changes to seascapes or displacement of tourism and recreational activities, however, would be more likely to occur along the southern coast of Dumfries and Galloway, so these communities could perceive that they may incur negative impacts without, necessarily, experiencing any direct economic positive effects from the level of spend.

NatureScot has provided detailed Supplementary Advice, in addition to its consultation response, regarding potential seascape, landscape and visual impacts of the DPOs and associated design guidance.³⁷ In its Supplementary Advice, it stated that, “we advise that any scale of turbine will introduce significant cumulative day and night-time effects”, due to the small scale of the site and its proximity to the coastline. NatureScot highlights that a project-level design solution and site specific mitigation for development within this DPO would have to be considered and assessed.

³⁷ Available at: <https://www.nature.scot/sites/default/files/2020-04/Sectoral%20Plan%20Consultation%20-%20SNH%20Landscape%20and%20Visual%20Impact%20Assessment%20and%20Design%20Guidance.pdf>

Following consideration of the assessment contained within the SA and the views submitted during consultation, Scottish Ministers have chosen not to progress SW1 as a PO at this time. In the event that future work is undertaken to address the estimated negative impacts (for example, through mitigation measures or planned securing of satisfactory benefits), this could support future discussion regarding the introduction of POs in the South West region within future iterations of the Plan.

Such future information could include, for example, detailed supply chain and socio-economic analysis and local engagement to explore issues and identify possible solutions. Any such measures would need to be aimed at addressing the significant adverse impacts of the development, but could also include the identification of potential socio-economic benefit for local communities and the regional economy to mitigate potential negative impacts relating to the fishing, tourism and recreation sectors, via scenario-mapping exercises or similar.

The iterative plan review process outlines the circumstances in which new information or data may be submitted and assessed to help facilitate updates or reviews of the Plan (see section 6). As with other evidence or information submitted, in the event that efforts are made to address these impacts, taking account of the specific issues relating to SW1 and the South West region (for example, a comprehensive assessment and demonstration of deliverable positive social and economic benefits, supported by evidence of significant engagement with the relevant sectors and including statements regarding potential socio-economic benefits relied upon which are suitably evidenced), then Scottish Ministers may consider whether constraints have been satisfactorily addressed to allow future consideration of offshore wind development in this region. This could be addressed through the scheduled review process (e.g. year 2) or earlier if relevant evidence arises. Any change of this nature to the Plan would require further assessment and consultation to be undertaken, before approval by the Scottish Ministers.

5. Plan adoption, implementation and Action Plan

Implementation of the Plan will require the successful integration of the following measures;

- Key considerations;
- Implementation of identified Plan-level mitigation measures; and
- The delivery of key actions.

5.1 Key considerations

These issues will need to be considered as the Plan progresses:

5.1.1 Community and stakeholder engagement

The successful implementation of the Plan will require the Scottish Government to maintain the high level of stakeholder engagement which has been undertaken to date to support the planning process. It is critical that communication with stakeholders continues beyond the adoption of the final Plan. This engagement will not be restricted to the membership of the Technical Advisory Group and Programme Board (which will be formed post-adoption to facilitate the implementation of the Plan (see further, section 5.4)).

At a strategic level, the Scottish Government will undertake further and ongoing engagement with the renewables, commercial fishing, shipping, defence and aviation. Developers will also be expected to engage in these discussions, particularly around issues such as cumulative assessment, socio-economic impacts and commercial fisheries.

Developers will be required to undertake the necessary project-level community and stakeholder engagement. In particular, further engagement with local stakeholders will be required by developers in relation to POs located closer to shore (where seascape, landscape and visual impacts are likely to be of greater concern).

5.1.2 Project level assessment

Proposals for offshore wind development within the POs will still be subject to the standard leasing, licensing and consenting processes and the need for further project-level assessment. The Plan will guide the relevant consenting bodies when making decisions on individual licence and consent applications, but should not be considered as pre-determining those decision-making processes.

This may include Environmental Impact Assessment in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended). Licensing decisions will be taken in accordance with the relevant regulations and the National Marine Plan.³⁸ Further detail on these

³⁸ Marine (Scotland) Act 2010, s. 15

processes are contained in the Licensing and Consenting Manual.³⁹ Project-level assessment will benefit from certainty regarding the type, location and scale of technology to be deployed within a particular PO, which is currently not available at a Plan level. Project-level assessment will identify any appropriate mitigation measures to reduce, avoid or offset any potential adverse effects, or maximise positive effects

Discussions with stakeholders and regulatory bodies will identify the relevant best practice guidance to be adhered to (during all phases of development) and the methodologies and data to be utilised in any impact assessments.

In addition, the HRA identifies the legal requirement for individual projects to undergo project-level HRA as a key mitigation measure (to avoid adverse effects on site integrity). Where likely significant effects on any European site(s) or European marine site(s) cannot be excluded, the competent authority will be required to undertake a project-level Appropriate Assessment.

The outputs of future project-level assessments will be used to support the iterative plan review process for the Plan.

5.1.3 Cumulative and in-combination effects

Further assessment work will be required to identify and address cumulative and in-combination effects of offshore wind developments. For example, issues such as scheduling of work(s) within Scottish waters will need to be carefully monitored and addressed at a project-level. In addition, there is the need to ensure that project-level and strategic-level cumulative and in-combination effects are taken into account as part of project-level assessment and the iterative plan review process.

Developer-led work should contribute to addressing these issues in a suitable and effective manner and the Scottish Marine Energy Research (“ScotMER”) programme is also considering potential research work to address these issues.

5.1.4 Review – monitoring and research

As the deployment of offshore wind energy expands, further survey and monitoring data and research will become available, which will be used to inform industry best practice and standards, including assessment methodologies.

Developers are required to gather and submit monitoring data to the licensing authority as part of their marine licence and/or section 36 consent conditions. The structure and process for gathering such data is directed by the licensing authority, in consultation with the SNCBs and/or via the relevant Regional Advisory Group (“RAG”) and is also linked to the ScotMER programme. It is anticipated that these research and monitoring outputs will inform the iterative plan review process and any future assessment(s).

