Sectoral Marine Plan for Offshore Wind Energy (2020)

Post Adoption Statement

October 2020

Scottish Government
Riaghaltas na h-Alba
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1 Introduction

1.1 Background

1.1.1 The Scottish Government is committed to ensuring secure, reliable and affordable energy supplies, within the context of long-term decarbonisation of energy generation. The continued growth of the renewable energy sector in Scotland is an essential feature of the 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.

1.1.2 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, equating 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[1], with draft wind, wave and tidal plans subsequently produced in 2013[2].

1.1.3 Recent technological, policy, regulatory and market developments, such as the commitments outlined in the UK Offshore Wind Sector Deal[3], the development of new technologies suitable for deployment in deeper water and the aspirations established in recent climate change legislation have presented the opportunity for Scottish Ministers' to undertake a new strategic planning process.

1.1.4 In November 2017, Crown Estate Scotland (Interim Management) ("(CES)(IM)") announced its intention to run a further seabed leasing round for commercial scale offshore wind energy projects in Scottish Waters. To inform the spatial development of this leasing round, Marine Scotland, as planning authority for Scotland's seas, is required to undertake a planning exercise in accordance with relevant UK, European Union (EU) and Scottish legislation. This planning process will ensure that the spatial strategy is in place to support the forthcoming Crown Estate Scotland (CES) 'ScotWind' leasing round and enable the continued successful development of commercial-scale offshore wind. The planning process for the draft Sectoral Marine Plan for Offshore Wind Energy ("the Draft Plan") commenced in early 2018, following the process outlined in

[1] Scottish Government, Blue Seas Green Energy (March 2011) Available at: https://www2.gov.scot/Topics/marine/marineenergy/wind

[2] Further information available here: https://www2.gov.scot/Topics/marine/marineenergy/Planning

[3] UK Offshore wind Sector Deal, Policy Paper 2020: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal

Figure 1, and builds upon the previous planning exercises (undertaken in 2011 and 2013).

1.1.5 During the early development of the Plan, there were a number of steps in the identification of potential areas for future offshore wind development. Initially the Constraints analysis and scoping identified a series of Areas of Search (AoS), which formed part of early consultations. These were then developed as an iterative process alongside early assessments and consultation to the Draft Plan Option (DPO) areas which were the basis for formal assessment.

1.1.6 The assessments were subsequently undertaken, based on the Draft Plan Option areas shown in Figure 2 and reports produced to summarise these. Consultation on the Draft Plan and the assessment documents (Strategic Environmental Assessment (SEA), Socio- Economic Impact Assessment (SEIA), Habitats Regulations Assessment (HRA), Equalities Impact Assessment (EQIA) and Island Communities Impact Assessment (ICIA)4) took place between December 2019 to March 2020 and the outputs of this consultation exercise are outlined in the consultation report5.

1.1.7 Following review of the outputs of the assessments, consideration of comments received during the consultation, and as a result of further consultation amendments were made to the DPOs in order to develop the Plan Options included within the final Plan (Figure 3). In order to ensure the validity of the assessments undertake in the light of these final Plan Options, a review of the changes, in addition to any further data which has been identified or released during or following the consultation, has been undertaken against each of the key assessments, see Annexes A (SEA), B (SEIA) and C (HRA) for the outcomes of the review (the impacts of changes on the EQIA and ICIA were reviewed and deemed not to require detailed assessment).

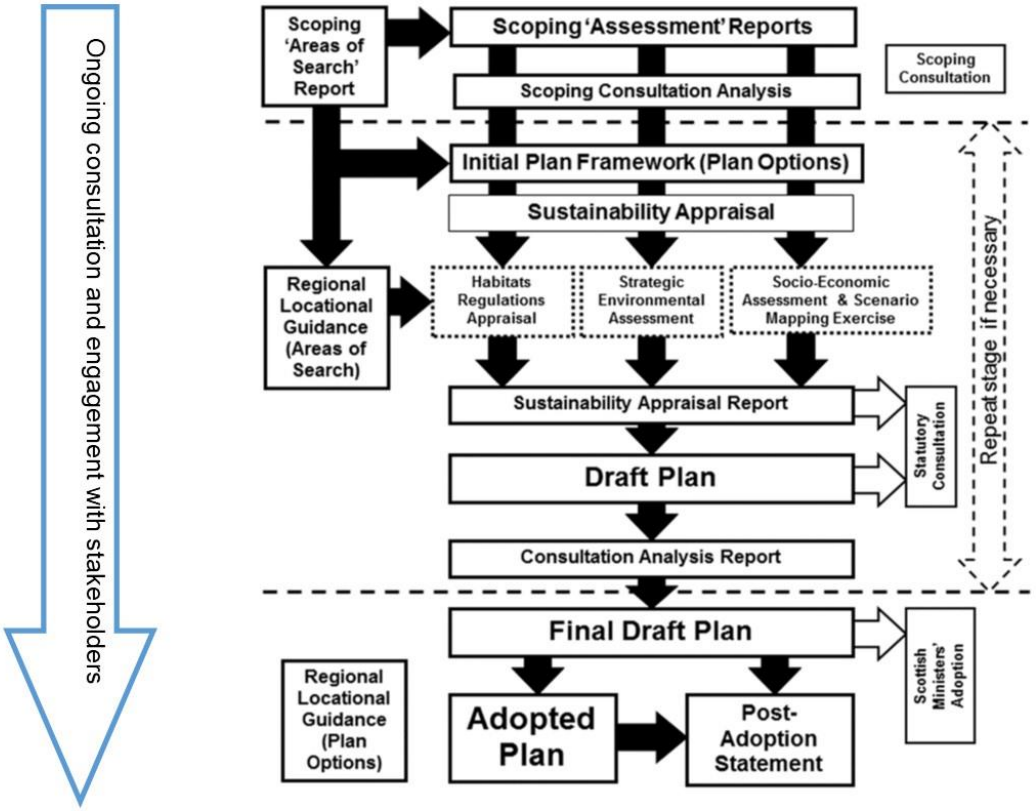
1.1.8 The final Plan provides the spatial framework for the first cycle of seabed leasing by Crown Estate Scotland ("CES"), which launched in June 20206.

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

[5] Scottish Government, 2020. Draft Sectoral Marine Plan for Offshore Wind Energy (2019). Consultation Analysis Report (December 2019 to March 2020). June 2020

[6] https://www.crownestatescotland.com/what-we-do/marine/asset/offshore-wind/section/scotwind-leasing, accessed on 01/09/2020

Figure 1 Planning process



1.2 The use of scenarios during the assessment process

1.2.1 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 plan option 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 they should not be taken as being an endorsement of projects up to this size within an option area, as further project level assessment and planning will be required to ensure avoidance of significant adverse effects. Consideration of the potential constraints associated with environmental, social and economic effects of developments is provided within the SEA, SEIA, HRA and RLG reports.

1.3 Structure of this Post Adoption Statement

1.3.1 Section 18(3) of the Environmental Assessment (Scotland) Act 2005 ("the 2005 Act") sets out the information which should be included in the SEA Post Adoption Statement. In summary, it should include;

- How the environmental considerations have been integrated into the plan, programme or strategy;
- How the Environmental Report has been taken into account;
- How the opinions expressed by consultees have been taken into account;
- The reasons for choosing the plan, programme or strategy as adopted, in light of other reasonable alternatives considered; and
- The measures to be taken to monitor the significant environmental effects of the implementation of the plan, programme or strategy.

1.3.2 In addition, this Post Adoption Statement incorporates other elements of the process leading to the development of the adopted Plan including:

- How the SEIA process has been taken into account; and
- How the HRA process has been taken into account

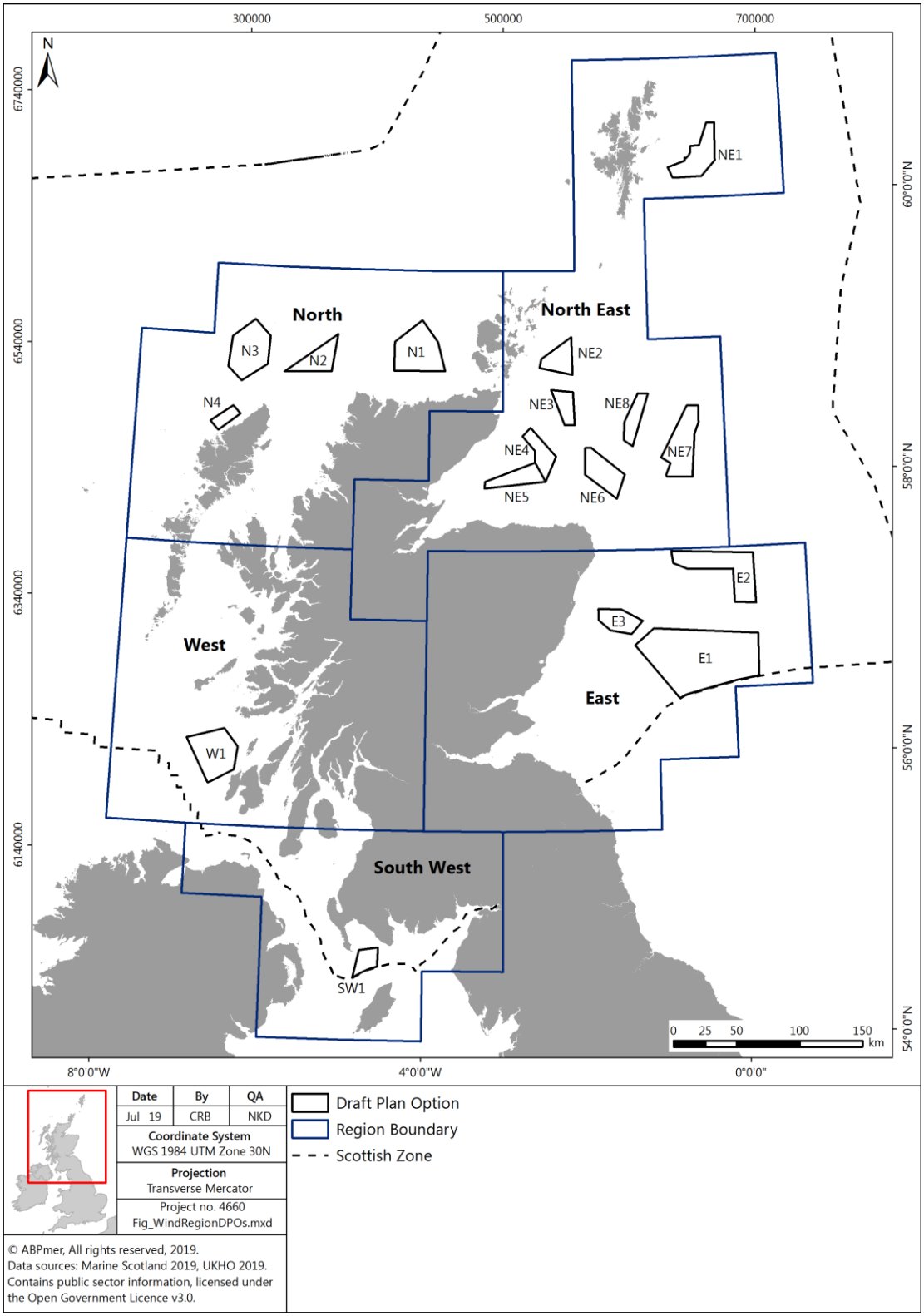


Figure 2 Superseded Draft Plan Options

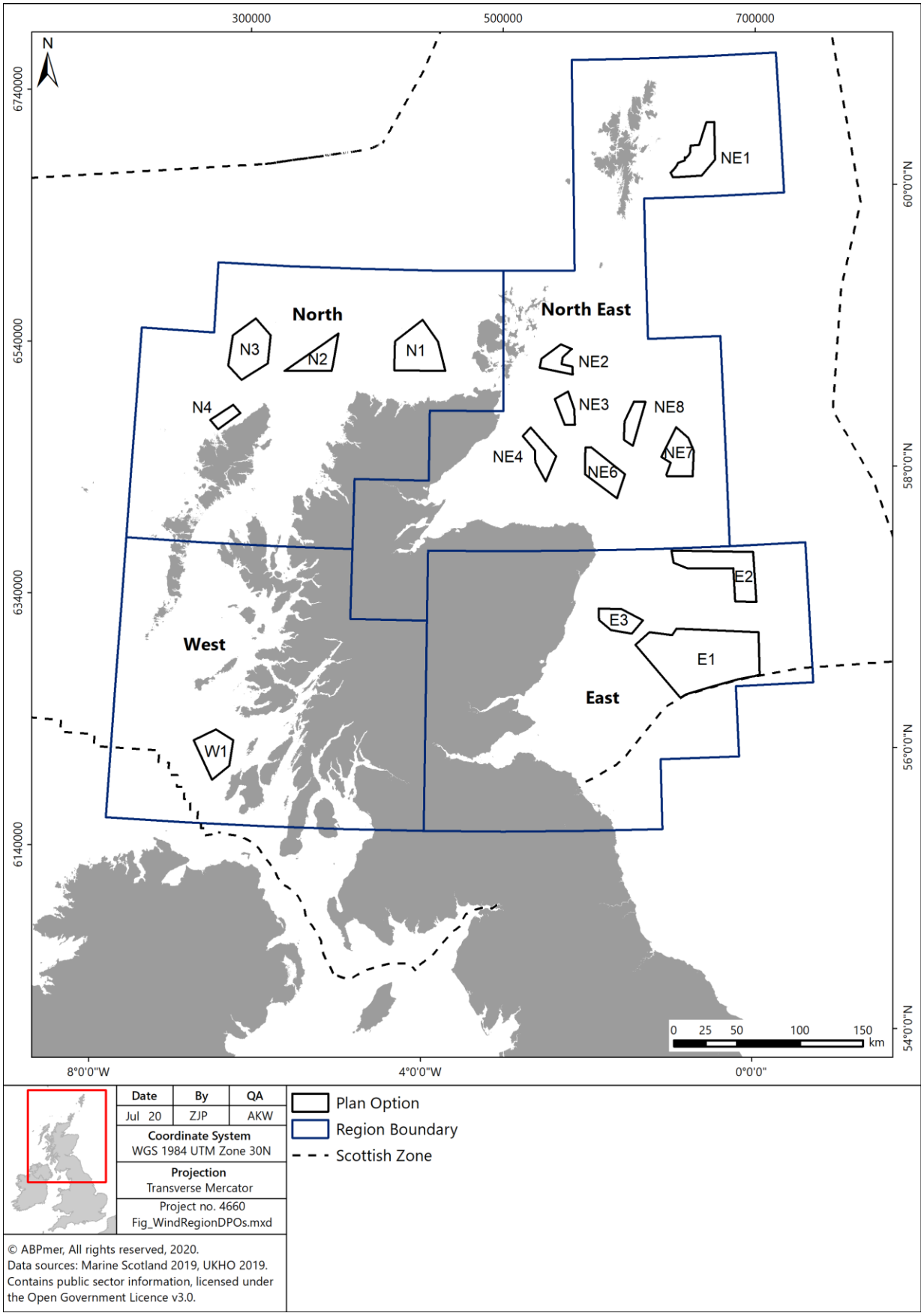


Figure 3 Final Plan Options (2020)

2 Integration of Environmental Considerations

2.1 The Strategic Environment Assessment Process

2.1.1 The 2005 Act requires public bodies in Scotland to carry out a Strategic Environmental Assessment ("SEA") of their plans, programmes or strategies. SEA is a way of examining plans as they develop to identify any significant effects they may have on the environment. It ensures that environmental considerations are taken into account and, where required, proposes mitigation measures to avoid or minimise any potentially significant adverse environmental effects.

2.1.2 The SEA process was undertaken throughout the planning process, providing an opportunity to add value by exploring the potential environmental constraints, reducing environmental impacts arising as a result of the plan by refining the plan option areas throughout the process from Areas of Search, to Draft Plan Option areas and subsequently to the Plan Option Areas presented in the final Plan and in Figure 3, avoiding areas of highest constraint.

2.1.3 The SEA process commenced with scoping, and a scoping report was submitted to the SEA Gateway in June 2018[7]. This was consulted on in June 2018 to July 2018 and a consultation report prepared[8].

2.1.4 The scoping report was followed by the Environmental Report in December 2019[9] which was based on the Draft Plan Option areas (Figure 2). This was consulted on from December 2019 to March 2020 and a consultation report prepared[10] which summarises the comments.

