



Chapter 17

Summary of the Mitigation Measures

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17 Summary of the Mitigation Measures

17.1 Introduction

1. This chapter of the EIA Report presents a summary of the mitigation measures identified within each of the technical assessment chapters (Chapters 7 to 15). Mitigation has been suggested for those impacts considered to be of moderate or major significance (refer to Chapter 6: EIA Methodology). For these significant effects, appropriate mitigation is identified in order to reduce the potential effect to a not significant level. Where, with the application of mitigation, this does not result in a not significant effect, further proposals are made to address this.
2. Three levels of mitigation are established:
 - Embedded mitigation – Through the iterative EIA process and in light of the findings of the Original EIA and subsequent consent determination process, NnGOWL has identified a variety of measures that have been ‘embedded’ into Project design;
 - Anticipated consent condition commitments – Various conditions were applied to the Originally Consented Project. NnGOWL recognises that MS-LOT may wish to apply similar conditions to the new consents and expects these to reflect the main requirements of the conditions attached to the Originally Consented Project; and
 - In some instances, the EIA process may identify effects that are considered significant and for which additional mitigation measures are required.
3. Where relevant on a chapter-by-chapter basis, the three levels of mitigation are summarised in the following sections.
4. For additional information on the impact assessment criteria, each of the impact assessments and additional detail on the suggested mitigating measures and conclusions, refer to the appropriate chapter within this EIA Report.
5. Certain potential effects have been minimised through the adoption of embedded mitigation measures during the design stage for a number of topics, for example the use of scour protection to minimise potential impacts on physical processes. Further information on embedded mitigation is provided both in this chapter and in the individual technical assessments within this EIA Report. Where appropriate, monitoring recommendations are also described below.

17.2 Fish and Shellfish Ecology

17.2.1 Mitigation

6. The assessment of impacts, both in isolation and cumulatively, on Fish and Shellfish receptors as a result of the construction, operation and decommissioning of the Project are predicted to be of minor or negligible significance and therefore not significant in EIA terms. Based on the predicted effects it is concluded that no specific mitigation is required beyond the embedded mitigation.
7. The embedded mitigation has included:
 - Inter-array, interconnector and Offshore Export Cables will be suitably buried (to a maximum of 3 m) or will be protected by other means when burial is not practicable. This will reduce the potential for effect and exposure of electromagnetically sensitive species to the strongest electromagnetic fields (EMF);

- To minimise the extent of any unnecessary habitat disturbance, material displaced as a result of cable burial activities will be back filled, where necessary, in order to promote recovery; and
 - Cable specifications will be used that reduce EMF emissions as per industry standards and best practice such as the relevant IEC (International Electrotechnical Commission) specifications.
8. A number of consents conditions were applied to the Originally Consented Project and NnGOWL anticipate similar conditions relating to:
- Piling Strategy - Setting out, for approval, the pile driving methods, in accordance with the Application and detailing associated mitigation incorporating data collected as part of pre-construction survey work to demonstrate how the risk to species will be managed;
 - Cable Plan – Setting out, for approval, in accordance with the application and detailing routing considerations, including environmental sensitivities based on pre-construction survey data, and any relevant mitigation ensure all relevant environmental risks associated with cable installation and operation are managed in respect of fish receptors;
 - Environmental Management Plan – Setting out, for approval, the over-arching environmental management procedures that will be implemented across the Project to minimise the risk to environmental receptors from, for example, potential pollution, introduction of non-native species, and dropped objects;
 - Project Environmental Monitoring Programme – Setting out, for approval, the proposed environmental monitoring programme, to include as relevant and necessary the monitoring of sandeels, marine fish and diadromous fish;
 - Participation in the Forth and Tay Regional Advisory Group (FTRAG) – Participation in the FTRAG with respect to monitoring and mitigation of diadromous and commercial fish;
 - Participation in the Scottish Marine Environment Group (SSMEG) – Participation in the SSMEG with respect to monitoring and mitigation of diadromous and commercial fish; and
 - Participation in the ‘National Research and Monitoring Strategy’ for Diadromous Fish - Engage with and participate in the delivery of the strategic salmon and trout monitoring strategy at a local level (the Forth and Tay).
9. No additional mitigation measures are applicable in the context of fish and shellfish ecology.