³⁹ Scottish Government, *Offshore wind, wave and tidal energy applications: consenting and licensing manual* (October 2018). Available at: <https://www.gov.scot/publications/marine-scotland-consenting-licensing-manual-offshore-wind-wave-tidal-energy-applications/>

5.2 Plan level mitigation measures

The application of appropriate mitigation measures is key to the sustainable development of offshore wind. As outlined in section 4 above, development within the identified POs may still result in potential negative environmental, social and economic impacts. The SA, therefore, recommends that mitigation measures are implemented to reduce or avoid these potential impacts. This includes requirement for further project-level assessment and application of project-level mitigation measures (see further, Section 4.7 of the SA), as well as the implementation of plan-level mitigation measures, which are applicable across all, or some, POs (dependent on the nature and scale of the impacts).

At a plan level, there are a number of measures which can be implemented to either reduce the effect associated with development under the Plan or offset any significant effects. The following plan level mitigation measures have been applied:

- Limiting the total scale of operational development under the Plan to the assumed physical footprint for 10GW of generation as assessed in this Plan; Limiting the total scale of operational development within each PO to the maximum realistic development scenario set out in the SA and above;
- Requiring spatial planning within individual POs, to reduce so far as is reasonably practicable effects on environmental receptors;
- The application of iterative plan review to ensure the Plan remains current and informed by up-to-date scientific and stakeholder understanding and knowledge;
- Requiring project-level EIA and HRA; and
- Collaboration between governmental bodies, Non-Governmental Organisations (“NGOs”) and industry on research issues to determine a consistent and comprehensive evidence baseline.

The HRA concludes that the Plan will not result in an adverse effect on the site integrity of any European site(s) or European marine site(s), provided that further project-level HRA and Appropriate Assessment is undertaken and the mitigation measures below are adhered to.

It should be noted that the regional scenarios presented in the SA have been used to provide an indication of potential impacts of all phases of development at a regional level, however, these regional scenarios will not be used to constrain potential levels of operational development within POs or at a regional scale.

5.3 Ornithology-specific plan-level mitigation measures

There are two different forms of ornithology-specific plan-level mitigation measures included within this Plan. These are applied in order to avoid any potential adverse effects on the site integrity of any European site(s) and/or European offshore marine site(s), in line with the requirements of the Habitats Directive. These measures apply to Plan Options located in the East and North East regions, as shown in Figure 16, as a result of the currently modelled level of negative cumulative impact on further offshore wind development on key seabird species. The iterative plan review process, as outlined in this document, will consider whether there is sufficient

evidence to remove or amend these mitigation measures, on the basis of emerging scientific evidence and understanding, and in consultation with relevant stakeholders.

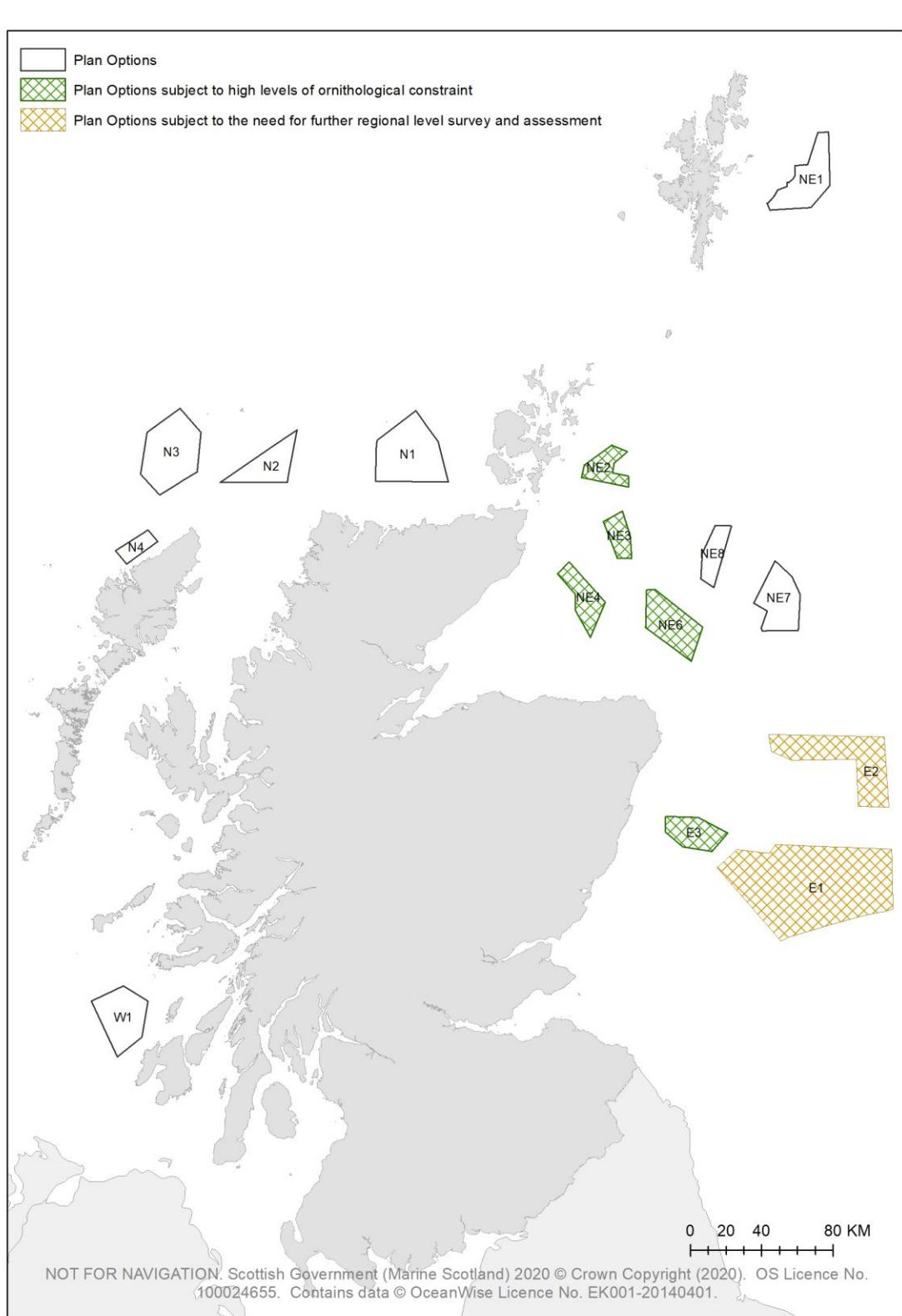


Figure 16 Plan Options subject to plan-level ornithological mitigation measures

5.3.1 Plan Options subject to high levels of ornithological constraint (E3, NE2, NE3, NE4 and NE6)

The HRA has identified that development within POs NE2, NE3, NE4, NE6 and E3 (as shown in green in Figure 16) will, or could, result in an adverse effect on site integrity of European site(s) and/or European offshore marine site(s), due to the potential in-combination impacts on seabird qualifying interests from these sites.