2.1.5 Following the completion of the consultation process, further modifications were made to the assessed areas, prior to them being accepted by Scottish Ministers as Plan Options. The reasoning behind these modifications is captured in Section 5 below, and a review of the impact of these changes, and any further information released following publication of the Draft Plan on the conclusions of the SEA, is contained within Annex A. In summary, the modifications made do not significantly impact on the conclusions of the SEA, although the removal of two sites (SW1 and NE5) and the modifications made to W1 reduce the proportion of the sites in inshore regions, and therefore may reduce associated impacts such as those on landscape and seascape.

[7] Scottish Government, 2018. Sectoral Marine Plan for Offshore Wind: SEA Scoping.
[8] Scottish Government, 2019. Sectoral Marine Plan for Offshore Wind Consultation Analysis Report. October 2019
[9] Marine Scotland. 2019. Strategic Environmental Appraisal Environmental Report for the Sectoral Marine Plan for Offshore Wind, Environmental Report, 2019.
[10] Scottish Government, 2020. Draft Sectoral Marine Plan for Offshore Wind Energy (2019). Consultation Analysis Report (December 2019 to March 2020). June 2020

2.1.6 The Post Adoption Statement is the final output from the SEA process and is required under the 2005 Act. It outlines how the findings of the SEA and the views of consultees have been taken into account as the Plan was finalised and presented for Ministerial approval.

2.2 The SEA

2.2.1 The SEA process commenced in 2018, with the preparation of, and consultation upon, the scoping report. The Scoping Report described the baseline information and key sustainability issues and set out the SEA Framework (objectives) against which potential effects were assessed. Information contained within the scoping report and from consultation responses was used in guiding the development of the Environmental Report.

2.2.2 The SEA has considered environmental effects against a set of agreed SEA objectives (outlined in Table 1) below, which were based on those developed for previous offshore wind plan SEAs and updated following advice from the consultation authorities during the scoping phase. This 'objective led' approach provides a useful mechanism to draw together and comment on potential impacts of the Plan.

Table 1 SEA Topics and Objectives

SEA Topic	SEA Objective
Biodiversity, Flora, and Fauna	• To safeguard marine and coastal ecosystems, including species, habitats, and their interactions; • To avoid adverse effects on both designated and non-designated habitats and species (note: this work has been developed in parallel with the HRA work); and • To avoid the introduction and spread of INNS.
Population and Human Health	• To maintain the accessibility of natural areas for recreation; • To minimise or prevent the discharge of pollutants into the natural environment; and • To avoid adverse effects on human health and safety.
Soil (Marine Geology and Coastal Processes)	• To avoid exacerbating coastal erosion and maintain the integrity of coastal processes; • To maintain and protect the character and integrity of the seabed, including avoiding the

	pollution of seabed strata/bottom sediments; and • To avoid significant adverse physical damage to coastal geodiversity sites from coastal infrastructure.
Water Quality	• To avoid pollution of the coastal and marine water environment; and • To maintain or work towards achieving good ecological status.
Climatic Factors	• To contribute to a diverse and decarbonised energy sector; • To ensure that adaptation to predicted climate change impacts are taken into account (for example, through consideration of resilience and changing environmental sensitivity); and • To preserve marine carbon stocks and carbon sequestration potential (note: this objective is closely linked to the SEA topic of 'Biodiversity, Flora, and Fauna').
Cultural Heritage	• To protect and, where appropriate, enhance, the historic marine environment; • To avoid damage to known and unknown coastal and marine archaeology; and • To avoid adverse effects on the character and setting of historic sites and buildings.
Landscape/Seascape	• To avoid or minimise adverse effects on landscape, seascape, and visual amenity, including designated sites; • To promote the protection of seascape and coastal landscapes; and • To avoid or minimise adverse visual effects.

2.3 How the Environmental Report has been taken into account

2.3.1 Table 2 summarises how the environmental report, produced based on the Draft Plan, has been taken into account within the final Plan in accordance with Section 18(3) of the 2005 Act. The table describes how the environmental report has been taken into account in the adopted Plan and what specific changes were made, particularly where significant negative and cumulative effects were identified. This table highlights when mitigation is to be considered,

if there is a need for a more detailed assessment at a later stage in the planning process (i.e. project-level implementation).

2.3.2 Comments received on the SEA have also been taken into account and are addressed under Question 8 in Section 5.

Table 2 Findings of the environmental report

SEA Topic	SEA Objective	Findings from the environmental report	Integrated into the Plan (Y/N)	How integrated/taken account or reason not taken into account	When should mitigation be considered?
Biodiversity, Flora, and Fauna	To safeguard marine and coastal ecosystems, including species, habitats, and their interactions	Development within the DPOs and along the export cable routes will have some direct and indirect effects on species and habitats. These effects can be minimised through careful site and route selection and implementation of appropriate mitigation. The increase in renewable energy capacity will, in the long-term, contribute to reducing greenhouse gas emissions associated with energy generation and thus help to limit the effects of climate change on marine ecosystems.	Y	The Plan recognises the importance of the sector in contributing to the reduction in greenhouse emissions. The Plan identifies project level assessment and mitigation, as proposed by the SEA which should be considered during project planning and development.	Mitigation should be considered throughout the project EIA and HRA development process for all project stages.
	To avoid adverse effects on both designated and non-designated habitats and species (note links with HRA)	None of the DPOs overlap with designated sites, however the HRA identifies potential for interaction between offshore wind development in the DPOs and the foraging ranges of bird species from SPAs. The proposed plan-level mitigation measures will help to avoid/minimise impacts to designated features. Where potential cable routes might intersect designated sites, adverse effects can be avoided or	Y	The Plan incorporates specific mitigation measures to help avoid / minimise impacts to designated features. In addition, the Plan identifies the requirement for project level assessment and mitigation, as	Mitigation should be considered throughout the project EIA and HRA development process for all project stages.

		minimised through careful route selection and installation methods. Risks to non-designated habitats and species can be avoided or minimised through careful project design and adoption of appropriate mitigation measures.		identified within the SEA.	
	To avoid the introduction and spread of INNS.	Risks associated with vessels can be minimised through the implementation of biosecurity plans for construction operation and decommissioning of offshore wind farms. The presence of offshore wind farms will provide new substrate which could be colonized by INNS. However, experience to date does not indicate that this is a significant risk pathway for the spread of INNS.	Y	The Plan identifies the requirement for biosecurity management plans as part of project level assessment and mitigation.	Biosecurity management plans should be considered during project planning and assessment for all stages of project development.
Population and Human Health	To maintain the accessibility of natural areas for recreation	Within the DPOs themselves, recreational activity is limited to yachting activity and angling. There is potential for displacement of this activity, however spatial planning within the DPOs can be used to avoid areas of key effect and mitigate any deterioration against this objective. There are some areas inshore of the DPOs where recreational activity may be affected by export cable installation. However, effects from cable installation are considered to be temporary, and planning of the cable route to avoid key areas can mitigate deterioration against the objective.	Y	The plan recognises potential effects on recreational users and recommends that project level mitigations are identified to reduce impacts on recreational users.	Impacts on recreational usage should be considered as part of the project level assessment and consultation processes.
	To minimise or prevent the	The implementation of the plan will not directly support achievement of this	Y	The Plan identifies the requirement for	Pollution management

	discharge of pollutants into the natural environment	objective; however, it is not considered likely that implementation of the plan will lead to a deterioration against this objective. At a project level, pollution management plans will be produced to mitigate against the effects.		pollution management plans as part of project level assessment and mitigation.	plans should be considered during project planning and assessment for all stages of project development.
	To avoid adverse effects on human health and safety	The implementation of the plan has the potential to cause deterioration of the environment against this objective due to negative effects on navigational safety. There is potential for effects on navigational safety, particularly in NE4 and NE6. In addition, where DPOs overlap at a lesser scale with navigational routes, spatial planning can be used at a project level to allow for safe transit through the DPOs, in part through the application of MCA guidance in MGN 543. At a plan level, it is considered that there will be a residual deterioration against this objective.	Y	The Plan recognises the potential impacts on navigational safety and identifies requirements for project level assessment and management, including adherence to MCA guidance.	To be considered during project planning and assessment, including during consideration of array design.
Soil (Marine Geology and Coastal Processes)	To avoid exacerbating coastal erosion and maintain the integrity of coastal processes	There are several areas where the development of a DPO and associated export cable installation has the potential to affect coastal processes. At the plan level it is not possible to determine the extent of these effects, therefore at a project level it is possible that hydrodynamic and sediment modelling may be required to	Y	The Plan recognises the potential impacts on coastal processes and identifies requirements for project level assessment and management.	To be considered during project planning and assessment.

		determine if a development will affect coastal processes.			
	To maintain and protect the character and integrity of the seabed, including avoiding the pollution of seabed strata/bottom sediments	The installation of turbines and subsea cables will affect the seabed within their physical footprint, and immediate vicinity. The development of offshore wind within the DPOs and associated export cable installation will therefore cause deterioration against this objective. The degree of effect will, however, vary significantly depending on the technology employed, the level of scour protection required, and the seabed type.	Y	The Plan recognises the potential impacts on coastal processes / seabed integrity and identifies requirements for project level assessment and management.	To be considered during project planning and assessment.
	To avoid significant adverse physical damage to coastal geodiversity sites from coastal infrastructure	There is considerable uncertainty regarding potential cable landfall locations, therefore the effect on coastal geodiversity sites cannot be assessed at a plan level. Assessment against this pathway will be undertaken at a project level, however it is expected that cable routes will be planned to avoid geodiversity sites.	Y	The Plan recognises the potential impacts on coastal processes and coastal geodiversity and identifies requirements for project level assessment and mitigation.	To be considered during project planning and assessment.
Water Quality	To avoid pollution of the coastal and marine water environment	The implementation of the plan will not directly support achievement of this objective; however, it is not considered likely that implementation of the plan will lead to a deterioration against this objective. At a project level, pollution management plans will be produced to mitigate against the effects.	Y	The Plan identifies the requirement for pollution management plans as part of project level assessment and mitigation.	Pollution management plans should be considered during project planning and assessment for all stages of

					project development.
	To maintain or work towards achieving good ecological status	The implementation of the plan has the potential to cause deterioration of the environment against this objective. Where potential for effects on the ecological baseline are identified above, recommendations have been raised to mitigate this at a plan level. At a project level, spatial planning can generally be used to avoid areas of high effect within an individual DPO and associated cable routes, and the WFD regulations place requirements on developers to avoid significant effects on the ecological status of coastal or transitional water bodies.	Y	The Plan incorporates specific mitigation measures to help avoid / minimise impacts to designated features. In addition, the Plan identifies the requirement for project level assessment and mitigation, as identified within the SEA.	Mitigation should be considered throughout the project EIA and HRA development process for all project stages.
Climatic Factors	To contribute to a diverse and decarbonised energy sector	The development of offshore wind in line with the plan has the potential to significantly contribute to the achievement of this objective.	Y	The Plan recognises the contribution of offshore wind in supporting the decarbonisation of the energy sector.	N/A
	To ensure that adaptation to predicted climate change impacts are taken into account (for example,	The plan cannot be assessed against this objective, however individual developments will be required to take account of and ensure that designs incorporate resilience against potential climate change effects. In addition, any changes to the baseline as a result of climate change will be incorporated into the plan as part of the iterative plan review process.	N	The plan does not specify climate resilience requirements; however individual projects will be required to demonstrate this under the overarching National	Mitigation should be considered throughout the project planning and design phases.

	through consideration of resilience and changing environmental sensitivity)			Marine Plan (Policy: Gen 8).	
	To preserve marine carbon stocks and carbon sequestration potential (note: this objective is closely linked to the SEA topic of 'Biodiversity, Flora, and Fauna')	There is potential for marine carbon stocks to be present within DPOs or within export cable corridors, and to be affected by development of offshore wind. At a project level spatial planning will be required to avoid areas of sensitive marine carbon, however there is potential for disturbance of seabed sediments, which form a significant carbon sink. The disturbance of seabed sediments is dependent on the technology selected, however it is considered unlikely that effects will cause deterioration against this objective at a national level.	N	Whilst this is not directly addressed within the Draft Plan, it will be managed as per the biodiversity topic above, and is expected to be included in project level assessment.	Mitigation should be considered throughout the project EIA and HRA development process for all project stages.
Cultural Heritage	To protect and, where appropriate, enhance, the historic marine environment	There are no designated historic areas within the DPOs. However, there are known shipwrecks within the DPOs and, at a project level, surveys will be required to identify areas of potential historic significance, effects on which can subsequently be avoided. At a project level this will be managed through the application of a Marine Archaeology Reporting Plan (MARP). The process of developing within the DPOs therefore has the potential to identify additional heritage	Y	The Plan includes provision for project specific survey to determine cable routes of least environmental effect, including potential effects on cultural heritage assets.	Mitigation should be considered throughout the project EIA development process for all project stages.

		assets and therefore support the achievement of this objective.			
	To avoid damage to known and unknown coastal and marine archaeology	There are no designated historic areas within the DPOs. However, there are known shipwrecks within the DPOs and at a project level surveys will be required to identify areas of potential historic significance, effects on which can subsequently be avoided. The process of developing within the DPOs therefore has the potential to identify additional heritage assets and therefore support the achievement of this objective. There is considerable uncertainty regarding potential cable routes and landfall locations, therefore the effect on coastal heritage sites cannot be assessed at a plan level. Assessment against this pathway will be undertaken at a project level through the application of a MARP, and any sensitive heritage assets avoided through appropriate route selection.	Y	The Plan includes provision for project specific survey to determine cable routes of least environmental effect, including potential effects on cultural heritage assets.	Mitigation should be considered throughout the project EIA development process for all project stages.
	To avoid adverse effects on the character and setting of historic sites and buildings	There is considerable uncertainty regarding potential cable routes and landfall locations, therefore the effect on coastal or inland heritage sites cannot be assessed at a plan level. Assessment against this pathway will be undertaken at a project level, associated with the terrestrial planning process.	Y	The Plan includes provision for project specific survey to determine cable routes of least environmental effect, including potential effects on cultural heritage assets.	Mitigation should be considered throughout the project EIA development process for all project stages.

Landscape/ Seascape	To avoid or minimise adverse effects on landscape, seascape, and visual amenity, including designated sites;	There are significant areas identified within the DPOs within which developments will affect the landscape, seascape and visual amenity of the coastal region in high and low light conditions. Potential mitigation measures have been identified for consideration at a project level, specifically the spatial planning to avoid areas closest to land or, where this is not possible, selection of smaller turbines in areas closer to land, to minimise adverse effects. This assessment can therefore support the implementation of the plan whilst achieving against this objective.	Y	The Plan addresses the potential impacts on landscape / seascape throughout, and identifies requirements for project specific consultation, assessment and mitigation. In addition, concerns regarding impacts at the DPO SW1 raised in the SEA and during consultation contributed to this being removed from the final plan.	Mitigation should be considered throughout the project EIA development process for all project stages.
	To promote the protection of seascape and coastal landscapes;	Assessment within the plan has identified potential risks to seascape and coastal landscapes, and proposed mitigation measures to reduce or remove effects. The plan therefore may support achievement of the objectives by identifying areas of lower risk for development.	Y	The Plan has reviewed the areas in the context of seascape and landscape concerns and removed / modified areas to promote areas of lower constraint. The Plan also identifies requirements for project specific	Mitigation should be considered throughout the project EIA development process for all project stages.

				consultation, assessment and mitigation.	
	To avoid or minimise adverse visual effects.	There are significant areas identified within the DPOs within which developments will affect the landscape, seascape and visual amenity of the coastal region. Potential mitigations have been identified for consideration at a project level, specifically the spatial planning to avoid areas closest to land or, where this is not possible, selection of smaller turbines in areas closer to land, in order to reduce the visual effects. This assessment can therefore support the implementation of the plan whilst achieving against this objective.	Y	The Plan has reviewed the areas in the context of seascape and landscape concerns and removed / modified areas to promote areas of lower constraint. The Plan also identifies requirements for project specific consultation, assessment and mitigation.	Mitigation should be considered throughout the project EIA development process for all project stages.

3 Integration of Socio-Economic considerations

3.1 The SEIA

3.1.1 On the same timescale as the SEA, the SEIA process commenced in 2018, with the preparation of, and consultation upon, a scoping report. The Scoping Report[11] described the baseline information and key socio-economic issues to set out the proposed scope of the subsequent SEIA report. Comments received during the consultation were considered and integrated into the SEIA.

3.1.2 Subsequently a full and detailed SEIA Report was prepared and published in December 2019[12] ,based on the Draft Plan Option areas (Figure 2). This was consulted on from December 2019 to March 2020 and a consultation report prepared[13] to summarise the comments and points raised by consultees.

3.1.3 Post consultation, and following agreement of the final Plan Options, as discussed in Section 1.1, a review of the SEIA conclusions in light of these changes has been undertaken and is included in Annex B.