17.2.2 Monitoring

10. Within Chapter 7: Fish and Shellfish Ecology there are a number of acknowledged uncertainties in the understanding of the particle motion component of underwater noise and the effects of particle motion arising from activities such as pile driving on fish and shellfish species and the lack of standardised modelling techniques or clear thresholds of effects for key species inevitably means that uncertainties remain.
11. Many of the uncertainties with particle motion relate to the fundamental understanding of the effects on fish and shellfish, which require ongoing academic research initiatives, which would lie out with the role of monitoring in a project-specific licensing context. However, where the Project is able to make some contribution to the broader strategic understanding of the issue it will seek to do so and through ongoing discussions with key stakeholders.

17.3 Marine Mammals

17.3.1 Mitigation

12. The embedded mitigation is as follows:

- Pile driving - Pile driving will be undertaken using the lowest possible hammer energy. This will reduce the area of potential impact from noise on marine mammals and their prey. Pile driving will commence by using a lower hammer energy and slowly, over a period of time, ramp-up to a maximum hammer energy (soft-start procedures).

13. This reduces the duration at which marine mammals will be impacted by potentially significant levels of noise and provides time for them to leave the area in order to avoid possible risk of physical injury; and

14. In terms of consent condition commitments, a number of those relating to fish and shellfish ecology apply equally to marine mammals, namely:

- A Construction Method Statement (CMS) will provide details of the finalised construction methods and set out the construction procedures and good working practices to be used. The CMS will be submitted for approval at least six months prior to the commencement of works.
- Prior to any activities an Environmental Management Plan (EMP) will be submitted to the Scottish Ministers within which details of the planned mitigation and monitoring to be undertaken will be presented. The mitigation measures identified within the PEMP will be developed and agreed with Marine Scotland and SNH prior to the start of construction activities.
- Piling Strategy;
- Project Environmental Monitoring Programme; and
- Participation in SSMEG and FTRAG.

15. In addition, the following consent condition commitments are anticipated:

- Noise registry - Prior to the commencement of piling activities the proposed date(s), location(s) and nature of the piling activities undertaken must be reported. In the event piling is to be carried out for more than 10 consecutive days, submit quarterly noise registry reports; and
- Vessel Management Plan - Requires details of the vessels to be used and working practices to reduce the use of ducted propellers.

16. No significant likely significant effects have been identified and require defined mitigation measures, however potential additional mitigation measures that could be included to reduce not significant, potential effects further and their likely effectiveness are described below:

- Use of a Marine Mammal Observer(MMOB) and of Passive Acoustic Monitoring (PAM) are recognised to be suitable mitigation in ensuring marine mammals are not present in an area where they could be at risk of traumatic physical injury and, in the case of dolphins, PTS;
- The use (and operating requirements) of any Acoustic Deterrent Device (ADD) will be discussed with MS-LOT and SNH to determine whether this will need to be deployed or not. If ADD are required, it will be operated at the pile driving location for a period of time, typically approximately 20 minutes prior to the start of pile driving. It will be turned off once pile driving has started.

17.3.2 Monitoring

17. A detailed monitoring programme will be developed through consultation with MS-LOT and SNH. NnGOWL will also participate in regional and national fora such as the Forth and Tay Regional Advisory Groups (FTRAG) and the Scottish Strategic Marine Environment Group (SSMEG), through which a strategic monitoring plan will be developed.
18. At least six months prior to the start of the development a PEMP will be submitted to the Scottish Ministers within which details of the planned monitoring to be undertaken will be presented. A Marine Mammal Monitoring Plan (MMMP) will be developed and agreed with MS-LOT and SNH prior to the start of construction activities.
19. Details of the monitoring that could be undertaken are yet to be confirmed. However, potential monitoring could include:
 - Measuring sound levels during pile driving activities. This would help improve our understanding of the sound levels produced from pile driving.
 - Monitoring the responses of marine mammals to pile driving noise. The species that effective monitoring could be undertaken and the methods to be used will be agreed with MS-LOT and SNH. However, it is envisaged that monitoring the responses to pile driving on bottlenose dolphins and harbour porpoise could be undertaken through the use of passive acoustic monitoring. This could improve our understanding of the potential impacts on marine mammals and confirm the predictions made within the EIA Report.
20. The final monitoring programmes will be developed following consultation with stakeholders and subject to approval with MS-LOT.

17.4 Ornithology

17.4.1 Mitigation

21. Embedded mitigation comprises the following:
 - Number of turbines:
 - The number of turbines was reduced from a maximum of 125 at the time of the Original Application to a maximum of 90 at the time of the addendum and 75 for the Original Consents. The reduced turbine numbers and increased spacing was anticipated to reduce the risk of collision, displacement and barrier effects on birds; and
 - The design evolution of the Project has continued and the number of turbines has been further reduced to a maximum of 54 turbines for the Project EIA Report.
 - Rotor Height:
 - Increasing the turbine rotor height reduces the risk of collision for a number of seabirds, many of which rarely fly above about 25m but occur regularly at around 20m. Therefore an increase in turbine height can cause a reduction in the number of predicted collisions; and
 - Minimum rotor height was increased from 26m above LAT in the Original Application to 30.5m above LAT in the Addendum. The design evolution of the Project has continued and the minimum rotor height has been further increased to a minimum rotor height of 35m above LAT and the assessments are on this basis.