The HRA report concludes that development should not proceed at these POs, “until such time that enough evidence on the environmental capacity for seabirds exists to reduce the risk to an acceptable level.” These POs have therefore been classified as being subject to ‘high levels of ornithological constraint’.

Development, therefore, within Plan Options E3, NE2, NE3, NE4 and NE6 can only progress where sufficient scientific evidence can be provided to reduce the risk to an acceptable level (unless it can be determined that there are imperative reasons of overriding public interest that require development to proceed). This scientific evidence would thereby facilitate either;

- a) Revision to the Plan (via the iterative plan review process) which removes the application of this mitigation measure at a Plan level; or
- b) The granting of a licence or consent for the project, where it can be concluded by the competent authority that there would be no adverse effect on the integrity of any European site(s) or European marine site(s).

The removal of DPO NE5 has had no bearing on the continued application of this mitigation measure in the North East region. Whilst the risk of in-combination effects on black-legged kittiwake may be reduced by the removal of NE5, there remains uncertainty regarding whether this is sufficient to avoid an adverse effect on site integrity if development were to progress in the neighbouring Plan Options. Furthermore, new data⁴⁰, suggests that key bird species may forage at greater distances than originally expected, thereby increasing the likely presence of birds from identified SPAs at the more distant POs (e.g. NE6). The AA addresses this in more detail.⁴¹ This mitigation measure, therefore, continues to apply to neighbouring POs NE2-4, NE6 and E3, in line with the precautionary principle.

It is anticipated that it may take several years to gather and assess the necessary evidence regarding environmental capacity in the East and North East regions with respect to the key bird species. The conclusion of adverse effect on site integrity is based on the currently predicted (modelled) levels of development/activity and impact in these regions. In the event that further evidence demonstrates that these modelled impacts can be revised downwards (i.e. further capacity exists in these regions), it may be possible to conclude at a Plan or project-level that development

⁴⁰ See further, Woodward, I., Thaxter, C.B., Owen, E., and Cook, A.S.C.P., *Desk-based revision of seabird foraging ranges used for HRA screening* (2019). BTO Research Report Number 724.

⁴¹ Scottish Government, *Sectoral Marine Plan Appropriate Assessment* Available at: <https://www.gov.scot/isbn/9781800042414>

could proceed at certain, or all, of these POs, without resulting in an adverse effect on site integrity.

Whilst these mitigation measures are in place, developers may choose to pursue licence and consent applications for projects within these POs, but should note that pursuing potential projects in this region may be subject to high levels of ornithological constraint. It is likely that, given the current predicted levels of cumulative impacts in these regions and until such time as further evidence is provided which demonstrates carrying capacity in these regions, it will not be possible for the competent authority to conclude that development will not result in an adverse effect on the integrity of any European site(s) or European marine site(s). Where this conclusion is reached, no licence or consent can be granted, unless the Scottish Ministers allow a derogation to proceed under Article 6(4) of the European Habitats Directive.⁴²

5.3.2 Plan Options subject to the need for further regional level survey, research and assessment (E1 and E2)

The HRA report advises that, in respect of POs E1 and E2, it cannot currently be concluded with certainty that the cumulative impacts of development on key seabird species would not have an adverse effect on site integrity. This is due to;

- Uncertainty regarding the potential scale of cumulative impacts in this region on seabird species (resulting from collision, displacement and barrier effects); and
- A lack of information regarding seabird densities and behaviours in the offshore region during the non-breeding season.

Further regional-level survey and research work and assessment is therefore required in order to identify and assess the potential impacts of construction, operational and decommissioning activities in POs E1 and E2. This regional survey work should cover the region(s) which will be likely impacted by the development and should not solely be limited to the PO area or the offshore region in which the PO is located.

This regional level survey, research and assessment work is required in addition to site-specific survey effort and analysis work required as part of the standard application and assessment process, as it addresses wider knowledge gaps relevant to the assessment of cumulative impacts and potential impacts during the non-breeding season. This regional level survey, research and assessment work should be carried out by, or on behalf of, the parties who are successful in obtaining Option Agreements for these POs via the ScotWind leasing process.

This regional level survey and assessment activity could incorporate, for example, an initial study to identify foraging areas for key seabird species SPA populations and at-sea densities, using assessment tools, approaches and evidence likely to be

⁴² See further: David Tyldesley and Associates, 2015. Habitats and Regulations Appraisal of Plan. Guidance for Plan-Making Bodies in Scotland Version 3.0, January 2015 SNH Ref 1739.

available soon.⁴³ This study could then be supplemented by regional level survey effort, if required, which could incorporate elements such as aerial surveys or possibly seabird tagging work at key colonies. It is anticipated that the timeframes associated with this work will be less than those associated with the reconsideration of environmental carrying capacity outlined for POs NE2, NE3, NE4, NE6 and E3 above (as outlined above at 5.3.1).

Any developer which secures an Option Agreement for POs E1 and/or E2 should discuss and establish the parameters of the required survey work and the assessment of survey outputs with the Ornithology Working Group (as detailed in section 6.2). Marine Scotland will then provide direction as to the scope and format of the survey, research and assessment work and how the outputs should be provided. This process is outlined in Figure 17.

Developers may choose to pursue licence and consent applications for projects within these POs without completing this work. However, it should be noted that, given the level of scientific uncertainty regarding the level of potential cumulative impacts on key seabird species in this region, this runs the risk that the competent authority would be unable to conclude that development would not result in an adverse effect on the integrity of any European site(s) or European marine site(s). Where this conclusion is reached, no licence or consent may be granted, unless the Scottish Ministers allow a derogation to proceed under Article 6(4) of the European Habitats Directive.