3.1.4 Both the published SEIA and the update note (Annex B) concluded that there was potential for significant adverse impacts across a number of sectors, alongside potential beneficial impacts, but that there was potential for these to be mitigated based on project specific assessment and consultation.

3.2 How Socio-Economics have been taken into account

3.2.1 The output of the SEIA, alongside the results of the consultation, incorporating the views of impacted sectors (particularly the fishing industry bodies) and wider consideration of environmental impacts (discussed above in Section 2) led to further modifications to the assessed areas, prior to them being accepted by Scottish Ministers as Plan Options. The full reasoning behind these modifications is captured in Section 5 below, and a review of the impacts of these changes, and any further information released following publication of the Draft Plan on the conclusions of the SEIA, is contained within Annex B.

3.2.2 In summary, the modifications made do not significantly impact on the conclusions of the SEIA. The removal of some DPOs and adjustments to boundaries of other DPOs have the effect of reducing some of the previously-assessed cost impacts on commercial fisheries, particularly for demersal trawls and seines and pelagic trawls in the North East region, for dredges in the North East and South West regions, and for pots and traps in the South West and

[11] Scottish Government, 2018. Sectoral Marine Plan for Offshore Wind: SEIA Scoping.

[12] Marine Scotland, 2019 Socio-Economic Impact Assessment for the Sectoral Marine Plan for Offshore Wind, 2019.

[13] Scottish Government, 2019. Sectoral Marine Plan for Offshore Wind Consultation Analysis Report. October 2019

West regions. There are also reductions to the potential impacts on commercial shipping and tourism, particularly in the South West and West regions. Spatial planning at project level has the potential to further reduce socio-economic impacts.

3.2.3 Regarding the integration of socio-economic factors within the Plan, the importance of marine industries and tourism have been recognised throughout the assessment process. The Plan uses the outputs of the SEIA to recognise the potentially significant impacts on a number of sectors, including commercial fishing and commercial shipping. The Plan Options (Section 1.1) have been modified to avoid highly constrained areas and project level planning, assessment and consultation with impacted sectors have been identified as important project level mitigation measures.

4 Integration of Habitats Regulations considerations

4.1.1 On the same timescale as the SEA, the HRA process commenced in 2018, with the preparation of, and consultation upon, a scoping report[14]. The Scoping Report described the baseline information and methodology proposed for screening designated sites and subsequent assessment of likely significant effect. Comments received during the consultation[15] were considered and integrated into the HRA.

4.1.2 The scoping report was followed by a detailed HRA Report in December 2019[16] which was based on the Draft Plan Option areas (Figure 2). This was consulted on in December 2019 to March 2020 and a consultation report prepared[17] which summarises the comments.

4.1.3 Post consultation, and following agreement of the final Plan Options, as discussed in Section 1.1 and shown in Figure 3, a review of the HRA conclusions has been undertaken and is included in Annex C.

4.1.4 Both the published (and consulted upon) HRA and the update note (Annex C) concluded that significant effects on designated sites can be avoided, based on the application of both plan level mitigation, and further project level assessment and mitigation (discussed further below).

4.2 How the Habitats Regulations have been taken into account

4.2.1 The development of the Draft Plan was an iterative process which, based upon the conclusions of the HRA, incorporated a number of mitigation measures. This included the adoption of temporal mitigation as a key mitigation measure at a number of sites (NE2-NE6 and E3). In these cases, where insufficient evidence is currently available to conclude no adverse effect, development is to be delayed until such a time that further information is available to support a robust assessment.

4.2.2 In addition, the requirement for project level HRA and the application of project level mitigation, as identified within the HRA, is clearly articulated within the

[14] Scottish Government, 2018. Sectoral Marine Plan for Offshore Win: Habitats Regulations Assessment Pre-Screening Report.

[15] Scottish Government, 2019. Sectoral Marine Plan for Offshore Wind Consultation Analysis Report. October 2019

[16] Marine Scotland (2019) Habitats Regulations Appraisal Environmental Report for the Sectoral Marine Plan for Offshore Wind, 2019.

[17] Draft Sectoral Marine Plan for Offshore Wind Energy, 2019. Draft Consultation Analysis Report (December 2019 to March 2020). Report prepared by ABPmer for Scottish Government and Marine Scotland. https://www.gov.scot/isbn/9781839608544

Plan, in order for the conclusion of no adverse effect at a plan level to remain valid.

5 How the opinions expressed by consultation bodies and the public have been taken into account

5.1.1 As referred to in Section 1, the Scottish Government has undertaken two rounds of consultation as part of the development of the Plan. Firstly, in June 2018, the Scottish Government consulted on the scoping stage of this planning process. The consultation ran for a period of five weeks from 13 June 2018 to 18 July 2018. A summary of the scoping and post-scoping consultation can be found in the Consultation Analysis Report published in December 2019.[18]

5.1.2 The responses received during this scoping consultation subsequently informed the development of the SEA, which incorporated guidance from the consultation bodies on the assessment.

5.1.3 The SEA was published alongside the Draft Plan on 18 December 2019 and the consultation ran until 25 March 2020, a total of 14 weeks. The Draft Plan and supporting documents were made available on the Scottish Government website and supported by a series of 17 public events around Scotland during February and March 2020, with a further stakeholder event in London in March 2020. A summary of the results of consultation on the Draft Plan and further documentation (SEA, HRA, SEIA, RLG, ICIA and EQIA) can be found in the Consultation Analysis Report published in July 2020[19].

5.1.4 The consultation returned a total 195 responses representing 84 organisational respondents (Listed in Appendix C) and 362 individual respondents (a number of the individual respondents were treated as a collective single response having been submitted as part of a petition or a family). The way in which consultation responses have informed the further development of the Plan are summarised in Table 3 below.

5.1.5 During the consultation two transboundary responses were received, one from the Isle of Man, and one from Denmark. The response from the Isle of Man highlighted potential concerns regarding navigational safety associated with the DPO SW1, which was taken into account in the removal of the site as a Plan Option. Denmark did not raise specific concerns, beyond recognising potential impacts associated with development which will need further assessment at project level, as required by the Plan.

[18] All documents available to view at: https://www2.gov.scot/Resource/0054/00549055.pdf

[19] Draft Sectoral Marine Plan for Offshore Wind Energy (2019) Draft Consultation Analysis Report (December 2019 to March 2020). Report prepared by ABPmer for Scottish Government and Marine Scotland. https://www.gov.scot/isbn/9781839608544

Table 3 Review of consultation outcomes

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
1. Do you support the selection of the following Draft Plan Options?		
SW1	A total of 328 respondents somewhat (7) or strongly (321) opposed this DPO, whilst 38 strongly supported or somewhat supported its selection. This DPO was the most strongly opposed of all 17 DPOs. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. One membership organisation submitted an objection to the selection of this DPO on behalf of its members. Over 250 responses highlighted concerns regarding the potential adverse effects on seascape, landscape and coastal character and attendant impacts on the local economy, including tourism. One public body, with specific expertise, noted that it was strongly opposed to SW1 on the basis of navigational safety.	This DPO has not been chosen for progression as a final Plan Option, due to concerns regarding the potential scale of negative socio-economic impacts in this region (including negative impacts on seascape, landscape and coastal character). **DPO REMOVED**

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
W1	A total of 25 respondents somewhat or strongly opposed this DPO, with 34 strongly supporting or somewhat supporting its selection. Responses highlighted concerns regarding potential commercial shipping impacts along the western boundary. SNH also made specific comments regarding potential seascape, landscape and coastal character impacts due to the proximity to shore and designated/important landscapes.	This DPO has been chosen for progression as a final Plan Option, but has been reduced in area across all boundaries, in order to mitigate potential negative impacts on a range of sectors, including commercial shipping and seascape, landscape and coastal character. **DPO BOUNDARIES AMENDED**
N1	A total of 27 respondents somewhat or strongly opposed this DPO, whilst 36 somewhat or strongly supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO.	This DPO has been chosen for progression as a final Plan Option and the Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
		NO AMENDMENTS MADE
N2	A total of 22 respondents strongly or somewhat opposed this DPO, whilst 34 somewhat or strongly supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. One membership organisation submitted an objection to the selection of this DPO on behalf of its members. Responses further highlighted concerns regarding potential negative impacts on seascape, landscape and coastal character due to the proximity to shore and existing protected/designated landscapes.	The DPO has been chosen for progression as a final Plan Option and the Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **NO AMENDMENTS MADE**
N3	A total of 21 respondents strongly or somewhat opposed this DPO, whilst 37 respondents strongly or somewhat supported its selection.	The DPO has been chosen for progression as a final Plan Option and the Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO.	highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **NO AMENDMENTS MADE**
N4	A total of 20 respondents strongly or somewhat opposed this DPO, whilst 33 respondents strongly or somewhat supported its selection. Navigational safety interests highlighted particular risks to the Deep Water Shipping Route. Responses highlighted concerns regarding potential impacts on seascape, landscape and coastal character – given the DPO's proximity to shore. Potential negative impacts on bird colonies, given the DPO's proximity to these colonies, were also highlighted by respondents.	This DPO has been chosen for progression as a final Plan Option without amendments. Concerns regarding navigational safety have already been taken into account during the formulation of this DPO and can be addressed at a project-level, if required. Further project-level assessment and engagement will be required to identify and mitigate any significant effects arising from the proposal(s). **NO AMENDMENTS MADE**

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
NE1	A total of 22 respondents strongly or somewhat opposed this DPO, whilst 39 respondents strongly or somewhat supported its selection. This DPO received the second highest level of support for its inclusion out of all DPOs (equal to NE2, NE8 and E2). Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO. Responses also highlighted that the site overlaps the 12 nautical mile boundary, and therefore, any proposals would be subject to the Shetland Island Council's marine work licensing regime.	This DPO has been chosen for progression as a final Plan Option, but the portion of the site which overlaps with the Shetland Island Council's work licensing regime has been removed to reduce potential administrative burdens. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **DPO BOUNDARIES AMENDED**
NE2	A total of 32 respondents strongly or somewhat opposed this DPO, whilst 39	This DPO has been chosen for inclusion as a final Plan Option, but has been reduced in area by 26% - in order

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	respondents strongly or somewhat supported its selection. This DPO received the second highest level of support for its inclusion out of all DPOs (equal to NE1, NE8 and E2). Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO. Respondents also supported the application of plan-level mitigation measures to address potential adverse effect(s) on site integrity arising from development within this DPO.	to avoid the areas of highest existing fishing activity highlighted by the fishing sector in its response. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. This DPO remains subject to the application of plan-level mitigation measures to address concerns regarding potential impacts on key seabird species and colonies. **DPO BOUNDARIES REDUCED**
NE3	A total of 31 respondents strongly or somewhat opposed this DPO, whilst 41 strongly or somewhat supported its selection.	This DPO has been chosen for inclusion as a final Plan Option, but has been reduced in area by 22% - in order to avoid some of the areas of highest existing fishing activity highlighted by

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	This DPO received the highest level of support for its inclusion out of all DPOs. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO. Respondents also supported the application of plan-level mitigation measures to address potential adverse effect(s) on site integrity arising from development within this DPO.	the fishing sector in its response. The fishing sector had proposed a reduction of 73% of the area of the DPO, however, this would render the site commercially unviable and limit opportunities to mitigate impacts on other receptors (as required) at a project-level. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. This DPO remains subject to the application of plan-level mitigation measures to address concerns regarding potential impacts on key seabird species and colonies. **DPO BOUNDARIES REDUCED**

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
NE4	A total of 38 respondents strongly or somewhat opposed this DPO, whilst 36 strongly or somewhat supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. One membership organisation submitted an objection to the selection of this DPO on behalf of its members. Respondents highlighted that development may constrict traffic and that they would only support development in the south-western portion of the DPO due to these concerns. Respondents also supported the application of plan-level mitigation measures to address potential adverse effect(s) on site integrity arising from development within this DPO.	This DPO has been chosen for inclusion as a final Plan Option without amendments. This DPO remains subject to the application of plan-level mitigation measures to address concerns regarding potential impacts on key seabird species and colonies. It is considered that navigational safety concerns can be addressed via project-level mitigation measures identified via further assessment and engagement. **NO AMENDMENTS MADE**
NE5	A total of 37 respondents strongly or somewhat opposed this DPO, whilst 36 respondents strongly or somewhat supported its selection.	This DPO has not been chosen to progress as a final Plan Option due to the potential cumulative impacts on the fishing sector arising from development

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. One membership organisation submitted an objection to the selection of this DPO on behalf of its members.	in this DPO, in-combination with existing and consented projects and other DPOs. **DPO REMOVED**
NE6	A total of 33 respondents strongly or somewhat opposed this DPO, whilst 38 respondents strongly or somewhat supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO. One public body, with specific expertise, noted that it was strongly opposed to NE6 on the basis of navigational safety. Respondents supported the application of plan-level mitigation measures to address potential adverse effect(s) on site integrity	This DPO has been chosen to progress as a final Plan Option, without any amendments. It is considered that navigational safety concerns can be addressed via project-level mitigation measures identified via further assessment and engagement. The publication of updated foraging ranges for key seabird species (December 2019, published as part of The Crown Estate's Round 4 Enabling Actions programme) provides further scientific evidence regarding the scale of potential impacts arising from development within NE6. Therefore, NE6 remains subject to the application of plan-level mitigation measures to address concerns regarding potential

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	arising from development within this DPO, although a proportion of respondents queried whether removal of other DPOs in this region would provide additional capacity that would allow NE6 to proceed without the application of plan-level mitigation measures.	impacts on key seabird species and colonies. The Scottish Government, as the Responsible Authority, is currently preparing the Appropriate Assessment for the final Plan. This Appropriate Assessment will consider the potential likely significant effects of the Plan and whether any further mitigation measures are required. **NO AMENDMENTS MADE**
NE7	A total of 39 respondents strongly (32) or somewhat (7) opposed this DPO, whilst 37 strongly (30) or somewhat (7) supported its selection. This DPO received the second highest number of objections (second to SW1) out the DPOs selected. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO.	This DPO has been chosen for progression as a final Plan Option, subject to amendments to its boundary. The area of the DPO will be reduced by 34%, in order to avoid the areas of the highest levels of fishing activity identified via consultation and analysis. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	One membership organisation submitted an objection to the selection of this DPO on behalf of its members.	adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **DPO BOUNDARIES REDUCED**
NE8	A total of 36 respondents strongly or somewhat opposed this DPO, whilst a total of 39 strongly or somewhat supported its selection. This DPO received the second highest level of support for its inclusion out of all DPOs (equal to NE1, NE2 and E2). Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO.	This DPO has been chosen for progression as a final Plan Option, subject to amendments to its boundary to reduce the total area of the DPO by 15% (in order to avoid the areas of highest levels of fishing activity – identified via consultation and analysis). The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **DPO BOUNDARIES REDUCED**