5.3.3 Routes to consenting

Whilst potential applicants may choose to pursue licence and consent applications for POs E3, NE2, NE3, NE4 and NE6, before the removal of the mitigation measure outlined above, it should be noted that, due to the uncertainty regarding the level of potential impacts, the competent authority may be unable to conclude that the project will not have an adverse effect on site integrity. Applicants may also choose to submit licence and consent applications without completing the regional level survey, research and assessment work required for POs E1 and E2, however, the competent authority may be unable to conclude that the project will not have an adverse effect on site integrity and the competent authority may consider that there is not sufficient information available to process the licence and consent application without prior completion of this survey, research and assessment effort. Any developer who wishes to pursue a licence or consent application on these terms should be aware of these potential risks.

Figure 17 below provides an outline of the Scottish Ministers' preferred consenting routes for these Plan Options.

⁴³ Including, for example, a study updating foraging ranges for key seabird species (prepared as part of The Crown Estate Round 4 'Enabling Actions' programme) and the Marine Ecosystems Research Programme seabird at sea density study.

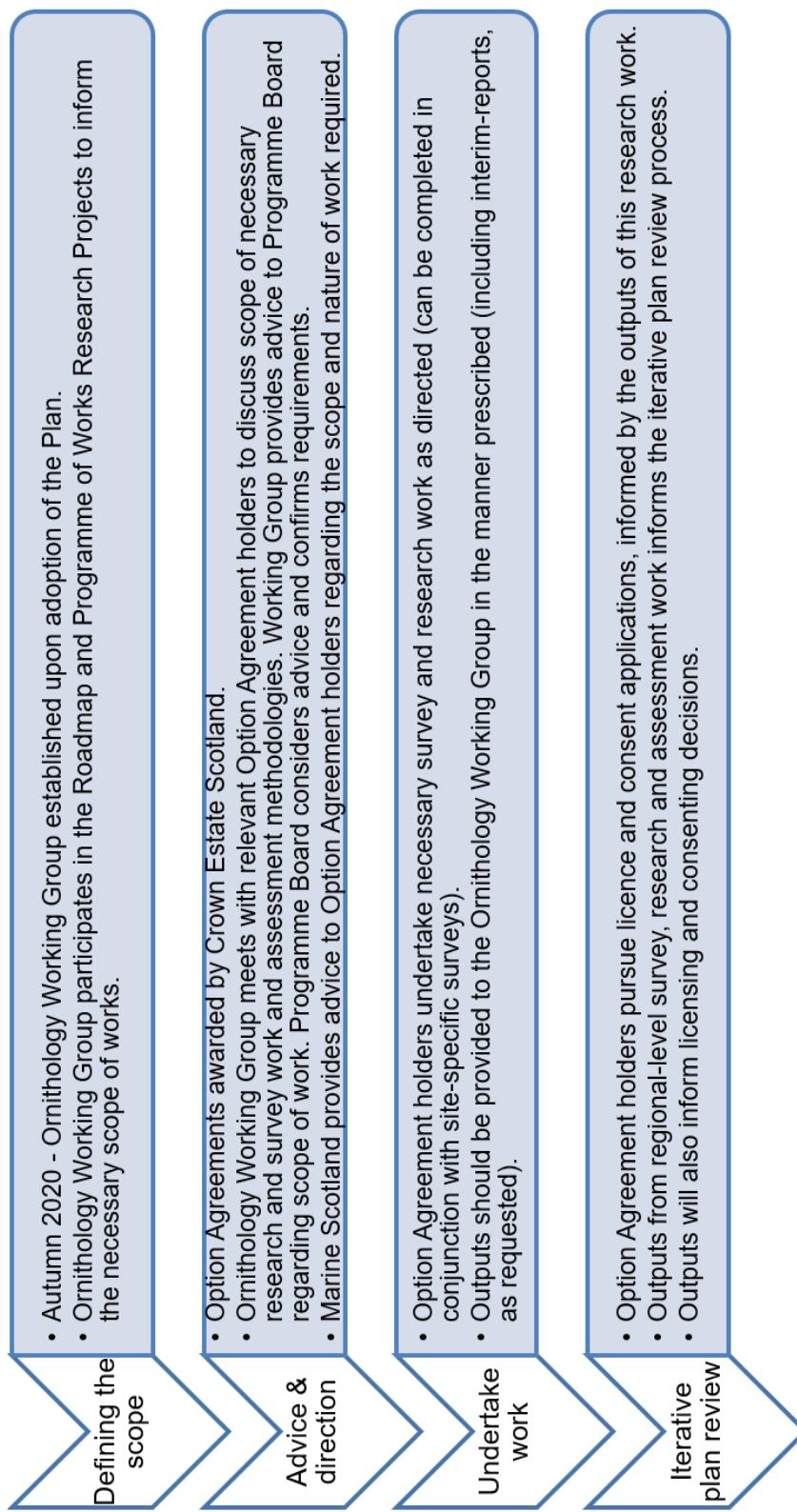


Figure 17 Regional-level survey (Plan Options E1 and E2) - Outline process

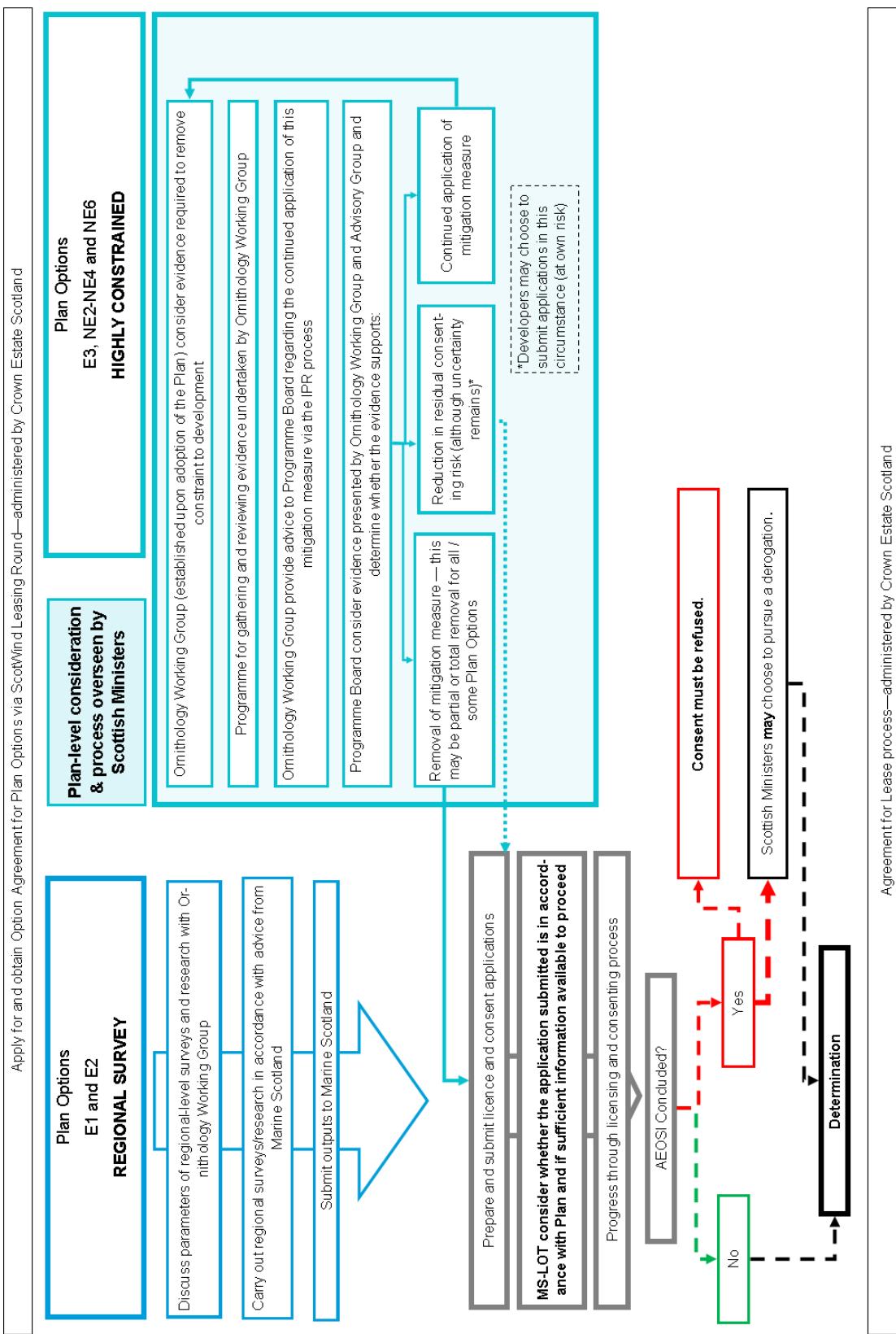


Figure 18 Scottish Ministers' preferred consenting routes

5.4 Iterative plan review

This Plan is subject to iterative plan review and management, to ensure that;

- the Plan and the underpinning assessments are informed by the best available and most up-to-date scientific research and understanding, including outputs of project-level assessments and monitoring;
- the Plan accurately reflects spatial/regional context (i.e. level of construction, operational, and other activity within the region) and potential transboundary impacts; and
- that the Plan reflects the prevailing market conditions, technological advancements and regulatory environment (including connections to the national grid and coastal infrastructure).

Section 11.5 of the HRA Report⁴⁴ provides an outline of the proposed iterative plan review cycle (for the first 2 years of the Plan's lifespan). To support the iterative review process, a Technical Advisory Group will be established upon adoption of the final Plan, to consider the implications of emerging research, evidence and assessment methodologies. In addition, an Ornithology Working Group will be established, to specifically consider ornithology evidence gaps identified via the planning process. A Sectoral Evidence Group will also be established to enable input from marine sectors affected by the Plan.

The iterative plan review process will be informed by the best available scientific information, project-level assessment and post-consent monitoring (for consented and operational wind farm projects). As monitoring data is collected, it will be used to validate the conclusions of project-level assessment and the Sustainability Appraisal. The iterative plan review process will also consider the level of current and planned activity within the POs, regionally and nationally and potential transboundary impacts, as well as stakeholder input from other marine sectors.

In addition, it is anticipated that the Plan will be subject to review, to consider emerging monitoring and research evidence, the wider policy, market and regulatory context and if required, to provide an updated spatial framework for any future CES leasing round. Currently, CES have indicated their intention to progress another leasing round around 24 months following closure of this cycle of ScotWind.

Each iteration of the Plan will be informed by any new and relevant information and research regarding the environmental, economic and social impacts of offshore wind and the effectiveness of any mitigation measures. Final decision making power regarding the Plan and any revisions will continue to rest with Scottish Ministers.

Further detail regarding the governance structure for the implementation of the Plan, is provided at section 6.2.

⁴⁴ Available at: <http://www.gov.scot/publications/draft-sectoral-marine-plan-offshore-wind-energy-habitat-regulations-appraisal/>, accessed on 14/09/2020

6. Action Plan

As outlined above, there are a number of actions which will need to be completed by regulators, developers and other stakeholders to ensure the successful implementation of the Plan and facilitate further offshore wind development in our seas.

6.1 Further seabed leasing for Scottish Waters

The UK Offshore Wind Sector Deal highlights the importance of regular future seabed leasing rounds for offshore wind development, which in turn is tied to the commitments regarding future CfD rounds.

The final Plan will provide the spatial framework for the first cycle of seabed leasing by Crown Estate Scotland (ScotWind).

Option and Lease Agreements for commercial-scale offshore wind farm development under the first cycle of ScotWind leasing should only be made for areas of seabed identified in the final Plan (i.e. final POs).

The final Plan will be reviewed prior to any future seabed leasing rounds via the iterative plan review, to ensure it is a contemporary and accurate document.

Developers should consider and address the conclusions of the final Plan and SA reports when preparing leasing, consent and licence applications, as appropriate.

It is anticipated that further rounds of ScotWind will occur around 24 months after completion of the first cycle of leasing. Furthermore, developers with a specific focus on innovation/test and demonstrator projects <100 MW or those with projects aimed at the decarbonisation of the oil and gas sector in Scotland should note section 2.5, above.

6.2 Governance of Plan Implementation

A formal governance structure is required to support the implementation of the Plan and facilitate the iterative plan review process. Amendments were made to the governance structure outlined in the draft Plan and SA, to reflect comments provided by stakeholders. The roles and responsibilities of the groupings, to be formed upon adoption of the Plan, are outlined in Table 2 and Figure 19.