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
E1	A total of 26 respondents strongly or somewhat opposed this DPO, whilst 37 respondents strongly or somewhat supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. One membership organisation submitted an objection to the selection of this DPO on behalf of its members. The fishing sector, however, did provide recommendations for the reduction of the area of the DPO. One public body, with specific expertise, stated that it would not support development in the western-most part of the DPO, due to potential in-combination impacts arising from development within DPOs E1 and E3.	This DPO has been chosen for selection as a final Plan Option, subject to a minor amendment to the DPO boundary, reducing the total area of the DPO by 2% (along the northern edge of the DPO). This reduction has been applied to address the concerns raised by the commercial fishing sector (avoiding an area of higher levels of activity). This reduction does not fully address the concerns raised and further project-level assessment will be required to identify and mitigate any significant adverse effects arising from any proposal(s). This is a large option with significant room for negative impacts to be avoided through spatial planning at a project level. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
		negative impacts identified via further assessment. **DPO BOUNDARIES REDUCED**
E2	A total of 19 respondents strongly or somewhat opposed this DPO, whilst 39 respondents strongly or somewhat supported its selection. This DPO received the second highest level of support for its inclusion out of all DPOs (equal to NE1, NE2 and NE8). Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO.	This DPO has been chosen for progression as a final Plan Option, without any amendments. The Regional Locational Guidance and final Plan will include details of the existing level of fishing activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **NO AMENDMENTS MADE**
E3	A total of 19 respondents strongly or somewhat opposed this DPO, whilst 36	This DPO has been chosen for progression as a final Plan Option without any amendments.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	respondents strongly or somewhat supported its selection. Responses highlighted concerns regarding potential negative impacts on existing commercial fishing activity within the DPO. The fishing sector provided recommendations for the reduction of the area of the DPO. One public body, with specific expertise, stated that it would not support development in the western-most part of the DPO, due to potential in-combination impacts arising from development within DPOs E1 and E3.	The Regional Locational Guidance and final Plan will include details of the existing levels of fishing and shipping activity and highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified via further assessment. **NO AMENDMENTS MADE**
2. Do you agree with the definition of commercial scale offshore wind farm projects as being projects capable of generating over 100 MW of electricity?	There was some uncertainty in the responses to this question, with 101 respondents choosing not to answer. Responses were split between whether to lower (27), retain (30) or increase (35) the threshold. Primarily, support to increase the threshold came from the Energy sector, who consider that an increase would support the	The definition of commercial scale offshore wind farms, for the purposes of the Final Plan, will remain as 'projects capable of generating over 100 MW of electricity'. Project proponents for projects capable of generating less than 100 MW of electricity should contact CES directly to discuss potential leasing options.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	deployment of larger test and demonstration projects. The fishing sector predominantly supported lowering the threshold, in order to see the widest range of possible offshore wind farm projects being captured within the cumulative impact assessment.	
3. Do you agree that the scientific evidence presented demonstrates that DPOs NE2-6 and E3 are subject to high levels of ornithological constraint and, therefore, the mitigation measures outlined in the Draft Plan should be applied to these DPOs?	Of the 38 respondents who answered this question, 21 agreed with the proposal and 17 disagreed. Most of the respondents who disagreed were individuals, although 5 respondents were drawn from the Energy sector. Support for this proposal was drawn from a range of sectors. Several responses from the Energy sector (both in agreement and disagreement) stated that NE6 should be excluded from this measure.	The publication of updated foraging ranges for key seabird species (December 2019, published as part of The Crown Estate's Round 4 Enabling Actions programme) provides further scientific evidence regarding the scale of potential impacts arising from development within NE6. Therefore, NE6 remains subject to this mitigation measure. The Scottish Government, as the Responsible Authority, has prepared an Appropriate Assessment for the final Plan. This Appropriate Assessment considers the potential likely significant effects of the Plan and whether any

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	Some respondents queried whether this measure should be applied to additional sites, including SW1, NE7, NE8, E1 and E2). Some responses further considered whether this measure should be expanded to include other receptors, including marine mammals and herring spawning grounds.	further mitigation measures are required. Annex D provides further detail regarding further research work required under this Plan.
4. Do you agree that the scientific evidence presented demonstrates the requirements for further regional-level survey work within DPOs E1 and E2?	A total of 23 respondents supported this requirement, whilst 18 disagreed and 64 respondents stated that they did not know. Support for the measure was primarily drawn from individuals (11) and non-specific sectors (6). Whilst 4 Energy sector respondents agreed with the measure, 12 Energy sector respondents did not support it. Opposition related to the potential impacts on timescales resulting from the need to gather and analyse further data. The level of scientific certainty surrounding the conclusion of an adverse effect on site integrity was also raised. JNCC and RSPB consider that these sites should be included	The publication of updated foraging ranges for key seabird species (December 2019, published as part of The Crown Estate's Round 4 Enabling Actions programme) provides further scientific evidence regarding the scale of potential impacts arising from development within E1 and E2. Therefore, this mitigation measure has been retained within the final Plan. The Scottish Government, as the Responsible Authority, has prepared an Appropriate Assessment for the final Plan. This Appropriate Assessment considers the potential likely significant effects of the Plan and whether any further mitigation measures are required.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	in the plan-level mitigation measure (covered by question 3 above).	Annex D provides further detail regarding further research work required under this Plan.
5. Do you have any comments regarding the proposed approach to iterative plan review?	The majority of responses were supportive of the proposed approach, from across a range of sectors. Responses generally called for greater clarity and transparency regarding the process.	Annex E provides further detail regarding how the iterative plan review process will be undertaken.
6. Do you have any comments regarding the proposed formation and role of the Advisory Group?	Numerous comments regarding the composition of the group were submitted. Responses formed a general consensus that a wide range of expertise from different sectors should be drawn upon and the Consultation Analysis Report (see section 3.7.1) outlines the suggested membership in detail. Responses generally called for greater clarity and transparency regarding the process.	Annex E provides further detail regarding how the iterative plan review process will be undertaken.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
7. Do you have any further comments or points that you think should be taken into account in the plan?	A number of comments were received regarding the regions and the overall Plan. A total of 46 responses commented on national issues (with 18 of these drawn from the Energy sector), whilst 22 responses were submitted regarding the various regions (primarily in relation to the South West – with 11 specific comments on this region, primarily from individuals (8)). Issues highlighted in this question included: • Opportunities for multi-use (e.g. aquaculture, seaweed and the utilisation of hybrid technology, such as hydrogen production); • Decarbonisation in local communities; • Clarification regarding the national, regional and individual DPO development scenarios (included at Table 1 of the Draft Plan); • The density assumption underpinning the assessment work;	The Draft Plan includes a statement of support for the progression of multi-use or hybrid technologies and this statement has been reiterated in the final Plan. The Scoping and Post-Scoping Consultation Analysis Report (published December 2019) provides further detail regarding the planning process to date, including the underpinning assumptions used in the Sustainability Appraisal (see further, page 56 regarding the density assumption). Annex E provides further detail regarding how the iterative plan review process will be undertaken and the governance structure for the Plan. Neighbouring countries that may be subject to transboundary impacts were consulted in line with the legislation and further project-level assessment will be required to identify and assess any

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	• Consideration of onshore and offshore grid transmission infrastructure; • Further detail regarding the process surrounding potential derogation procedures (Article 6(4) of the Habitats Directive); • Co-location of offshore wind and fishing activity; • Impacts on ports and harbours; • Transboundary impacts; and • The planning process to date.	transboundary impacts, e.g. on migratory bird species, as a result of project level proposals.
8. Do you have any comments on the Strategic Environmental Assessment Environmental Report?	A total of 74 comments were made on the Strategic Environmental Assessment report, primarily from individuals (33) and the Energy sector (16). Individual responses were primarily focussed on the fishing sector and South West region (in relation to visual impact and tourism).	Further project level environment impact assessment is required. This will consider the impacts of development at a more detailed level and provide further clarity regarding the scale of potential local, regional and national impacts (and transboundary impacts, if appropriate). The SEA will not be updated to reflect the comments received during this consultation process, however, where

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	Eleven respondents from the Energy sector consider that there is a lack of information regarding 'reasonable alternatives', including an assessment of the 'do nothing' alternative and the rationale for the selection of DPOs. In addition, three of the responses sought additional information regarding how the maximum realistic development scenarios were developed. Further points raised by small numbers of respondents are: • Assessment regarding grid connection infrastructure; • Aviation risks should be managed at a policy level; • Further technology specific detail; • Additional project-level mitigation measures could be identified; • Additional data on migratory fish (specifically Atlantic salmon) (regarding migratory routes and potential visual disturbance) should be considered.	data gaps have been highlighted by respondents, further consideration of these issues will take place via the iterative plan review process and Advisory Group. Information outlining how the maximum realistic development scenarios were developed is included in the Sustainability Appraisal and Draft Plan. This information will be repeated in the final Plan for clarity, including the implications for the first cycle of ScotWind leasing. The Scoping and Post-Scoping Consultation Analysis Report (published December 2019) provides further detail regarding the planning process to date, including the underpinning assumptions used in the Sustainability Appraisal (see page 56 of the Sustainability Appraisal regarding the density assumption). An iterative approach has been taken to the planning process, with consideration of potential environmental, economic and social considerations during all phases.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
		SW1 has not been selected to progress as a final Plan Option, due to the scale of impacts assessed in the Sustainability Appraisal and the comments received during this consultation process. Aviation impacts are being considered separately at a strategic level with key stakeholders. As a member of the Aviation Management Board, we will continue to ensure that Scottish interests, including radar issues which affect offshore developments, are considered fully and in a way which fits with Scotland's timescales and ambitions. A research report, examining the implications of the DPOs for grid infrastructure requirements and development will be published in due course and considered via the iterative plan review process as appropriate. It was agreed with key stakeholders, via the Screening and Scoping process,

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
		that a detailed assessment of potential offshore export cable routes to shore could not be undertaken – due to the level of uncertainties surrounding this. The SEA does, however, flag areas of sensitivity which should be considered when undertaking project planning and assessment (i.e. seal haul-out sites, key habitats).
9. Do you have any comments on the Habitats Regulations Appraisal?	Ten responses were received from individuals, who requested that additional protection was included, further consideration of fisheries interests was undertaken and that further assessment of the impacts of SW1 was required (in relation to ornithological, marine mammal and SSSI constraints). Eight organisational responses stated that they concurred with or broadly agreed with the conclusions of the HRA, in some cases whilst offering additional comments. Five organisations from the Energy or commercial fishing sectors questioned the outcome of the assessment. Nine responses	The qualifying interests and species covered by the Habitats Regulations Appraisal are defined by the Habitats Directive and were agreed with the Project Board and two Steering Groups via the Screening and Scoping process. Therefore, the HRA will not be expanded to include additional species, habitats and interests not covered by this regime. The Scottish Government, as the Responsible Authority, has prepared an Appropriate Assessment for the final Plan. This Appropriate Assessment considers the potential likely significant effects of the Plan and whether any

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	from the Energy sector requested that consideration should be given to the decisions taken to consent offshore wind projects to date with the competent authorities concluding no AEOSI. Five responses from the Energy sector, requested clarification about the potential for individual projects to progress by means of derogation under Article 6(4) of the Habitats Directive. Five organisational responses identified that they considered there to be further assessment required for migratory birds, particularly in relation to SW1. Five organisations highlighted the requirement for HRA updates to be undertaken upon receipt of updated evidence, three of which provided reference to specific new evidence they consider should be included: updated bird foraging ranges (Woodward et al., 2019) (2 responses) and 'as-built' data (as opposed to the outcome of assessments / modelling).	further mitigation measures are required and includes consideration of the implications of the updated foraging ranges for the assessment undertaken. Where data gaps have been highlighted by respondents, for example regarding migratory birds, further consideration of these issues will take place via the iterative plan review process and Advisory Group. Annex E provides further detail regarding how the iterative plan review process will be undertaken and the governance structure for the Plan.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	Five organisations recommended that a review of the mitigation presented was required, to ensure relevance and to clarify the extent to which projects might be required to adhere rigidly to the proposed mitigation measures.	
10. Do you have any comments on the Socio-Economic Impact Assessment?	A total of 88 comments were made regarding the Socio-Economic Impact Assessment, primarily by individuals (41) and the Energy sector (17). Individual comments predominantly focused on negative impacts to the fishing sector and the loss of tourism revenue. Seven individual responses highlighted the opportunities resulting from employment opportunities, energy supply and costs and opportunities for multi-use (i.e. co-location with hydrogen production) Four of the organisational responses highlighted tourism as a specific concern. Eight responses specifically referenced SW1 and considered that the potential costs outweighed the potential benefits.	Further project-level socio economic impact assessment will be required, including the completion of Supply Chain Statements as part of applications to the first cycle of ScotWind leasing. This will consider the impacts of development at a more detailed level and provide further clarity regarding the scale of potential local, regional and national impacts. SW1 has not been selected for progression as a final Plan Option, therefore concerns regarding the level of socio-economic benefit which would accrue to the area and potential negative socio-economic impacts which would occur locally (i.e. on the tourism and commercial fishing sectors) have been addressed.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	There was disagreement between the fishing and energy sectors regarding the scale of predicted potential negative impacts on the sector. The Energy sector challenged the application of the worst-case scenario in the SEIA (which assumed total cessation of fishing activity within the DPO area for the lifespan of the project, with no opportunities for displacement). In addition, two responses from the Energy sector requested clarification about the policy assumption that the Energy sector would be required to address all costs to the aviation sector for radar replacement going forwards.	In addition, a number of DPOs selected for progression as final Plan Options have been reduced or reshaped to avoid overlapping areas with existing high levels of fishing activity and shipping traffic (as outlined above). The Scoping and Post-Scoping Consultation Analysis Report (published December 2019) provides further detail regarding the planning process to date, including the underpinning assumptions used in the Sustainability Appraisal (see page 56 of the Sustainability Appraisal regarding the density assumption). Strategic work regarding the aviation sector is ongoing separate to this Plan, which will explore and address the concerns raised by the Energy sector. Refer to the Offshore Wind Policy Statement (2020).

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
11. Do you have any comments on the draft Regional Locational Guidance?	A total of 49 comments were made regarding the draft Regional Locational Guidance. Responses generally focused on the inclusion of additional sector-specific information, including; • Carbon capture and storage; • Ports and harbours; • Migratory birds; • Migratory fish; • Defence; • Fisheries; • Recreational angling; • Presence of radioactive particles in the North region; and • The cruise industry.	A finalised version of the Regional Locational Guidance has been published. The maps included in the final Regional Locational Guidance have been fully labelled to address any potential confusion. Maps detailing the RSPB reserves have been replaced with maps detailing the location of Special Protection Areas and possible Special Protection Areas, as respondents highlighted this detail would be more useful. Further consideration has been given to the inclusion of additional information regarding migratory fish, particularly diadromous fish. The Plan and RLG have been updated accordingly. The Regional Locational Guidance will not be a 'live' document and will only be fully updated when the final Plan is refreshed. However, new and updated datasets are available on Marine Scotland Maps and Marine Scotland

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
		Information and can be used to inform site-selection.
12. Do you have any comments on the Sustainability Appraisal Report?	A total of 45 comments were made on the Sustainability Appraisal report, many of these are repeated in the responses to the individual reports (questions 8 to 11) and have not been repeated here. Two responses agreed with the assessment presented. Two comments were raised in relation to the consideration of natural capital/ecosystems approach to assessment and the potential requirements for energy storage capacity to support the viability of offshore wind.	The outputs of the Sustainability Appraisal and comments received have been used to support the finalisation of the Plan. Further research is ongoing in relation to energy storage and this will inform the planning process going forward, for example, via the iterative plan review process, as appropriate. Annex E provides further detail regarding how the iterative plan review process will be undertaken and the governance structure for the Plan. A natural capital/ecosystems services was not undertaken for the assessment. Further consideration will be given to the concept as the planning process progresses.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
13. Would you add or change anything in the partial Equality Impact Assessment?	The majority of respondents (33) stated that no further changes were required, whilst 3 respondents stated that some changes were required. One individual requested further consideration of age discrimination, one individual requested further consideration of the fisheries sector and one organisational response requested additional information to be included on the importance of subsea cables (including the importance of telecommunications).	The comments received have been noted, however, no further detailed analysis has been be undertaken on the basis of the comments received. The importance of further project-level consultation and engagement with potentially impacted communities has been emphasised in the final Plan and a finalised EQIA has been published.
14. Would you add or change anything in the partial Islands Communities Impact Assessment?	The majority of respondents (46) stated that no further changes were required, whilst 12 respondents stated that some changes were required. Individual respondents suggested that the ICIA should be updated to included further detail regarding the benefits of offshore wind development for island communities - either reducing the need for more carbon intensive energy generation for isolated communities, and through potential for co-location with hydrogen / green fuel production retaining	The ICIA has been updated to reflect the final Plan Options and a finalised ICIA has been published. The comments received have been noted, however, no further detailed analysis has been undertaken on the basis of the comments received. The importance of further project-level consultation and engagement with potentially impacted island communities will be emphasised in the final Plan.

Consultation Question	Short summary of response / issue raised	How feedback has been taken into account
	jobs in island communities as opposed to exporting energy to the national grid. Organisational responses highlighted issues such as the importance of navigational safety to island communities, both regarding recreational boating and lifeline ferry services. Two responses addressed fisheries, and one recommending further information be collected for Shetland, and the other sought assurances that access to offshore wind development areas is retained, particularly for fixed gear fishermen. One respondent highlighted the inclusion of subsea cabling as an industry of high importance for island communities in the provision of power / telecommunications.	

6 Reasons for selecting the Plan as adopted or "Finalisation of the Plan" (in light of reasonable alternatives considered)

6.1.1 The development of the Plan has been an iterative process informed throughout by relevant environmental information and which has given regular consideration to reasonable alternatives. These alternatives are confined to the consideration of alternative offshore wind opportunities, in line with the focus of the Plan.

6.1.2 The initial Areas of Search scoping work identified prospective Areas of Search, in line with the objective of the plan to identify locations for potential future offshore wind development in the period up to 2050 in Scottish waters, through a consideration of multiple constraints that would restrict potential for sustainable offshore wind development or where offshore wind development would be likely to negatively affect the environment, other sectors or users of the sea. These initial AoS were refined following consideration of feedback received through the initial consultation on the AoS, extended engagement with key stakeholders, preparation of the RLG, cross-sectoral steering group feedback and updated analysis resulting in the identification of 17 DPO areas in which offshore wind energy could potentially be sustainably pursued and which the Plan level assessments were based upon.