Table 2 Governance structure - outline

Group	Role/Function
Scottish Ministers	<ul style="list-style-type: none"> • Responsible for approving and adopting the SMP • Responsible for approving amendments/updates to the SMP • Responsible for granting/refusing consent/licenses for individual offshore wind projects • The final decision making power rests with Scottish Ministers.
Sectoral Planning Programme Board	<ul style="list-style-type: none"> • Comprised of key officials from relevant policy areas across Scottish Government, as well as representatives from Marine Planning and Policy, Marine Scotland (“MPP”). • Considers advice and evidence received from the Technical Advisory Group, Ornithology Working Group and Sectoral Evidence Group. • Provides recommendations to Scottish Ministers regarding the need to revise or update the Plan (iterative plan review process), including the need and scope of further assessment. This will be on the basis of the evidence submitted to it, which may justify the need to revise or update the Plan. • External advice may be sought as appropriate. • Chair: Deputy Director, Marine Scotland • Secretariat: MPP • The group will meet at least once per annum, or more frequently if circumstances require.
Technical Advisory Group	<ul style="list-style-type: none"> • Comprised of representatives from the statutory consultation bodies - NatureScot, the Joint Nature Conservation Committee (“JNCC”), Historic Environment Scotland (“HES”) and the Scottish Environment Protection Agency (“SEPA”). • In addition, representatives from Marine Scotland Science (“MSS”) and MPP will be formal members of the Technical Advisory Group. • Chair: Head of Planning, Development and Crown Estate Strategy Unit, MPP • Secretariat: MPP • Meets on at least an annual basis to consider Plan-level issues. • Provides advice and report to the Programme Board regarding continued application of plan-level mitigation measures, the need for revisions to the Plan (as adopted) and further research/evidence/guidance requirements. • This advice will be informed by consideration of the evidence provided during by the Sectoral Evidence Group, consideration of other policy, legislative and regulatory changes which have occurred over the time period, outputs

	<p>of project-level assessment and other research programmes and the spatial context (i.e. development which takes place after adoption of the SMP).</p> <ul style="list-style-type: none"> The evidence submitted and considered may likely pertain to fields outside the expertise of members of the Technical Advisory Group (e.g. fisheries). In such cases, the Technical Advisory Group (and Programme Board) will be required to seek further advice and representation from the relevant stakeholders (i.e. from the Sectoral Evidence Group). These views will support the formulation of advice and production of the Report. The decision has been taken to restrict membership of this group to the statutory consultees (as defined by the Environmental Assessment (Scotland) Act 2005), with the addition of JNCC given geographic coverage of the Plan. Other stakeholders will have the opportunity to provide input via the Sectoral Evidence Group and as above if issues pertaining to their area of interest arise.
Sectoral Evidence Group	<ul style="list-style-type: none"> Formed of a wide range of sectoral interests (i.e. drawn from the current Steering Groups formed to support the planning process), i.e. commercial fisheries, commercial shipping and navigation, renewables industry. Membership shall be as follows; Crown Estate Scotland; Highlands and Islands Enterprise; Marine Scotland Science; Regional Inshore Fisheries Groups; RSPB Scotland; Scottish Enterprise; Scottish Fishermen's Federation; Scottish Government; Scottish Renewables; UK Chamber of Shipping; and WWF Scotland. The exact operation of this group will be confirmed following adoption of the Plan. This grouping will be asked to provide evidence/representations to support the iterative plan review process or may be asked to provide further representations/evidence to the Programme Board and/or Technical Advisory Group on specific issues. This grouping will be able to provide further evidence (relevant to the implementation of the Plan and the iterative plan review process) as it becomes available, for consideration by the Technical Advisory Group and Programme Board however, at a minimum an annual call will seek any relevant responses.
Ornithology Working Group	<ul style="list-style-type: none"> Formed of relevant ornithology experts (drawn from the current ScotMER ornithology receptor group), i.e. NatureScot, JNCC, MSS and Scottish Environment Link ("SE Link").

- Crown Estate Scotland will also be formal members of this group.
- Chair: MPP
- Secretariat: MPP

Role in relation to application of Plan-level mitigation measures for Plan Options E1 and E2 (Error! Reference source not found.)

- To be formed immediately upon adoption of the Plan to define the scope and nature of regional surveys and research work, including assessment of survey outputs, in relation to development within Plan Options E1 and E2.
- The recommendations will be formed in consultation with relevant Option Agreement holders (or their representatives). Option Agreement holders, however, will not form part of the membership of the Ornithology Working Group.
- The Ornithology Working Group will then provide advice to the Programme Board (this is due to the replication of members on the Technical Advisory Group with the relevant expertise and to avoid unnecessary duplication). The Programme Board will then confirm the final survey and research requirements and these details will be communicated to developers via Marine Scotland.
- Developers will be advised to complete the surveys and assessment by Marine Scotland, prior to the submission of any licence/consent application.
- Survey and assessment outputs should be provided by developers to the Ornithology Working Group, prior to the submission of any licence and consent applications, in the format directed by Marine Scotland, to support the iterative plan review process and further planning and licensing/consenting decision-making processes.

Wider role – iterative plan review process, application of plan-level mitigation measures (i.e. E3, NE2-NE4 and NE6), defining research requirements

- To assist in identifying and addressing evidence gaps (relating to ornithology) that constrain potential development within the Plan Options and are required to be addressed to inform future planning exercises.
- The Working Group will provide guidance in the production of an ‘Ornithology Roadmap’, which will be prepared by a contractor(s) (appointment process currently underway). The Roadmap will identify ongoing research and any specific actions required to produce the evidence base for assessing ornithological constraints.
- Upon completion of the Roadmap, the Working Group will work with the appointed contractor(s) to support the production of a ‘Programme of Works’ – a detailed programme of works to address strategic research projects

	<p>that can be implemented within the short to medium term to initiate Roadmap actions.</p> <ul style="list-style-type: none"> • The Working Group will also be asked to; <ul style="list-style-type: none"> ◦ Provide views regarding the continued application of plan-level mitigation measures in relation to Plan Options E1-E3, NE2-NE4 and NE6; ◦ To provide advice/views regarding whether further research or guidance is required to inform planning and consenting; and ◦ Consider the findings of future project-level assessments, relevant research programmes and the wider spatial context and provide advice regarding the potential implications of these changes for the Plan (as adopted).
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6.3 Submission of new evidence

The process for continued submission of new evidence (which the draft Plan and SA referred to as the Annual Forum) is a key mechanism to support the Plan implementation and iterative review processes. Key stakeholder representatives, who form part of the Sectoral Evidence Group, will be asked to provide details of emerging evidence and research, which could have a bearing on the implementation of the Plan and resultant development on at least an annual basis, but will have the opportunity to provide this evidence as it emerged.

The evidence submitted may have arisen as a result of technological advances, scientific evidence, project survey and monitoring (including of the effectiveness of mitigation measures) and or as the result of project-level assessments. **The request for new evidence, to support iterative plan review, should not be an opportunity for further public consultation on the Plan.** Should sufficient evidence be presented, which Scottish Ministers consider justifies the need to review the Plan, then public consultation will occur at the appropriate stage in the planning process. It is currently anticipated that the Plan will be reviewed at Year 2 (although this may occur earlier if sufficient justification is provided).

The scope of evidence submitted will be restricted to ensure it is only relevant to the Plan and its implementation. Discussions within the Sectoral Evidence Group could follow a similar approach to that taken recently regarding consideration and discussion of emerging assessment methodologies for projects in the Forth and Tay region (2020). Further details regarding this process will be provided in due course.

The first annual request for evidence from the Sectoral Evidence Group will be undertaken one year after the adoption of the Plan. The exact process and functioning of the Sectoral Evidence Group will be confirmed after the adoption of this Plan. The Technical Advisory Group shall provide the Report of findings to the Programme Board.

Members of the two Steering Groups formed to support the planning process would be approached to provide relevant evidence. The Steering Group members were as follows:-

- Crown Estate Scotland;
- Highlands and Islands Enterprise;
- Historic Environment Scotland;
- Joint Nature Conservation Committee;
- Marine Scotland Science;
- NatureScot;
- Regional Inshore Fisheries Groups;
- RSPB Scotland;
- Scottish Enterprise;
- Scottish Environment Protection Agency;
- Scottish Fishermen's Federation;
- Scottish Government;
- Scottish Renewables;
- UK Chamber of Shipping; and
- WWF Scotland.

In addition, the chairs of the ScotMER Receptor-Specific groups and Regional Marine Planning Partnerships, as well as Local Authorities, will be approached to provide any relevant evidence or advice. Other representative bodies and stakeholders, such as Fisheries Management Scotland, will also be approached.

Evidence submitted will be considered by the Technical Advisory Group for its relevance and appropriateness. A summary of all evidence provided (as it may likely pertain to fields outside the expertise of members of the Technical Advisory Group, e.g. fisheries) will be summarised and presented to the Programme Board by officials. Where members of the Technical Advisory Group do not have the specific knowledge/expertise to assess this evidence, the Technical Advisory Group will be required to seek further advice/representation from the relevant topic specialists (e.g. drawn from the Sectoral Evidence Group).

The Programme Board will then use this information to provide recommendations to Ministers regarding whether there is the need to review the Plan at this juncture (e.g. earlier than the planned review at Year 2) or whether the Plan remains reflective of current scientific understanding and knowledge. This report will be published online.

The Programme Board and Technical Advisory Group will also consider evidence submitted in light of other policy, legislative and regulatory changes which have occurred over the time period and the spatial context. Further, we anticipate that we will have an improved understanding of transmission and grid connection issues, as individual projects progress through the pipeline, which may have a bearing on the Plan.