6.1.3 An assessment of reasonable alternatives has been undertaken at each of the assessment stages. The first stage of the assessment involved setting out the potential environmental effects associated with a range of alternative offshore wind technologies that could be implemented in Scottish marine waters.

6.1.4 The second stage was to apply the potential environmental effects identified in the first stage to spatial and locational constraints identified in the baseline data for each of the DPOs. The DPOs and subsequently the Plan Options (see Figure 3) themselves constituted reasonable alternatives as they represented different options for fulfilling the objectives of the Draft Plan, based on varying levels of constraint and opportunity.

6.1.5 The third stage in the assessment was to determine the potential cumulative environmental effects associated with development in multiple DPOs at a regional and national scale. For the assessment of cumulative effects at regional and national scales, three scenarios, relating to different realistic scales of possible future offshore wind development under the Plan in Scotland, have been considered. These three scenarios give indicative low, medium and high development scenarios of installed capacity at a regional and subsequently national scale. The SEA and SEIA use these scenarios to inform the assessment of a broad range of impact scenario.

6.1.6 The finalisation of the Plan, which developed the DPOs (Figure 2) into the Plan Options presented in the Final Plan (Figure 3), further took into account the

findings of the Sustainability Appraisal, comprising the SEA, HRA and SEIA, and associated consultation with stakeholders and the public. As far as possible, key issues have been explicitly addressed in the Plan itself.

6.1.7 The iterative approach to the planning process has strengthened and clarified the Plan Options taken forwards and ensured that an appropriate balance of social, economic and environmental considerations has been achieved.

7 Monitoring

7.1.1 Section 19 of the 2005 Act requires us to monitor the significant environmental effects arising as a result of the implementation of the plan, policy or strategy, to identify any unforeseen adverse effects at an early stage and enable appropriate remedial action to be taken.

7.1.2 Considerable further research is required to prioritise and address current uncertainties and data gaps. The list below sets out the formal commitments to monitoring that have emerged through the SEA. Annex D brings requirements for data collection and research arising from this framework, together with the findings and recommendations from the HRA and SEIA, to provide an integrated framework for future work.

7.1.3 The following monitoring measures have been identified through the Sustainability Appraisal and consultation process:

- Project-level EIA and HRA to identify and address any potential adverse effects;
- Monitoring at a project-level (i.e. via licence/consent conditions) to identify and address any potential adverse effects (e.g. remediation notices, compliance notices etc.);
- Application of iterative plan review to ensure that the conclusions remain valid and up-to-date, including an Annual Forum (now to be undertaken through the Sectoral Evidence Group, with a call for evidence on at least an annual basis) and 2 year review cycle;
- Implementation of the Technical Advisory Group and Ornithology Working Group to explore knowledge and evidence gaps and how to address key gaps; and
- Formation and role of the Programme Board (was 'Governance Board') sitting above the Technical Advisory Group – and comprising Project Board members – to provide guidance to Scottish Ministers regarding Plan implementation and review.

7.1.4 These requirements are integrated into the Plan as the basis for continued iterative plan review as the Plan is adopted and subsequently implemented.

8 Conclusion

8.1.1 The assessment process, incorporating the SEA, SEIA, HRA and overall SA, has been a useful and informative tool in assisting in the development of the Sectoral Marine Plan for Offshore Wind Energy and for highlighting the environmental, social and economic issues and benefits associated within the Plan.

8.1.2 The SEA process has identified the potential for negative effects on the environment, as a result of further offshore wind development. The process has considered these potential impacts and enabled mitigation measures to be devised/included which address the potential negative effects. With the implementation of the mitigation measures set out in the Environmental Report and the final Plan, it is considered that potential negative impacts can be adequately prevented, reduced or compensated during the implementation phase.

8.1.3 As part of the consultation process a number of changes, including revisions to the Draft Plan Option boundaries and functioning of the governance structure, were proposed. Each new action was reviewed prior to the production of this Post Adoption Statement to determine the likelihood of significant effects. The review indicated that each of these changes were unlikely to cause significant adverse effects or change the cumulative nature of the effects of the Plan on the marine environment or socio-economic receptors.

8.1.4 The Scottish Government is content that the level and scope of assessment is proportionate and, given the high-level nature of the Plan, it has been pitched at an appropriate level. This Post Adoption Statement concludes the assessment process, setting out the ways in which the findings of the SEA Environmental Report, SEIA, HRA and the views expressed during the consultation process have been taken into account within the Final Plan.

A SEA update note

A.1 Implications of updated Plan Options / data

This note reviews the SEA in the context of changes made and new information pertinent to the assessment reviewed subsequent to the release of the Draft Plan and associated documentation for consultation in December 2019.

There are two key changes that require consideration. Firstly, as a result of the iterative process following completion of assessments and further consultation, the decision has been taken to modify the spatial areas included as Plan Options in the final Plan. The implications of these are considered in Section A.1.1 below. Secondly, an update to foraging ranges for key seabird species was released in January 2020, the implications of which are considered in Section A.1.2 below.

A.1.1 Updates to DPOs

The changes that have been made to the DPOs (Figure 2) following consultation of the Draft Plan for Offshore Wind Energy to finalise the Plan Options (Figure 3) are summarised below. The implications of these changes on the conclusions of the SEA are also discussed.

Areas removed (SW1 and NE5)

SW1 has not been chosen for progression as a final Plan Option, due to concerns regarding the potential scale of negative socio-economic impacts in this region (including negative impacts on seascape, landscape and coastal character). Potentially significant impacts associated with development in SW1 were identified within the SEA on birds, navigational safety, sediment transport and coastal processes, and visual effects.

The removal of SW1 will eliminate the potential for these effects to be realised in this region. Whilst a number of these impacts have the potential to be realised in any Plan Option area (coastal processes, sediment transport), SW1 was considered one of the sites most susceptible to visual impacts, and thus removing SW1 may reduce the overall potential impact of the plan on visual amenity, albeit that this will be dependent on which other sites are taken forward by developers as a preference. Similarly, there were a number of key navigational routes which transected the site and thus removal of the site may remove the overall effects of the plan on navigational safety.

Whilst a number of the identified Plan Option areas have potential effects on bird populations, SW1 was considered to have potential cumulative impacts on whooper swan populations migrating up the west coast with the currently operational Robin Rigg array. Removal of this site may therefore reduce the potential for cumulative impacts on this species associated with the Plan.

NE5 DPO has not been chosen to progress as a final Plan Option due to the potential cumulative impacts on the fishing sector arising from development in this DPO, in-combination with existing and consented projects and other DPOs. Potentially significant effects associated with development in NE5 identified within the SEA were on bird species, visual receptors and navigational safety, particularly in-combination with other operational offshore wind arrays and Plan Option areas in the Moray Firth.

The removal of NE5 reduces the potential for such cumulative effects. However, given that sites remain within the Moray Firth and surrounding area, potential for cumulative effects arising as a result of the Plan remain, and therefore the temporal mitigation encompassed within the Plan by which further research is required prior to development at Plan Option areas NE2, NE3, NE4 and NE6 remain.

The removal of DPOs will clearly avoid the potential for significant effects within these areas, and the assessment contained within the SEA for these direct impacts can thus be disregarded. However, the removal of these DPOs increases the proportion of development which might be expected in other regions in order to achieve the objectives of the Plan. Given the maximum likely scale of development assessed in each Plan Option area and the regions, development under this plan is considered likely to fall within these, and therefore removing the two areas is not considered likely to change the assessment of development within the remaining areas and regions.

Areas Modified (W1, NE1, NE2, NE3, NE7, NE8 and E1)

W1 DPO has been chosen for progression as a final Plan Option, but has been reduced in area across all boundaries, in order to mitigate potential negative impacts on a range of sectors, including commercial shipping and seascape, landscape and coastal character. The SEA identified potential for significant negative effects on seabed habitats, marine mammals, fish, sediment transport and coastal processes, and visual effects associated with development in W1.

The modification of W1 has the potential to reduce the potential effects at the site, particularly where it has been modified to avoid the key shipping route at the westernmost extent, reducing potential risk to navigation and to increase the distance of the boundary from land potentially reducing impacts on visual amenity. Similarly, the increased distance from land may reduce the potential for impact on seal species which may haul-out on Islay and which have the potential to be disturbed by development. However, given that the potential maximum development is unlikely to have changed the overall scale of impacts is unlikely to significantly differ as a result of the modification.

NE1 DPO has been chosen for progression as a final Plan Option, but the portion of the site which overlaps with Shetland Island Council's works licensing jurisdiction has been removed to reduce potential administrative burdens. The SEA identified potential significant effects associated with development in NE1 on seabed habitat, spawning fish, marine mammals and sediment transport and coastal processes. The modification of NE1 is not considered to impact on the conclusions of the SEA.

NE2, NE3, NE7, NE8 and E1 have been chosen for inclusion as final Plan Options, but have been reduced in area in order to avoid the areas of highest existing fishing activity highlighted by the fishing sector. In the case of NE3 the fishing sector had proposed a greater reduction in the area of the DPO; however, this would render the site commercially unviable and limit opportunities to mitigate impacts on other receptors (as required) at a project-level. The SEA identifies potential for a range of significant effects associated with development within these 5 DPOs. The key risks are associated with bird species, navigational risk and spawning fish.

The modifications made to the 5 sites are not considered to significantly change the conclusions of the SEA, as development in the remaining area has the same potential effects, and the scale of potential development, and hence scale of effects, has not change.

A.1.2 Updates to foraging ranges

In January 2020, during the consultation on the Draft Plan, an updated synthesis of seabird tracking studies was published as part of The Crown Estate's Round 4 Enabling Actions programme (Woodward et al., 2019). The new data incorporates the tracking studies considered by Thaxter et al. (2012), and those undertaken from 2012 to 2019. This latest 2019 study provides updated foraging ranges for a number of seabirds, including the provision of a foraging range for Great Black-backed Gull which had not featured in the previous 2012 study. In particular, this latest study has identified significant increases in the mean maximum foraging ranges for Black-legged Kittiwake, Razorbill, Great Skua and Great Black-backed Gull.

The SEA assessment of potential effects on bird species was not explicitly based upon foraging ranges, although they formed part of the underlying evidence, and key conclusions were based upon either observed or modelled distribution-at-sea data. Therefore, whilst the increased foraging ranges have the potential to increase the perceived risk to a species at any given site, it is not considered that this would have a material effect on the conclusions of the SEA which identifies potential risk to foraging birds at the majority of the Plan Option areas and which recognises the requirement for project level assessment to consider the best available data.

A.1.3 Further information raised during consultation

During consultation, stakeholders had the opportunity to identify further information that should be considered as part of the plan development. The majority of the information highlighted referred to non-designated bird colonies adjacent to the SW1 DPO. Had this site been retained a review of the assessment in the light of this data would have been undertaken.

Other comments were noted by consultees, including additional data on landscape / seascape and migratory fish. These have been reviewed and whilst these may have minor impacts on the assessment at individual sites, it is considered that they do not

impact on the conclusions of the SEA and that the inclusion of such information in project level assessment will support the conclusion of no significant adverse effect.

A.2 Summary

The conclusions of the SEA have been reviewed in light of the changes made following the issue of the documents in the development of the Plan Options and further information released during the consultation phase and / or provided by consultees.

It is concluded that these changes and additional information do not change the conclusions of the SEA that, when considered at a national scale, there is potential for up to 10 GW of offshore wind to be installed in Scottish waters without significant adverse effect on the environment.

This conclusion is based on the implementation of both plan and project level mitigation, designed to avoid significant adverse effects and support the continued development of the evidence base which will inform the assessment of future developments.

There remains significant uncertainty regarding the potential size, design and location of arrays, and the size and technology selection of individual turbines. Therefore, notwithstanding the above conclusion, comprehensive project level assessment will be required against the specific characteristics of the proposed development and the baseline environment at that location.

B SEIA update note

B.1 Implications of updated Plan Options / data

The removal of some DPOs, and changes to boundaries of other DPOs, affects the potential impacts on activities assessed in the SEIA. The updated DPOs have taken into account feedback from commercial fishing, commercial shipping and from statutory bodies. No additional data is available to inform the SEIA update, therefore this update note focusses on how the updated plan options affect the previously assessed social and economic impacts in the form of a qualitative assessment and discussion of the changes.

B.1.1 Updates to DPOs

The updates to DPOs will alter the potential negative impacts on activities, based on how the boundary changes will affect the potential interaction with those activities.

The positive economic impacts from spend in the DPOs are only likely to be affected within a specific region where the boundary changes result in significant reductions in the area of the DPOs that then affect the level of development of offshore wind. These are only seen in the South West and North East regions; the overall supply chain benefits to Scotland are unlikely to be affected since the positive impacts previously allocated to the South West or North East regions are likely to be retained in Scotland based on a re-redistribution of spend across regions.

The impacts of fisheries and fishing communities drive many of the projected social impacts, so boundary changes that look to avoid important fishing areas will help to reduce potential negative effects. Knock-on social impacts associated with migration of people to take up jobs is linked to the change in positive economic impacts. The national impacts on fishing will be reduced, whole social impacts associated with migration to take up jobs may be re-distributed in line with the redistribution of positive economic impacts.

These aspects are discussed for each region in turn below.

South West region

SW1 has been removed from the plan. It was the only DPO in this region, and as a result all potential negative economic impacts previously identified in this region will not occur. For fisheries, this mostly affects vessels using mechanical dredges and pots and traps. The potential impacts on commercial shipping, tourism and recreation (boating and watersports) will also no longer occur.

With SW1 removed from the plan, there would be no positive economic impacts for the region due to there being no spend on wind farm development. The economic impacts as GVA and potential employment are therefore £0 and 0 across all scenarios. This is a reduction of £18 million (direct) to £38 million (Type II) for the low scenario and £74

million (direct) to £149 million (Type II) for the high scenario (GVA is given as total Present Value impacts over the 40 year timeframe). The projected reduction in maximum number of FTEs in any one year ranges from 31 (direct) to 53 (Type II) for the low scenario, to 245 (direct) to 426 (Type II) for the high scenario. These positive impacts could be picked up in another region such that the total national benefits could be unchanged.

Removal of the DPO means potential negative impacts such as on commercial fishing, seascape, landscape and coastal character will be avoided. This avoids potential loss of 0.2 to 0.7 FTEs in the fishing industry as a result of a reduction in the value of landings.

Social impacts associated with the additional demand on housing and services from migration of workers to take up jobs would also be avoided.

West region

There is only one DPO in the West region, and its boundaries have been reduced in order to mitigate potential negative impacts on a range of sectors, including commercial shipping and seascape, landscape and coastal character. This adjustment will reduce but not eliminate the potential costs to commercial shipping for having to divert around the area, and will reduce but not eliminate the potential costs to tourism related to visibility of arrays and their effect on seascape and landscape and coastal character. In addition, there will be a reduction in the impact as assessed on fishing vessels using pots and traps that operate in the area (21% of the previously assessed value of landings of over-12m vessels using pots and traps is no longer within the boundary of the DPO). It is noted that spatial planning at project level has the potential to further reduce socio-economic impacts.

The extent to which the positive economic impacts could be reduced in response to the reduction in area of the DPO will depend on whether spend per GW is reduced. The small reduction in size of the DPO identified may still enable the full GW to be deployed such that any change in positive economic impacts should be minimal, especially under the low and central scenarios. The maximum positive economic benefits are likely to remain unchanged from those presented in the consultation draft of the SEIA.

With 21% of the previously assessed value of landings associated with pots and traps now outside the boundary of the DPO, the impacts on commercial fishing are expected to be reduced. A 21% reduction would mean GVA losses reduce to £24,000 (low scenario, Type I) to £112,000 (high scenario, Type II) (from £30,500 to £142,000 per year)[20]. There would also be a change in impacts in terms of jobs, with this reducing to

[20] The reduction in GVA impact is estimated based on the reduction in impacts on landings, i.e. it is assumed that the 21% reduction in impacts on landings is passed on as a 21% reduction in GVA. This would actually depend on the specific fishing activity but is assumed to give a reasonable estimation of the reduction in negative economic effects. A similar approach has been applied to estimate the reduction in GVA and

0.4 FTEs (low scenario, Type I) to 1.7 FTEs (high scenario, Type II) (reduced from 0.5 FTEs to 2.2 FTEs). Most of the remaining impacts are expected to be seen in Oban. Consideration of the potential to mitigate these remaining negative impacts on fisheries is to be undertaken in the final plan.

As the total spend in West is not expected to decrease, social impacts associated with migration of workers to take up jobs generated as a result of the spend on wind farm development could still be expected to result in increases in demand for housing and services.

North region

No amendments have been made to the DPOs in the North region, therefore there are no changes to the potential negative economic impacts on activities.

As there is no change to the DPOs, the positive economic impacts are likely to remain unchanged from those presented in the consultation draft of the SEIA.

Although there is no change to the DPOs, the final plan is to consider how impacts on fishing can be mitigated to address any significant negative impacts. The impacts on fisheries are estimated to result in a reduction of GVA of £60,800 per year (low scenario, Type I) to £213,000 per year (high scenario, Type II). This would potentially affect 1.0 FTEs (low scenario, Type I) to 3.3 FTEs (high scenario, Type II) without mitigation. It is noted that spatial planning at project level has the potential to further reduce socio-economic impacts by avoiding more important areas for fishing or facilitating the continuation of fishing activities once construction is completed.

As with the West, total spend in the North region is not expected to decrease, therefore, social impacts associated with increased demand for housing and services from migration of workers to take up jobs could still be expected to occur. Due to the small increase in population expected, these impacts were identified as minor in the previous assessment.

North East region

There are a number of changes to DPOs in the North East region. NE5 has been removed and boundaries have been reduced for NE1, NE2, NE3, NE7 and NE8, all in response to feedback from the commercial fishing sector. Only NE4 and NE6 remain unchanged.

NE5 was removed due to concerns raised by the commercial fishing sector. Its removal means that the potential impacts on over-12m dredges and demersal trawls and seines, and under-12m demersal trawls and creelers will no longer occur (£803k, present value (PV) 2020-2059, 2019 prices). In addition, the potential impacts on commercial shipping

employment impacts on the commercial fishing sector in the North East and East regions.

(£6.4m, PV 2020-2059, 2019 prices) and recreational boating (£3.1k, PV 2020-2059) will also not occur.

In relation to the DPOs with boundary changes, the change to NE1 is minor and will marginally reduce the potential impact on over-12m demersal trawls.

The boundary change to NE2 significantly reduces the amount of over-12m demersal trawl and seine activity potentially affected by the DPO, by 67% and 48%, respectively. It may also reduce some of the potential impacts on the commercial shipping and power interconnector sectors.

The boundary change to NE3 reduces the over-12m demersal trawl and seine activity potentially affected, and significantly reduces the over-12m mechanical dredge activity potentially affected (79% of the value of landings previously within the DPO area is now no longer potentially affected). The boundary change may also reduce the potential impact on commercial shipping.

The boundary change to NE7 significantly reduces the over-12m demersal trawl and pelagic trawl activity potentially affected (61% and 65% respectively of the value of landings previously potentially affected is no longer within the revised boundaries of the DPO). The boundary change may also reduce the potential impact on commercial shipping.

The boundary change to NE8 significantly reduces the potential impact on over-12m demersal trawlers, and marginally reduces the potential impact on pelagic trawlers. The boundary change may also reduce the potential impact on commercial shipping.

With reductions in area for four DPOs and removal of one, there is potential for a reduction in the economic benefits realised in the region compared to those presented in the consultation draft of the SEIA, particularly under the high scenario. However, this is uncertain and the North East region is still likely to be an important area for development across Scotland, given the concentration of relevant marine engineering expertise.

Impacts on fishing across the North East region are estimated to be reduced by 44% as a result of the changes to the DPOs (based on change in value of landings affected). This would reduce the impacts on GVA of fishing to £55,000 per year (low scenario, Type I) to £192,000 (high scenario, Type II) (from £97,800 to £342,000 per year). This is equivalent to impacts on employment of 0.9 FTEs (low scenario, Type I) to 3.0 FTEs (high scenario, Type II) (reduced from 1.6 FTEs to 5.3 FTEs). With further consideration of the potential to mitigate negative impacts on fisheries to be undertaken in the final plan, these impacts could be reduced further. It is noted that spatial planning at project level has the potential to further reduce socio-economic impacts by avoiding more important areas for fishing or facilitating the continuation of fishing activities once construction is completed.

Any reduction in spend in the North East should the high scenario no longer be possible to deliver would reduce social impacts associated with migration to the region to take up jobs. Pressure on housing and services from increased demand could therefore be lower. These impacts were identified as minor in the previous assessment, potentially increasing to moderate under the high scenario. The reduction in potential spend could therefore mean the impacts are reduced to minor, although this change is uncertain.

East region

The boundary change to E1 is minor, but removes 85% of the previously potentially affected value of landings from over-12m mechanical dredge vessels.

The small change to E1 is not expected to impact on the potential of the area to deploy 1 GW (low), 2 GW (central) or 3 GW (high). As a result, the positive economic impacts are likely to remain unchanged from those presented in the consultation draft of the SEIA.

A reduction in impacts affecting mechanical dredging would reduce impacts on fishing in the region by around 85%. This would reduce impact on GVA to £2,700 per year (low scenario, Type I) to £9,600 (high scenario, Type II) (from £18,200 to £63,800 per year). The effects of employment are also significantly reduced, down to 0.05 FTEs (low scenario, Type I) to 0.15 FTEs (high scenario, Type II) (from 0.3 FTEs to 1 FTE). It is noted that spatial planning at project level has the potential to further reduce socio-economic impacts by avoiding more important areas for fishing or facilitating the continuation of fishing activities once construction is completed.

As with the West and North regions, total spend in the East region is not expected to decrease. This means that social impacts associated with increased demand for housing and services from migration of workers to take up relocated jobs could still occur. These impacts were identified as minor in the previous assessment.

B.1.2 Further information raised during consultation

No additional information was supplied by stakeholders as part of the consultation process which would change the understanding of potential social and economic effects.

Several examples of plotter data from fishing vessels were provided at consultation events as images or discussed verbally. As these data coincide with VMS, no modifications to the SEIA methodology were required.

B.2 Summary

The DPOs that have been retained and/or modified as part of the final Plan remain subject to Environmental Impact Assessment for individual project applications, which will enable any specific impacts and mitigation measures to be considered at project level.

The removal of some DPOs and adjustments to boundaries of other DPOs have the effect of reducing some of the previously-assessed cost impacts on commercial fisheries, particularly for demersal trawls and seines and pelagic trawls in the North East region, for dredges in the North East and South West regions, and for pots and traps in the South West and West regions. There are also reductions to the potential impacts on commercial shipping and tourism, particularly in the South West and West regions. Spatial planning at project level has the potential to further reduce socio-economic impacts.

The overall change in positive economic impacts from the reduction in DPOs is expected to be small. Other than in South West, where there is no DPO and, hence, no spend and no positive economic impacts, the main difference could be in North East region. Here, the reduction in size of four DPOs and removal of one DPO could mean that the high scenario (4.5 GW) is difficult to achieve, with this then resulting in a smaller level of GVA and employment impacts. However, this remains uncertain and North East region is likely to be an important centre for economic activity given its concentration of marine engineering expertise.

The main benefit from the changes to the DPOs is to fishing, with reduced impacts on fishing expected across all regions (although this is to be through consideration of further mitigation measures in the Final plan for the North since there is no change to the DPOs in the North region). The largest reduction in the level of absolute impacts is in the North East Region, which accounts for 85% of the reduction in cost impacts on the fishing sector as a result of the revisions to DPOs. This is followed by the West and South West regions which each account for 7% of the reduction in cost impacts. The South West (where all DPOs are removed) and East see the largest relative reduction in impacts on fisheries compared to the previously assessed impacts (100% and 85%, respectively). The relative reduction in impacts is smaller in the North East (44%) and West (21%) but still significant.

Social impacts due to increased demand for housing and services may only reduce in the North East region, assuming the high scenario can no longer be delivered and South West, due to there being no spend in that region. These social impacts would still be seen in West, North and East, being related to migration of people into those areas to take up the jobs that are created. However, the impacts are expected to be minor.

C HRA update note

C.1 Implications of updated Plan Options / data

This HRA update note provides a review of the changes made to DPOs and the implication of scientific evidence on seabird foraging ranges that has emerged since publication of the draft Sectoral Marine Plan for Offshore Wind Energy in December 2019.

C.1.1 Updates to Plan Options

The changes that have been made in developing Plan Options (Figure 3) from the DPOs (Figure 2), following consultation of the Draft Plan for Offshore Wind Energy and summarised below. The implications of these changes on the conclusions of the plan level HRA are also discussed.

DPOs removed

SW1 DPO has not been chosen for progression as a final Plan Option, due to concerns regarding the potential scale of negative socio-economic impacts in this region (including negative impacts on seascape, landscape and coastal character).

NE5 DPO has not been chosen to progress as a final Plan Option due to the potential cumulative impacts on the fishing sector arising from development in this DPO, in-combination with existing and consented projects and other DPOs.

It can reasonably be concluded that the removal of SW1 and NE5 from the Offshore Wind Plan will reduce the potential in-combination effect with any currently operational or consented developments on mobile interest features of European/Ramsar sites. This is particularly the case for DPOs off the North East coast of Scotland where risks relating to impacts on Black-legged Kittiwake interest features of SPAs in the region were identified in the plan level HRA for the Draft Offshore Wind Plan. Whilst the risk of in-combination effects on Black-legged Kittiwake will reduce as a result of the removal of NE5, there remains uncertainty regarding whether this is sufficient to avoid an adverse effect on integrity (AEOI) and therefore there is still considered to be a need for 'temporal mitigation'[21] for NE4 and NE6 until further evidence is available.

DPOs boundaries amended or reduced

W1 DPO has been chosen for progression as a final Plan Option, but has been reduced in area across all boundaries, in order to mitigate potential negative impacts on a range

[21] 'Temporal mitigation' on development was required for a number of DPOs (NE2, NE3, NE4, NE5, NE6 and E3). It was proposed that this would restrict development and would remain in place until such time that sufficient evidence was available regarding likely collision risk and kittiwake distribution to demonstrate that no AEOI would occur.

of sectors, including commercial shipping and seascape, landscape and coastal character.

NE1 DPO has been chosen for progression as a final Plan Option, but the portion of the site which overlaps with the Shetland Island Council's jurisdiction has been removed to reduce potential administrative burdens.

NE2, NE3, NE7, NE8 and E1 have been chosen for inclusion as final Plan Options but have been reduced in area in order to avoid the areas of highest existing fishing activity highlighted by the fishing sector. In the case of NE3 the fishing sector had proposed a greater reduction in the area of the DPO, however, this would render the site commercially unviable and limit opportunities to mitigate impacts on other receptors (as required) at a project-level.

The reduction in the area of DPOs has the potential to reduce the in-combination effect on mobile interest features of European/Ramsar sites, in particular bird interest features of DPOs located in proximity to each other (e.g. NE2 and NE3). Although the potential for in-combination effects will reduce as a result of the reduced area comprising these DPOs, there is still uncertainty regarding whether an AEOI will be avoided and therefore there is still considered to be a need for 'temporal mitigation'[22] for NE2 and NE3 until further evidence is available.

DPOs no amendments made

N1, N2, N3, N4, NE4, NE6, E2 and E3 have been chosen for progression as final Plan Options without amendments. This will have no potential implications to the outcomes of the plan-level HRA.

C.1.2 Updates to foraging ranges

The draft Sectoral Marine Plan Offshore Wind Energy HRA that was published in December 2019[23] used the synthesis of available seabird tracking data that was available at the time of publication (Thaxter *et al*., 2012) to determine the mean maximum foraging ranges to support the screening of SPA/Ramsar site bird interest features. The HRA initially applied a pre-screening 100 km buffer to capture all European/Ramsar sites within the buffer irrespective of the foraging ranges of the interest features. The mean maximum foraging ranges of species from Thaxter *et al.* (2012) that extended beyond the 100 km pre-screening buffer were used to screen in additional SPA/Ramsar sites into the HRA, specifically:

[22] 'Temporal mitigation' on development was required for a number of DPOs (NE2, NE3, NE4, NE5, NE6 and E3). It was proposed that this would restrict development and would remain in place until such time that sufficient evidence was available to demonstrate that no AEOI would be realised.

[23] Draft Sectoral Marine Plan for Offshore Wind Energy: Strategic Habitats Regulations Appraisal. Available at: https://www.gov.scot/publications/draft-sectoral-marine-plan-offshore-wind-energy-habitat-regulations-appraisal/ (accessed July 2020).

- Atlantic Puffin (105 km);
- Lesser Black-backed Gull (141 km);
- Manx Shearwater (330 km);
- Northern Fulmar (400 km); and
- Northern Gannet (229 km).

An updated synthesis of seabird tracking studies published at the end of 2019 as part of The Crown Estate's Round 4 Enabling Actions programme[24] incorporates the tracking studies considered by Thaxter *et al*.[25], and those undertaken from 2012 to 2019. This latest 2019 study provides updated foraging ranges for a number of seabirds, including the provision of a foraging range for Great Black-backed Gull which had not featured in the previous 2012 study. In particular, this latest study has identified significant increases in the mean maximum foraging ranges for Black-legged Kittiwake, Razorbill, Great Skua and Great Black-backed Gull. The implications of these updated foraging ranges on the conclusions of the plan level HRA are reviewed in the following sub-sections.

Black-legged Kittiwake

The extended mean maximum foraging range of Black-legged Kittiwake in the latest 2019 study means that a number of additional DPOs fall within the foraging ranges of SPA seabirds (specifically NE7, NE8, E1 and E2). Based on a review of other available spatial data[26],[27], and the considerably lower density of Black-legged Kittiwakes that utilise these additional DPOs, it is not considered proportionate to apply the same plan level mitigation measures (e.g. temporal mitigation) that have been recommended for other DPOs (NE2, NE3, NE4, NE6 and E3) to these additional DPOs. Overall, therefore, the conclusions of the plan level HRA remain valid and do not require any changes.

[24] Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. Desk-based revision of seabird foraging ranges used for HRA screening, Report of work carried out by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate, ISBN 978-1-912642-12-0.

[25] Thaxter, C.B., Lascelles, B., Sugar, K., Cook, A.S.C.P., Roos, S., Bolon, M., Langston, R.H.W. & Burton, N.H.K. 2012. Seabird foraging ranges as a preliminary tool for identifying candidate Marine Protected Areas. Biological Conservation 156: 53-61.

[26] Cleasby, I., Owen, E., Wilson, L., Wakefield E.D., O'Connell, P.,Bolton, M. 2020. Identifying important at-sea areas for seabirds using species distribution models and hotspot mapping. Biological Conservation. Volume 241, January 2020, 108375

[27] Wakefield, E.D., Owen, E., Baer, J., Carroll, M.J., Daunt, F., Dodd, S.G., Green, J.A., Guilford, T., Mavor, R.A., Miller, P.I., Newell, M.A., Newton, S.F., Robertson, G.S., Shoji, A., Soanes, L.M., Votier, S.C., Wanless, S., Bolton, M. 2017. Breeding density, fine-scale tracking, and large-scale modelling reveal the regional distribution of four seabird species. Ecological Applications, 27(7), 2017, pp. 2074–2091.

It should be noted that individual project-level HRAs for offshore wind farm development will need to consider the implications of the increased mean maximum foraging range from the latest study[28]. This could result in additional SPA/Ramsar sites being screened into the project level HRA compared to the plan level HRA.

Razorbill

The extended mean maximum foraging range of Razorbill in the latest 2019 study is less than the 100 km pre-screening buffer that has been applied to the DPOs in the plan level HRA. This means that there is no change to the SPA/Ramsar sites that fall within this buffer. In addition, other available spatial data [29],[30], indicates that areas used by Razorbill are generally restricted to coastal areas of shallower water and are therefore unlikely to be affected by any additional DPOs to those already identified in the plan level HRA. Consequently, the conclusions of the HRA remain valid.

Great Skua

Great skua is generally considered of lower risk from offshore wind development compared to other species such as Black-legged Kittiwake and Razorbill[31]. Therefore, whilst the extended foraging range of the latest 2019 study covers a greater area with more overlap with DPOs, the spatial distribution of Great skua throughout this area is uncertain and therefore the increase in risk from offshore wind development is not clear. Data collected by Pollock *et al.*[32] indicates that areas of highest usage are more likely to be in areas within the smaller foraging range of the previous 2012 study with lower usage towards the extended areas of the updated range. Therefore, whilst there is potential for minor changes to the assessment process for Great Skua, the conclusions of the plan level HRA are considered to remain valid.

Great Black-backed Gull

[28] Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. Desk-based revision of seabird foraging ranges used for HRA screening, Report of work carried out by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate, ISBN 978-1-912642-12-0.