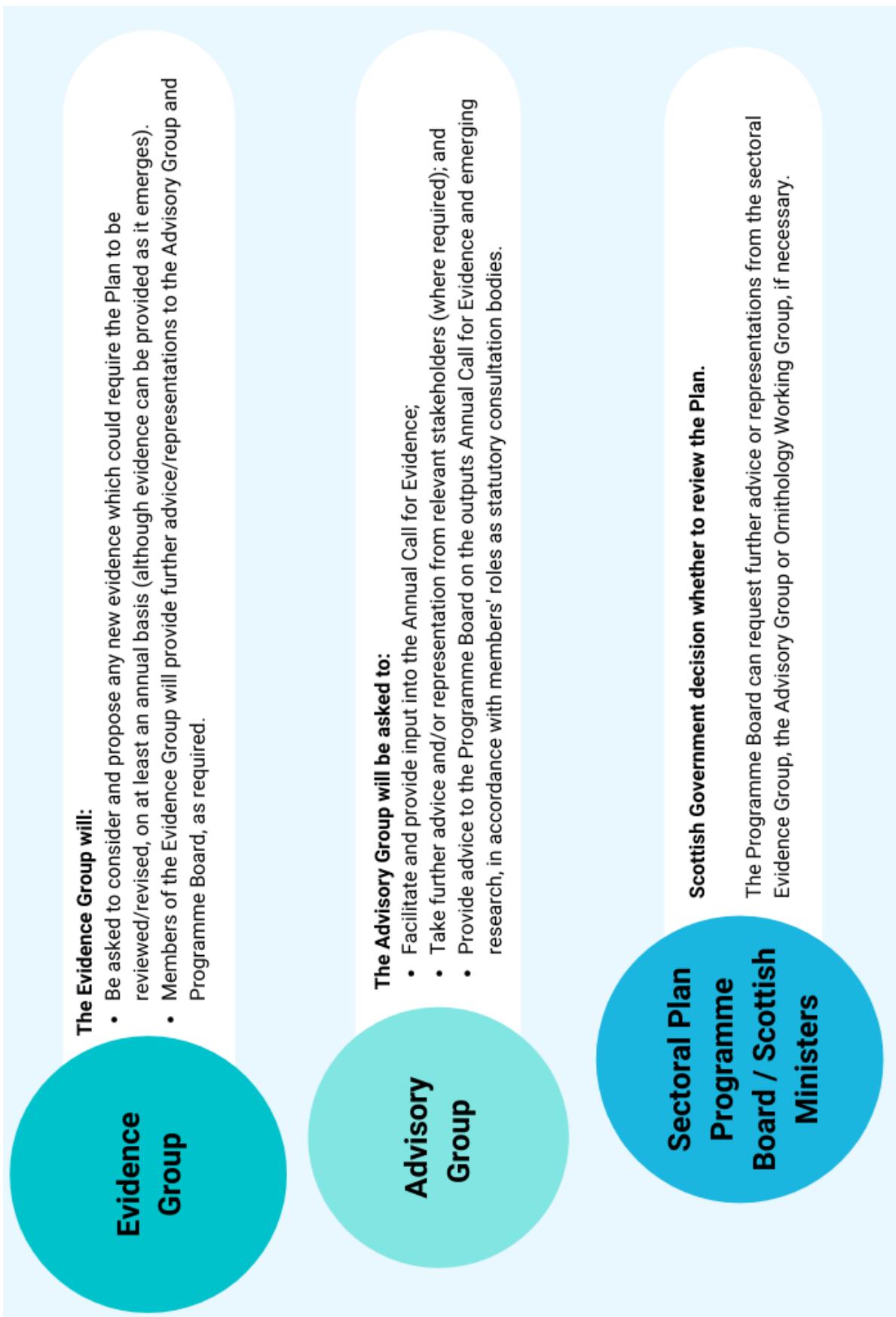


Figure 19 Governance structure - process

6.4 Developing the evidence base - linking to the ScotMER Research Programme and other strategic research programmes

The planning process has been informed by extensive technical planning work and stakeholder engagement. The evidence gathered has been used to inform the Opportunity and Constraint model and to inform the assessments in the SA and the baseline and spatial data presented in the RLG.

The planning process and SA have identified potential gaps in knowledge and data which may need to be addressed at plan and/or project-level. For example, via the completion of regional-level ornithology surveys and research in the East region or an update to the existing guidance regarding collision risk assessment for migratory bird species. In addition, scientific advisors have concluded that existing evidence relating to marine mammal abundance and distribution in the Plan regions needs to be collated and reviewed, to support future planning and assessment and identify any future priorities for research in these regions. Early work to progress this objective was published in July 2020.⁴⁵

The Programme Board and Technical Advisory Group will consider and advise on how to bridge any data or knowledge gaps identified in the assessments, or any emerging evidence gaps, in order to inform the iterative plan review process.

A number of strategic research programmes already exist and are undertaking work to address these gaps. Further, project-level assessment and monitoring may provide data and evidence which can address these gaps. As this evidence becomes available, it is anticipated that it will inform future plan and project-level assessment accordingly.

Following adoption of the final Plan it is anticipated that these strategic research programmes will seek to address the identified and emerging evidence gaps, in order to facilitate future offshore renewable energy in Scottish waters. A summary of these strategic research programmes follows and further information is also provided in the HRA report.

The ScotMER programme has been established to improve the understanding and assessment of the environmental and socio-economic implications of offshore renewable energy developments. Whilst our understanding of our marine ecosystem and the impacts of climate change is increasing, there are still knowledge gaps and data limitations that remain which result in uncertainty in current environmental baselines. ScotMER involves collaboration from industry, environmental NGOs, SNCBs and other interested stakeholders to identify and address high priority research gaps and builds on previous work undertaken by the Scottish Offshore Renewables Research Framework.⁴⁶

⁴⁵ <https://data.marine.gov.scot/dataset/regional-baselines-marine-mammal-knowledge-across-north-sea-and-atlantic-areas-scottish>, accessed on 14 August 2020

⁴⁶ Further information available here:
<https://www2.gov.scot/Topics/marine/marineenergy/mre/research>

The following seven specialist ScotMER groups have been established to identify and prioritise evidence gaps which are detailed in ‘evidence maps’. These maps are then used to inform the supporting research framework:

- Ornithology;
- Marine mammals;
- Fish and fisheries;
- Diadromous fish;
- Benthic;
- Physical processes; and
- Socio-economics.

The evidence maps provide a clear indication of the priorities, shared across stakeholders, for each receptor and drive ongoing and future research programmes. These evidence maps are reviewed regularly to stay current with emerging research and policy priorities. Further, it facilitates a joint working approach with other UK and international groups with an interest in renewables and seeks to develop and maintain an understanding of the research landscape at Scottish, national and international levels.

As research which addresses these knowledge gaps progresses, it will provide evidence to inform further project-level assessment, as well providing invaluable input into the iterative plan review process.

Further detail regarding linkages to the ScotMER research programme and specific knowledge gaps relating to the potential effects of offshore wind farm developments on seabirds is provided in the HRA report.

Licence and consent conditions for individual projects require participation in the ScotMER programme (according to the impacts of the individual project) and the relevant Regional Advisory Group (“RAG”), to ensure that outcomes from project-specific monitoring effort informs strategic research work and can contribute to the iterative plan review process.

In addition to ScotMER, a number of other collaborative research initiatives exist, whose outputs will inform the iterative plan review process, including (but not limited to);

- Offshore Renewables Joint Industry Programme for Offshore Wind;
- The Marine Mammal Scientific Support Research Programme (managed by the Sea Mammal Research Unit);
- Joint Cetacean Protocol;
- The Co-Ordinated Agenda for Marine, Environmental and Rural Affairs Science; and
- The Scottish Marine Renewables Research Group.

6.5 Grid infrastructure and connectivity

Further examination of grid infrastructure and connectivity, in light of the potential additional capacity to be delivered by the Plan, will be required. Current infrastructure and available capacity for the short-term emphasises that whilst Scotland's potential resource is significant, there are still obstacles that will need to be addressed in order to ensure that development in Scotland can be viable and competitive, especially in more remote regions. Offshore Renewable Energy Catapult ("ORE Catapult") are currently engaged in an examination of these grid infrastructure and connectivity issues and possible solutions, including the use of novel technologies and approaches. The results of this study will inform the iterative plan review process and any future revisions to the Plan and will be considered in any future assessments (as appropriate).

6.6 Relationship with the National Marine Plan and emerging Regional Marine Plans

The strategic aims of the Plan align with those of the National Marine Plan (2015), which addresses interactions between renewable energy development and other marine users. Development within any of the POs will need to take account of the National Marine Plan.

Regional Locational Guidance has been prepared as part of the Plan process, to support further project-level spatial planning within POs and this guidance should be consulted by developers and regulators.

Regional Marine Plans will be prepared by Marine Planning Partnerships within the eleven Scottish Marine Regions (extending out to 12 nautical miles). Regional marine plans must be prepared in accordance with the National Marine Plan (unless relevant considerations indicate otherwise). Marine Planning Partnerships will be required to take into account this Plan, once adopted, when preparing their Regional Marine Plans.

Regional level analysis and assessment will address the gap between strategic and project level assessment and these regional-scale assessments will be considered as part of the iterative plan review process.



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