[29] Cleasby, I., Owen, E., Wilson, L., Wakefield E.D., O'Connell, P.,Bolton, M. 2020. Identifying important at-sea areas for seabirds using species distribution models and hotspot mapping. Biological Conservation. Volume 241, January 2020, 108375

[30] Wakefield, E.D., Owen, E., Baer, J., Carroll, M.J., Daunt, F., Dodd, S.G., Green, J.A., Guilford, T., Mavor, R.A., Miller, P.I., Newell, M.A., Newton, S.F., Robertson, G.S., Shoji, A., Soanes, L.M., Votier, S.C., Wanless, S., Bolton, M. 2017. Breeding density, fine-scale tracking, and large-scale modelling reveal the regional distribution of four seabird species. Ecological Applications, 27(7), 2017, pp. 2074–2091.

[31] Furness, R.W., Wade, H.M. and Masden, E.A., 2013. Assessing vulnerability of marine bird populations to offshore wind farms. Journal of environmental management, 119, pp.56-66.

[32] Pollock, C.M., Mavor, R., Weir, C.R., Reid, A., White, R.W., Tasker, M.L., Webb, A. and Reid, J.B., 2000. The distribution of seabirds and marine mammals in the Atlantic Frontier, north and west of Scotland. The distribution of seabirds and marine mammals in the Atlantic Frontier, north and west of Scotland, pp.1-92.

The latest 2019 study includes a foraging range for Great Black-backed Gull which did not feature in the previous 2012 study. This foraging range is less than the 100 km pre-screening buffer that has been applied to the DPOs in the plan level HRA and therefore there are no additional SPA/Ramsar sites that need to be screened into the assessment.

The DPOs within the Moray Firth which overlap with the foraging range for Great Black-backed Gull (NE2, NE3, NE4 and NE6) are already subject to the plan level mitigation proposed for Black-legged Kittiwake (i.e. temporal mitigation). Hence, concerns regarding Great black-backed gull would be managed through further work required to provide additional information on bird distribution in this area to address the mitigation requirement.

It is recognised that further consideration will be required at a project level of the foraging use by Great Black-backed Gull of sites in the north (i.e. N2 and N3). The plan level HRA concluded that that work required for the purposes of project level HRA would identify any areas of concern and support avoidance of significant adverse effects and these conclusions remain valid.

C.1.3 Further information raised during consultation

A number of stakeholder organisations (5) highlighted the requirement for HRA updates to be undertaken upon receipt of new evidence, such as the updated bird foraging ranges[33] which have been taken into account in this HRA update note (see Section D.1.2). No further information was provided during consultation that has any implications to the conclusions of the plan level HRA.

C.2 Summary

The DPOs that have been retained and/or modified as part of the final Plan remain subject to the application of plan-level mitigation measures. The Regional Locational Guidance and final Plan will highlight the need for consideration of adequate project-level mitigation measures to address any significant negative impacts identified by further assessment.

The publication of updated foraging ranges in 2019 provides further scientific evidence regarding the scale of potential impacts arising from development within the DPOs and the need to apply plan-level mitigation measures to address concerns regarding potential impacts on key seabird species and colonies. No further mitigation measures are considered to be necessary and the conclusions of the plan level HRA remain valid.

The Scottish Government, as the Responsible Authority, is currently preparing the Appropriate Assessment for the final Plan. This Appropriate Assessment will consider

[33] Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. Desk-based revision of seabird foraging ranges used for HRA screening, Report of work carried out by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate, ISBN 978-1-912642-12-0.

the potential likely significant effects of the Plan and includes consideration of the implications of the updated foraging ranges for the assessment undertaken.

Where data gaps have been highlighted by respondents, for example regarding migratory birds, further consideration of these issues will take place via the iterative plan review process and Ornithology Working Group/Technical Advisory Group/Programme Board. Annex E provides further detail regarding how the iterative plan review process will be undertaken and the governance structure for the Plan.

D Research Requirements to Support Plan Implementation

D.1 Identification of research requirements

The planning process and Sustainability Appraisal identified potential gaps in knowledge and data, which may need to be addressed at a plan and/or project level. In particular, it identifies that collaboration between governmental bodies, non-governmental organisations and industry on research issues, to determine a consistent and comprehensive evidence baseline, will support future offshore wind development.

The research requirements identified in the Sustainability Appraisal (as summarised at Table 4) span a range of receptors and may be relevant nationally, or to specific Plan region(s). Work is already ongoing to address a number of these research questions via strategic-level research programmes, or may be addressed via project-level survey and monitoring efforts over the coming years.

In particular, the Habitats Regulations Appraisal identifies the following key research requirements, in order to address uncertainties regarding cumulative impacts on key seabird species and colonies:

- The level and type of scientific evidence which would be necessary to conclude whether or not the level of ornithological risk associated with development in Draft Plan Options ("DPOs") E2 and NE2-6 falls within acceptable limits; and
- The scope and requirements for regional surveys and research related to DPOs E1 and E2.

These research gaps will be addressed via the research package outlined at section D.2.1.

As more offshore wind projects progress through the consenting and construction phases and technology develops, it is anticipated that further research and data gaps may be identified. These emerging research requirements will be considered on a regular basis, as part of the iterative plan review process (see further Annex E), to ensure that the Plan remains reflective of current scientific knowledge and understanding and accords with the precautionary principle.

Table 4 Research gaps identified in Sustainability Appraisal

Receptor(s)	Source	Research requirement(s)
Climate Change	SEA 4.6.14	Understanding potential changes to blue carbon in future baselines, including the impacts of the Marine Protected Areas ("MPA") programme (to protect blue carbon habitats). Understanding the impacts of increased disturbance to seabed and dissolution of sequestered carbon (i.e. as a result of an increase storm intensity through climate change or changes in intensity of marine industry).
Commercial fishing	SEA 4.2.41	The future of the fishing industry post-Brexit
Commercial shipping	SEA 4.2.41	Cargo mapping to understand the value of cargo transported, to be considered in addition to transit frequency/density, in order to support assessment of potential socio-economic impacts.
Cultural Heritage	SEA 3.8.2, 4.7.1 and 4.8.1	Uncertainties regarding the presence of submerged marine structures and buried assets, particularly at a regional scale.
Fish and Fisheries	HRA 8.9.4	Potential impacts on electromagnetic fields from subsea cables on migratory fish and fish species.
Fish and Fisheries	SEA 4.2.25	The distribution of migratory fish, at all life stages, including details of migratory routes.
Fish and Fisheries	HRA 8.8.4	Assessing the potential impacts of particle motion – including measurement standards, instrumentation and sound exposure criteria.

Receptor(s)	Source	Research requirement(s)
Fish and Fisheries	HRA 8.8.7	Noise exposure guidance and thresholds for fish species, including the provision specific data on exposure and received levels to enable thresholds to be provided for all fish hearing categories. Data gaps currently preclude the setting of thresholds for behavioural responses in fish. Data gathering in this area is compounded by highly individual limits of observing fish behaviour in the natural context.
Fish and Fisheries	SEA 4.2.42	Further protection of prey species - linked to MPA network.
Fish and Fisheries	HRA 8.10.3	Potential effects of low level contaminants bio-accumulated in tissues of certain fish prey.
Marine Mammals	SEA 3.8.2	Limitations of existing baseline data for marine mammals, including recording bias and limited coverage of the SCANS III study.
Marine Mammals	SEA 4.2.25	Basking shark distribution and breeding grounds.
Ornithology	HRA	Six draft Plan Options ("DPOs") (NE2 – NE6 and E3) were identified as being subject to high levels of ornithological constraint and the SMP considers that further empirical evidence is required before it can be determined whether sufficient environmental capacity for key seabird species exists, thereby reducing the risk to an acceptable level.
Ornithology	HRA	Two DPOs (E1 and E2) identified as requiring strategic regional survey and assessment to answer uncertainties about the potential scale of cumulative impacts in this region on seabird species (resulting from collision, displacement and barrier effects), and regarding seabird densities and behaviours in the offshore region during the non-breeding season

Receptor(s)	Source	Research requirement(s)
Ornithology	SEA 4.2.25	Cause of redistribution of wintering birds across North East Europe.
Ornithology	SEA 4.2.25	Impact and cause of reduction in prey species - East, West Shetland and North East Coast - oceanographic conditions.
Ornithology	HRA 8.7.10	Species-specific flight and speeds required to support further assessment.
Ornithology	HRA 10.9.4	Further evidence regarding the level of cross connectivity between kittiwake colonies in the Moray Firth.
Ornithology	HRA 11.6.6	Consequences of displacement and barrier effects on survival and productivity and subsequent population level effects on Atlantic Puffin, Razorbill and Guillemot.
Ornithology	HRA 11.6.6 and SEA 4.2.41	Drivers of observed changes in distribution and abundance of kittiwake, gannet, puffin, razorbill, guillemot in and around offshore wind farms.
Ornithology	HRA 11.6.6	Further data regarding the movement of adult birds (during the non-breeding season) and immatures (during all seasons) and their level of exposure to cumulative effects.
Ornithology	HRA 11.5.1	Seabird body mass survival rates and how these inform the SeaBORD tool for estimating the fate of displaced birds.
Socio-Economics	SEA 4.3.29	Increase in tourism activity, resulting in an increase in vessel movements.

Receptor(s)	Source	Research requirement(s)
Socio-Economics	SEA 4.2.41	Assessing impacts on Helicopter Main Routes.

D.2 Addressing research requirements

This section provides an overview of the research requirements which will be addressed via strategic research programmes over the next two years. The outcomes of any strategic research studies will be used to inform the iterative plan review process.

In order to minimise duplication and maximise use of resources, the existing strategic research programmes will be utilised, insofar as possible, to identify and address research gaps. For example, many of the research and evidence gaps identified in the Sustainability Appraisal and by stakeholders during the consultation period, have already been identified and/or being addressed via mechanisms such as the Scottish Marine Research Energy ("ScotMER") programme and the Offshore Renewables Joint Industry Programme for Offshore Wind ("ORJIP").

It should, therefore, be noted that this section is not exhaustive and will be subject to changes, as new issues arise and projects come forward.

D.2.1 Ornithology - Roadmap of actions & programme of works

The Habitats Regulation Appraisal identified that the currently predicted level of cumulative adverse effects on key seabird species and colonies is a primary constraint to the delivery of future offshore wind development in Scottish waters. This is particularly relevant in the East and North East regions, but is also applicable to projects located in English waters. There are, therefore, several work streams and research/monitoring delivery mechanisms currently in existence at both Scottish and UK levels, which are seeking to identify and address these issues, for example through tagging studies, updates to foraging ranges and improvements to assessment methodologies and input parameters.

In order to better understand the current research landscape, research gaps and potential delivery mechanisms, work is currently underway to produce a 'Roadmap of actions', to support future offshore wind planning in Scottish waters. The Roadmap will first identify the key uncertainties regarding cumulative ornithological impacts that provide constraints to unlocking Plan Options E1-E3 and NE2-NE4 and NE6, and the level of evidence required to address these uncertainties. The Roadmap will then establish whether additional research, beyond that currently planned and underway, is required to produce this evidence and how this could be delivered.

Thereafter, a detailed 'Programme of Works' will be produced, outlining the steps required to address the evidence gaps identified in the Roadmap, for example by defining the scope of regional level surveys and research work required to address uncertainties regarding potential impacts of development within Plan Options E1 and E2. Both the Roadmap and detailed Programme of Works to inform the iterative plan review process.

D.2.2 Relationship with existing research programmes

A number of strategic research programmes already exist, which are undertaking work relevant to the evidence gaps identified via the planning process. Outputs from these research programmes, where relevant, will be considered as part of the iterative plan review process. The following collaborative research initiatives exist, including (but not limited to):

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

D.2.3 Scottish Marine Energy Research ("ScotMER") Programme

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 remaining which result in uncertainty in current environmental baselines. ScotMER involves collaboration from industry, environmental non-governmental organisations, statutory nature conservation bodies and other interested stakeholders to identify and address high priority research works. ScotMER builds on previous work undertaken by the Scottish Offshore Renewables Research Framework.[34]

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

- 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. The evidence maps drive ongoing and future research

[34] Further information, including evidence maps, available here: https://www2.gov.scot/Topics/marine/marineenergy/mre/research/maps

programmes and the maps are reviewed to stay current with emerging research and policy priorities. Further, the ScotMER approach 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.

For example, the ScotMER programme has recently published the following research reports, which are relevant for project-level assessment and future offshore wind planning:

- Improvements to modelling population consequences for disturbance of marine mammals ("iPCoD");[35]
- Regional baselines for marine mammal knowledge across the North Sea and Atlantic areas of Scottish waters;[36]
- Developing marine mammal dynamic energy budget models and their potential for integration into the iPCoD framework;[37]
- Attributing seabirds at sea to appropriate breeding colonies and populations;[38]
- Improving estimates of seabird body mass survival relationships;[39]
- Scoping Study – Regional Population Viability Analysis for Key Bird Species; [40]
- Improving our understanding of seabird behaviour at sea using GPS tag data; and
- Developing a Bird Sensitivity Mapping Tool – Phase 1.

A number of the evidence gaps identified in the Sustainability Appraisal have already been ranked as priority gaps via the ScotMER process including, for example:

[35] Scottish Marine and Freshwater Science Vol 11 No 14. Available here: https://data.marine.gov.scot/dataset/review-demographic-parameters-and-sensitivity-analysis-inform-inputs-and-outputs-population

[36] Scottish Marine and Freshwater Science Vol 11 No 12. Available here: https://data.marine.gov.scot/dataset/regional-baselines-marine-mammal-knowledge-across-north-sea-and-atlantic-areas-scottish

[37] Scottish Marine and Freshwater Science Vol 11 No 11. Available here: https://data.marine.gov.scot/dataset/developing-marine-mammal-dynamic-energy-budget-models-and-their-potential-integration-ipcod

[38] Scottish Marine and Freshwater Science Vol 11 No 8. Available here: https://data.marine.gov.scot/dataset/attributing-seabirds-sea-appropriate-breeding-colonies-and-populations-cr201518

[39] Scottish Marine and Freshwater Science Vol 11 No 13. Available here: https://data.marine.gov.scot/dataset/improving-estimates-seabird-body-mass-survival-relationships

[40] Scottish Marine and Freshwater Science Vol 11 No 10. Available here: https://data.marine.gov.scot/dataset/scoping-study-regional-population-viability-analysis-key-bird-species-cr201616

Table 5 Evidence gaps mapped to ScotMER priorities

Receptor(s)	Evidence gaps	ScotMER priority
Fish and Fisheries	Potential impacts on electromagnetic fields from subsea cables on migratory fish and fish species.	Benthic B.05 and Fish and Fisheries FF.07
Fish and Fisheries	The distribution of migratory fish, at all life stages, including details of migratory routes.	Diadromous Fish DF.1
Fish and Fisheries	Noise exposure guidance and thresholds for fish species, including the provision specific data on exposure and received levels to enable thresholds to be provided for all fish hearing categories.	Fish and Fisheries FF.02
Ornithology	Redistribution of wintering birds across North East Europe.	Ornithology OR.28

As research, which addresses the identified knowledge gaps relevant to the Plan progresses via the ScotMER programme, outputs will be used to provide evidence to inform future project-level assessments, as well as providing valuable input into the iterative plan review process (See further, Annex E).

D.2.4 ScotMER - Forthcoming research packages

Funding has been secured from Marine Scotland and Crown Estate Scotland to undertake a number of research projects via the ScotMER programme during financial year 2020-21. The delivery of these research packages will be facilitated by Marine Scotland and the outputs of these research packages will inform future planning and consenting processes.

Table 6 provides an overview of these projects.

D.2.5 Learning from project-level assessment and monitoring

In addition to strategic research programmes, project-level assessment and monitoring may provide data and evidence to address the identified evidence gaps. As this evidence becomes available, it will be used to inform the iterative plan review process.

The outputs of project-level assessments for currently consented projects have been used to inform the Sustainability Appraisal and the Plan. The outputs of future project-level assessment and decision-making processes will be used to inform the iterative

plan review process and identify new sources of data and evidence, or emerging research methodologies or data gaps.

Post-consent monitoring requirements are incorporated into licence and consent conditions in order to:

- Validate, or reduce uncertainty in, predictions of environmental impacts recorded in the supporting Environmental Impact Assessment of Habitat Regulations Appraisals;
- Provide evidence on the effectiveness of mitigation measures, to inform future decisions through adaptive management processes;
- Allow identification of unforeseen impacts; and
- Ensure that appropriate and effective monitoring of the impacts of the development is undertaken.

In addition, post-consent conditions may also require participation in the relevant Regional Advisory Group and the ScotMER programme, which will provide another avenue for informing strategic-level research work and the iterative plan review process.

Monitoring data from operational developments has already been made available (such as Beatrice, Robin Rigg, Kincardine, Levenmouth Demonstration Turbine and the European Offshore Wind Deployment Centre) and it is anticipated that further data will become available as further offshore wind farms become operational in the Forth and Tay and Moray Firth regions. The findings of project-level monitoring will be used to inform strategic research work and the iterative plan review process.

Table 6 ScotMER - Current and forthcoming research packages related to Plan evidence gaps

Project Description	Receptor(s)
Roadmap of actions to address evidence gaps identified in the Scotland's draft Sectoral Marine Plan for Offshore Wind and development of a framework to evaluate ornithological compensatory measures	Ornithology
Strategic review of the distribution, abundance and collision risk of migrating birds in Scottish Waters, and further development of the stochastic Collision Risk Modelling tool for assessments.	Ornithology
Seabird behaviour at sea: Improving estimation of parameters used to estimate collision risk of seabirds with offshore windfarms (Stage 2).	Ornithology
Feasibility study for the extending SeabORD to cover the full breeding season.	Ornithology
Further development of the Dynamic Energy Budgets models for marine mammals to reduce uncertainty in assessments.	Marine Mammals

Project Description	Receptor(s)
Study aiming to establish consistent guidance on how potential impacts of displacement of fishing activity from renewable energy sites should be assessed, titled "Developing good practice guidance for assessing fisheries displacement by other licensed marine activities". The study will also look at the potential for this displaced activity to impact upon areas of conservation importance.	Fish and Fisheries

E Governance Structure for Monitoring Plan Implementation

E.1 Changes made between the draft and final Plans

A formal governance structure is required to support the implementation of the Plan and facilitate the iterative plan review process. The outputs of the consultation exercise have been used to refine the governance structure for the Plan, with some amendments and clarifications now provided in the final Plan:

- The function of the proposed Annual Forum will be undertaken via a the 'Sectoral Evidence Group';
- The 'Governance Board' will now be named the 'Sectoral Planning Programme Board';
- The membership of the Technical Advisory Group has now been confirmed; An Ornithology Working Group will now be established, to support the Technical Advisory Group and Sectoral Planning Programme Board, comprising of relevant stakeholders, to consider the research requirements in relation to Plan Options subject to plan-level ornithological mitigation measures (E1-E3, NE2-NE4 and NE6); and
- A 'Sectoral Evidence Group', comprising of a wide range of sectoral interests, will be formed to provide representation and evidence to both the Technical Advisory Group and Programme Board, as required, and at least on an annual basis as per the conclusions of the HRA (i.e. the requirement to undertake an Annual Forum).

E.2 Roles and responsibilities

The Governance Structure will be established as follows, in order to facilitate the implementation of the Plan. Table 7 below provides a summary of the roles and responsibilities for relevant groups and organisations and Figure 4 provides an overview of the structure, roles and responsibilities.

Table 7 Governance structure - roles and responsibilities

Group	Role/Function
Scottish Ministers	• 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	• 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 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	• 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 of project-level assessment and other research programmes and the spatial context (i.e. development which takes place after adoption of the SMP). • 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 Evidence Group and as above if issues pertaining to their area of interest arise.
Sectoral Evidence Group	• 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 Board 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	• 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* (Figure 5) • 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 that can be implemented within the short to medium term to initiate Roadmap actions.
	• The Working Group will also be asked to;
	  ○ 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).

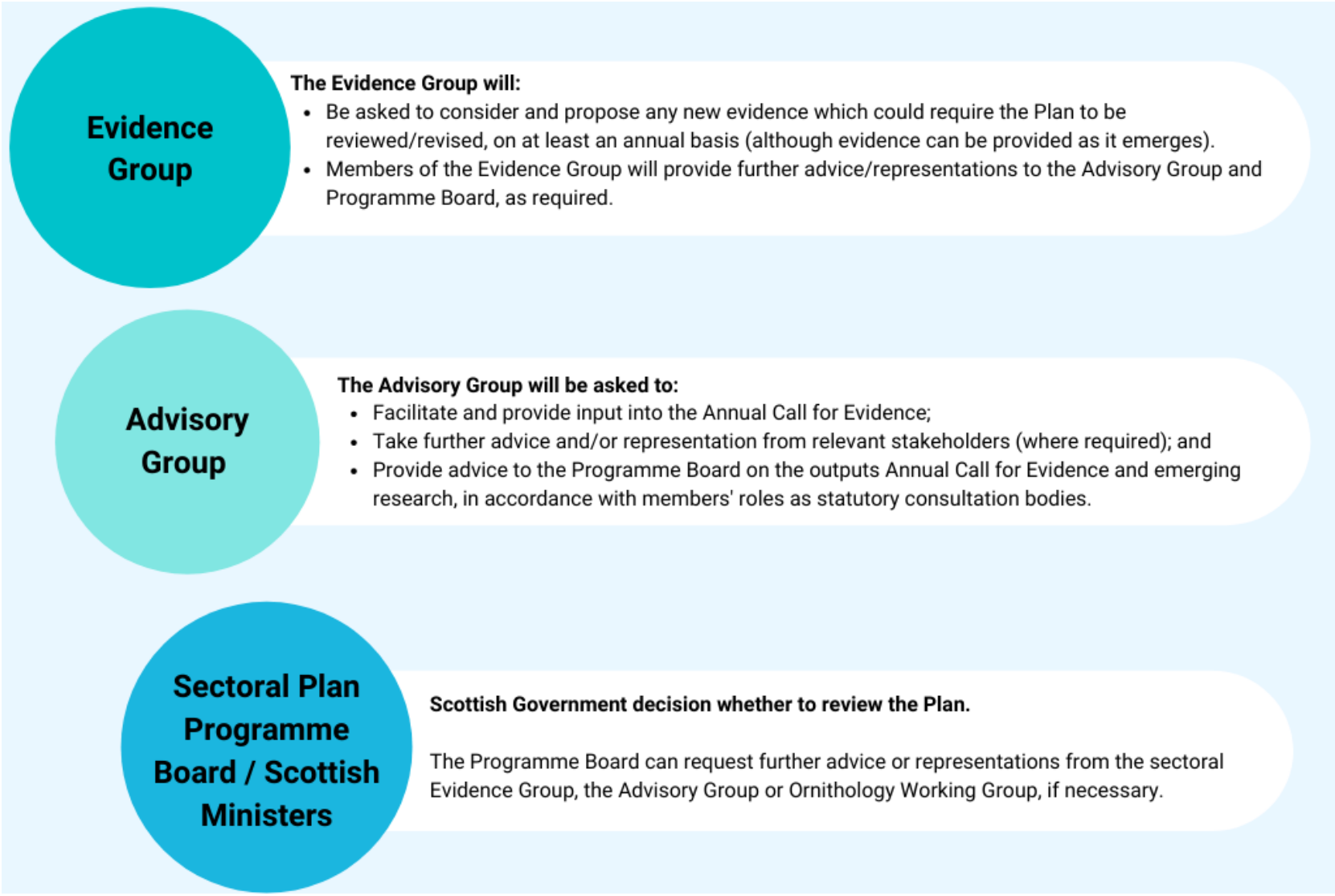


Figure 4 Governance structure - roles and responsibilities

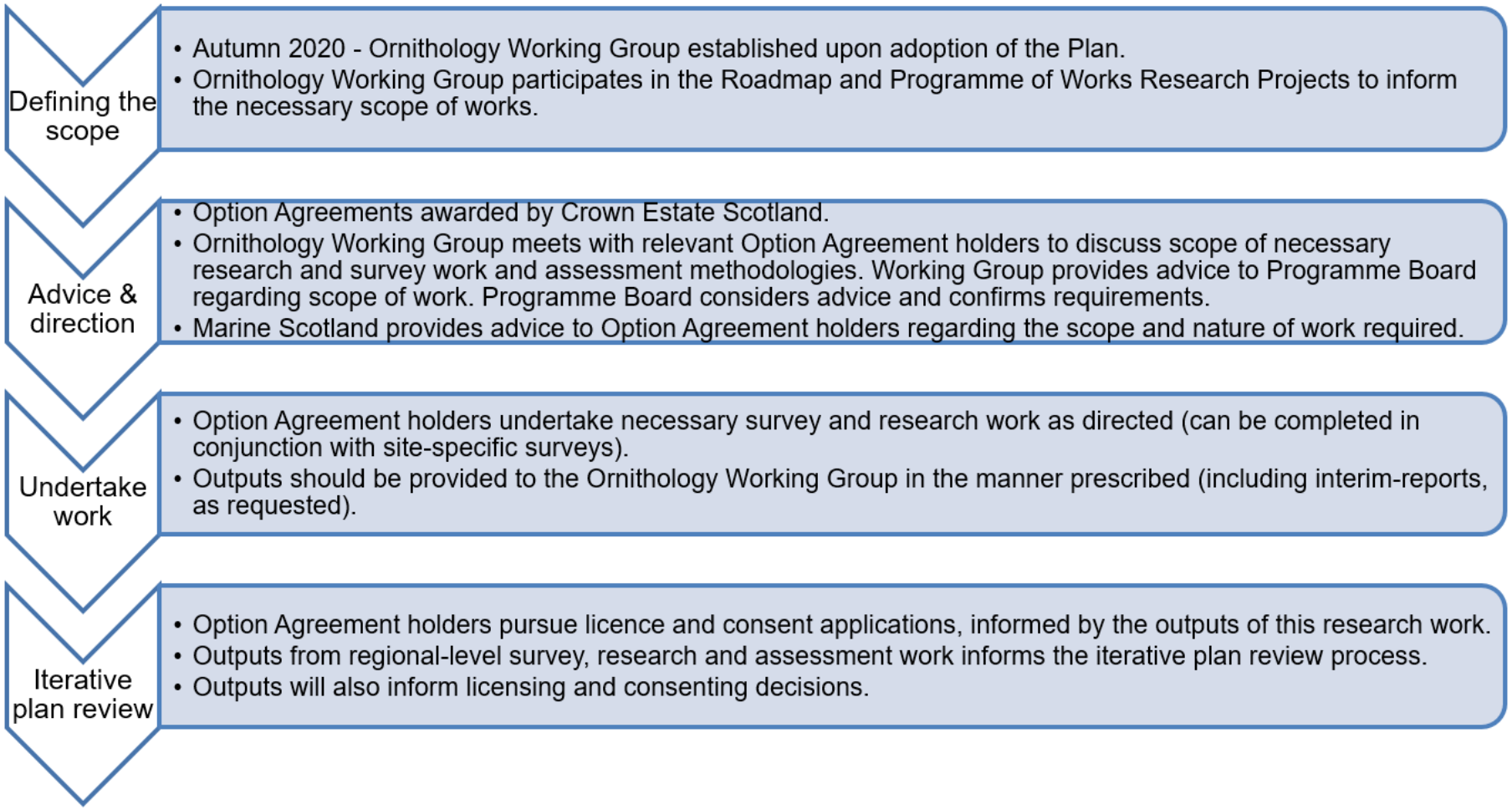


Figure 5 Regional Survey Requirements (Plan Options E1 and E2) - Process

E.3 Iterative plan review process

The iterative plan review process has been implemented to allow for changes in the underpinning evidence base and the outcomes of ongoing/future research and monitoring programmes to be considered and incorporated into the Plan. With each iteration of the Plan, understanding about relevant issues and risks will be progressively enhanced, as ongoing research and monitoring programmes provide further information about species' sensitivities, the effectiveness of mitigation measures and empirical data re: impacts.

The iterative plan review process also provides an important avenue for collaboration between governmental bodies, non-governmental bodies and industry on research issues and the determination of a consistent and comprehensive evidence baseline to inform decision-making processes at both strategic and project levels.

New evidence and data which could affect the implementation of the Plan may be the result of technological advances, scientific evidence, project monitoring and the result of project-level assessment. The spatial context for the Plan may change as development progresses and this changing context will need to be taken account of within future iterations of the Plan.

The Plan will be subject to an initial biennial review once adopted (i.e. next anticipated October 2022). This timetable may, however, be amended if there is sufficient justification to do so (for example, the intention to undertake a further commercial-scale seabed leasing round prior to this date). The biennial review will be supplemented by any information or evidence submitted by the Sectoral Evidence Group, to identify new and relevant information or evidence which may have a bearing on the Plan, on a regular basis. Members of the Sectoral Evidence Group, Technical Advisory Group and Programme Board will be able to provide relevant representation/evidence as it becomes available for consideration.

There is no expectation that the review process will alter the Plan Options, but it will guide the scale, extent and location of developments within the Plan Option boundaries. With each iteration of the Plan, understanding about the relevant issues and risks will be progressively enhanced, as ongoing research and monitoring programmes provide further information about species sensitives, the effectiveness of mitigation measures and empirical data re: impacts.

In the event that Scottish Ministers determine that the Plan should be fully reviewed, further assessment and consultation may be required. It is likely that this would be done in a manner similar to this process, but this will be confirmed at the appropriate juncture.

E.3.1 Iterative plan review – key steps

Section 11.5 of the Habitats Regulations Appraisal provided an outline of the proposed iterative plan review cycle for the first two years following adoption of the Plan. The key steps identified are outlined below:

Table 8 Iterative plan review – Key steps (Years 1 and 2)

Creating and updating the Project Impacts and Mitigation Evaluation Framework
Identifying high priority research projects to fill knowledge gaps and further the evidence base for decision-making. The outputs from the programme will be used to update project level impacts and mitigation measures (see further, Table 2, J1 and J2 of the HRA Report) as appropriate. The framework identifies all extant projects and compilation of key documents in a single location. This will assist with project implementation and development by alerting all interested parties to the key issues and opportunities which exist.
Project Assessment and Review (process)
As individual project-level Environmental Impact Assessments, Habitats Regulation Appraisal and Appropriate Assessments are undertaken, these documents will be collated and reviewed on an on-going basis. Acknowledgement will continue to be given to those assessments which have already been completed for constructed/consented projects.
Project Monitoring and Review (process)
As projects are consented and move forward, there will be the completion, collation and dissemination of project-level monitoring (across a range of receptors). This will include monitoring work undertaken for projects emerging from the Plan, but also other UK and European projects. It is envisaged that there will be collaboration between developers and regulators and that, as often as possible, there would be integrated work taken across sectors and projects. Mechanisms for such collaboration already exist via ORJIP, KTN, OWiX, PRIMaRE, the Habitats Directive Implementation Review (England) and Marine Scotland's ongoing strategic research.
Project Mitigation and Review (process)
Directly accompanying the monitoring review, there should be an evaluation of the efficacy of established mitigation measures. Research is currently being undertaken by Marine Scotland, Crown Estate Scotland, Moray Firth Regional Advisory Group and Forth and Tay Regional Advisory Group into the effectiveness of mitigation measures and such reviews will provide a valuable contribution to this part of the iterative plan review process.

Progression of strategic-level monitoring and research (process)
Alongside project-level work, strategic-level work will seek to address identified gaps in understanding. Particularly in relation to aspects such as seabird and cetacean distribution, collision mortality of seabirds, migratory pathways, seabird behaviour at sea and seabird body-mass survival rates. These topics are being progressed through Marine Scotland via the ScotMER programme.
Review gaps in understanding
Building on the reviews of the above, there will be an evaluation of the gaps in understanding and of progress made to address these gaps.
Review status of future projects in the context of research and planning developments
Regular reviews will be taken about future projects to be implemented and the need for Plan revisions. These reviews will be based on the above information and will also take into account marine spatial planning requirements, ongoing industry-led research, as well as future marine protected areas (or other designations). These reviews will also consider any legislative, regulatory or policy developments relevant to the Plan (e.g. Climate Change and renewable energy generation targets, net-zero ambitions). If required, revisions may be made to the Plan at an early point in the iterative plan review cycle.

E.3.2 Annual Forum (now Sectoral Evidence Group)

The HRA Report stated that an Annual Forum to consider emerging evidence and research and any regulatory/legislative/policy updates would be held. This function will now be facilitated via the 'Sectoral Evidence Group', to minimise the resourcing burden for stakeholders. The Sectoral Evidence Group will form a key part of the iterative plan review process and an annual call for representation/evidence will be implemented.

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 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 considered as 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 this stage.

Members of the two Steering Groups formed to support the planning process will form the Sectoral Evidence Group which will 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.

Those organisations that are on the Technical Advisory Group will not also be on the Sectoral Evidence Group.

In addition, the chairs of the ScotMER Receptor-Specific groups and Regional Marine Planning Partnerships would be approached to provide any relevant evidence or advice. Local authorities would also be contacted. 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 SMP at this juncture (e.g. earlier than the planned review at Year 2) or whether the SMP 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 SMP.

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