22. No specific consent condition commitments are made, nor are any additional mitigation measures proposed.

17.4.2 Monitoring

23. Following consent, a Project Environmental Monitoring Plan (PEMP) will be developed and agreed with MS-LOT, in discussion with the Forth and Tay Regional Advisory Group (FTRAG). Monitoring will be required to validate the findings of the EIA.
24. To date, there have been some high level discussions regarding future monitoring requirements for NnG. An ornithology sub-group for the FTRAG has been established, comprising representatives from NnG, Inch Cape, Seagreen, Marine Scotland, SNH, JNCC and RSPB. Initial discussions considered where monitoring should focus, in terms of research questions, key species, SPAs and effects to be addressed.
25. The above discussions will continue and will inform the selection of the most appropriate monitoring methods. Methods selected will be subject to regular review, as technologies improve and as information from monitoring programmes at other offshore projects is published, together with results from industry-led research projects such as the Offshore Renewables Joint Industry Programme (ORJIP).
26. At this stage it is considered likely that monitoring will focus on collision/avoidance, displacement/barrier, as well as population-level effects. Various methods and technologies are available to monitor displacement/barrier, including GPS tagging, radar, boat-based and digital aerial surveys. For monitoring collision/avoidance, there is the potential to use turbine mounted cameras, radar, human observers and laser range finders. In addition, if looking at population effects, it would be beneficial to have a better understanding of survival and productivity rates for breeding adults at these SPA colonies.
27. The different potential methods are still being considered, and a future decision on a monitoring system will be determined depending on the most appropriate technology available at the time of selection. There is the potential for collaboration with other developers, government and NGOs, which could be progressed via the PEMP or separate studies.

17.5 Commercial Fisheries

17.5.1 Mitigation

28. Embedded mitigation is included as follows:
- Establishment of and participation in a working group to assist with the following:
 - Dissemination of Project information;
 - Application of safety zones and advisory safe passing distances and implications for fisheries;
 - Navigation of Project construction and maintenance works vessels to and from the site (i.e., agreement of transit lanes to minimise interference to fishing activities, agreement for 'holding' areas for vessels in the event of bad weather);
 - Procedures in the event of interactions between Project construction and fishing activities (i.e. claims for lost and/or damaged gear);
 - Burial and protection of inter-array and Offshore Export Cables;
 - Removal of seabed obstacles during and post-construction; and
 - Post-construction surveys and seabed rectification procedures.
 - All infrastructure installed during the construction phase will be marked and lit, in line with standard industry practice, and relevant information will be distributed to fishermen through the agreed channels.

- Cables will be buried to a maximum depth of 3 m where it is reasonably practicable to do so. In instances where adequate burial cannot be achieved then the developers will seek to install cable protection.
 - Over trawl surveys will be carried out on the Offshore Export Cable and inter-array cables where cable protection has been required to ensure that the protection scheme has been successful.
29. A number of consent conditions were attached to the Consents to manage the environmental risk associated with the Originally Consented Project. Those consent condition commitments that are relevant to the potential impacts on commercial fisheries comprise:
- Commercial Fisheries Mitigation Strategy - Setting out, for approval, the mitigation strategy for each commercial fishery in the area that the Scottish Ministers agree may be adversely affected by the Project;
 - Fisheries Liaison Officer – Appointment of a Project Fishing Liaison Officer (FLO) to establish and maintain effective communications with fishery industry;
 - Cable Plan – Setting out, for approval, the following measures to manage the risk to commercial fisheries:
 - Details of the location and cable laying techniques for the cables;
 - The results of survey work (including geophysical, geotechnical and benthic surveys) which help inform cable routing;
 - Technical specifications of cables, including a desk based assessment of attenuation of electro-magnetic field strengths and shielding;
 - A burial risk assessment to ascertain burial depths and, where necessary, alternative suitable protection measures;
 - Methodologies for over trawl surveys of the cables through the operational life of the wind farm where mechanical protection of cables laid on the sea bed is deployed; and
 - Methodologies for cable inspections with measures to address and report any cable exposure.
 - Commercial Fisheries Working Group – Continued membership of, and participation in the Forth & Tay Commercial Fisheries Working Group to assist with the following:
 - Dissemination of Project information;
 - Application of safety zones and implications for fisheries;
 - Navigation of Wind Farm Area construction and works vessels to and from the site (i.e., agreement of transit lanes to minimise interference to fishing activities, agreement for 'holding' areas for vessels in the event of bad weather);
 - Procedures in the event of interactions between Wind Farm Area construction and fishing activities (i.e. claims for lost and/or damaged gear);
 - Burial and protection of inter-array, inter-connector and export cabling;
 - Removal of seabed obstacles during and post-construction; and
 - Post-construction surveys and seabed rectification procedures.
 - Navigational Safety Plan – Navigational Safety Plan: Setting out, for approval, the navigational safety measures to mitigate navigational risk to commercial fisheries operating in the area;
 - Lighting and Marking Plan – Lighting and Marking Plan: Setting out, for approval, the navigational lighting strategy to be installed at the site to ensure safe marking of the structures and Development Area to mitigate the navigational risk to commercial fisheries operating in the area; and
 - Monitoring and Mitigation - Monitoring and mitigation:

- Participation in the Forth and Tay Regional Advisory Group (FTRAG) established by the Scottish Ministers for the purposes of advising the Scottish Ministers on monitoring and mitigation of, among other things, commercial fish.
- Participation in the Scottish Strategic Marine Environment Group (SSMEG) established by the Scottish Ministers for the purposes of advising the Scottish Ministers on monitoring and mitigation of, among other things, commercial fish.

30. Significant effects have been identified in relation to potential loss of earnings and loss of the ability to carry out normal working procedures, through reduced access to or exclusion from established fishing grounds or displacement leading to gear conflict and increased fishing pressure on adjacent grounds. These are economic issues and therefore the appropriate means to address them is through commitment to disturbance payments. With respect to any justifiable disturbance payment, the procedures as outlined in the FLOWW guidance documents (2014 and 2015), will be followed wherever possible.

17.5.2 Monitoring

31. No monitoring in relation to commercial fisheries is proposed within this EIA Report.

17.6 Shipping and Navigation

17.6.1 Mitigation

32. Embedded mitigation is as follows:

- Appropriate liaison to ensure information on the construction, operation and decommissioning of the Offshore Wind Farm is circulated in Notice to Mariners, Kingfisher Bulletin, Navigation Information Broadcasts and other appropriate media. As part of the Notice to Mariners process the information will be supplied to Imray publications;
- While construction work is in progress, Admiralty Charts will provide a note over the Wind Farm Area stating as such including position of construction buoyage;
- The Project construction, operation and decommissioning works will be marked in line with IALA-O136, and as agreed with NLB, MCA and the Civil Aviation Authority (CAA);
- Compliance with relevant MCA Guidance (MGN 543 and Annexes);
- Creation of an ERCoP based on the MCA template and Project Safety Management Systems (SMS), in consultation with the MCA. Procedures will be followed in the event of an emergency situation during the construction phase;
- The onshore operations base will also serve as a Marine Control Centre that will monitor vessel activity;
- Construction safety zones of 500 m around major activities will be in place to exclude vessels not associated with the construction works for the Offshore Wind Farm;
- The Project will be marked on admiralty charts;
- Lowest point of rotor sweep is a minimum of 35m above LAT which is in line with the MCA and RYA recommendations; and
- Cables will be protected appropriately from fishing and anchoring and monitored to ensure burial / protection and seabed stability is maintained.

33. A number of consent conditions were attached to the Consents to manage the environmental risk associated with the Originally Consented Project. NnGOWL anticipate that any future consents issued to the Project may incorporate conditions similar to the following to manage the risk to shipping and navigation commensurate with the Project design envelope where it remains necessary to do so:

- Construction Method Statement - Requires the final construction methods to be set out for approval to ensure that they remain consistent with the methods assessed in the Project ES and to ensure appropriate construction management taking into account mitigation measures to protect the environment and other users of the marine area;
- Development Specification and Layout Plan – Setting out, for approval, the final design and layout of the Project to ensure it remains consistent with the design assessed in the ES as relevant to shipping and navigation;
- Vessel Management Plan – Setting out, for approval, the number and types of vessels, vessel management practices, port and harbour locations, and transit routes relevant to the Project;
- Navigational Safety Plan – Setting out, for approval, the navigational safety measures to mitigate navigational risk of other marine users operating in the area;
- Cable Plan – Setting out, for approval, the location and installation methods for the cables (including burial) to ensure they remain consistent with the installation process assessed in the ES, as relevant to Shipping and Navigation;
- Lighting and Marking Plan – Setting out, for approval, the navigational lighting strategy to be installed at the site to ensure safe marking of the structures and Development Area to mitigate the navigational risk to other marine users;
- Navigational Safety (Construction):
 - Notify the UKHO prior to the commencement of construction to facilitate the promulgation of maritime safety information and updating of nautical charts and publications through the national Notice to Mariners System.
 - Issue local Notice to Mariners to ensure local mariners, fishermen’s organisations and HM coastguard are aware of the Licensable Marine Activity.
 - Consult with local harbour masters as appropriate.
 - Ensure that details of the works are promulgated in the Kingfisher Fortnightly Bulletin [KIS-ORCA], prior to the commencement of the works to inform the Sea Fish industry of vessel routes, timings and the locations of Project Activities
- Markings, lighting and signals of the Works (Construction, Operation and Maintenance) – Ensure that the Project is lit in accordance with the requirements of the relevant statutory stakeholders including marking of the site with appropriate construction buoyage during construction and continued lighting of the site following completion of construction as required by the MCA and NLB;
- Markings, lighting and signals of the Works (Construction) – Ensure that any vessels engaging in the work are marked in accordance with the International Rules for the Prevention of Collisions at Sea if under way and in accordance with the UK Standard Marking Schedule for Offshore Installations if secured to the seabed;
- Navigational Safety (Operation):
 - Ensure appropriate notifications are made following completion of the works to all relevant stakeholders including UKHO, the Maritime Rescue and Coordination Centre Aberdeen and all mariners and fishermen’s organisations;
 - Ensure appropriate notifications are made through the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry;
- Marine Pollution Contingency Plan - Setting out, for approval, relevant management measures to mitigate risk of accidental spills and subsequent remedial action, response measures relating to spills and collision incidents and practices used to refuel vessels at sea if relevant.

34. NnGOWL propose to consult with the MCA and NLB and other stakeholders to identify appropriate further mitigation as required. Further mitigation may include additional aids to navigation to assist internal navigation and additional means of communication to assist third parties throughout the

operational phase of the Project, such as, marine coordination facilities, offshore VHF aerials and AIS transceivers/receivers.

17.6.2 Monitoring

35. Rerouting has been identified as potentially occurring as a result of the Project, however it is proposed that marine traffic is monitored via AIS post-construction to ensure actual changes in shipping behaviour resulting from the Wind Farm Area can be fully understood. This will serve to confirm any deviated routing and will also provide an indication of any vessel activity occurring within the Wind Farm Area.

17.7 Military and Civil Aviation

17.7.1 Mitigation

36. Embedded mitigation has been included as follows:

- Appropriate liaison to ensure information on the construction of the wind farm is circulated in Notice to Airman (NOTAM) and other appropriate media;
- Aviation Chart Marking;
- Regulation and Control (AIRAC) system;
- Lighting and Marking Plan, including operational lighting in line with CAP 393 (CAA, 2017) and CAP 437 (CAA, 2016a), and as agreed with the CAA;
- The Project will be designed as per MGN 543, including Annex 5;
- Information will be circulated to relevant military and aviation stakeholders including NATS and MOD; and
- Creation of an Emergency Response Co-operation Plan (ERCoP) based on the Maritime and Coastguard Agency (MCA) template and site Safety Management Systems (SMS).

37. Consent conditions relating to the following are anticipated, reflecting the issues considered in the Original Consents:

- Lighting and Marking Plan – Setting out for approval, the final lighting and marking of structures to ensure aviation safety at the Offshore Wind Farm;
- Air Traffic Control Mitigation (ATC) Scheme – Setting out, for approval, an ATC scheme to mitigate the adverse impacts of the Project on the air traffic control radar at Leuchars Station and the operations of the MOD; and
- Provision of Turbines and Construction Equipment above 150 m LAT - Provide the positions and maximum heights of the turbines and construction equipment above 150 m LAT and any offshore substation platform to the United Kingdom Hydrographic Office (UKHO) for aviation and nautical charting purposes to ensure aviation and navigational safety.

38. A number of additional mitigation measures have been identified to further reduce or manage significant effects:

- Implementation of an agreed mitigation strategy for Leuchars Station PSR. This involves an Airspace Change Proposal for the introduction of a TMZ over the Wind Farm Area. The Airspace Change occurs in two stages; stage one includes radar blanking of the Leuchars Station PSR; stage two is the introduction of the TMZ covering the Wind Farm Area. A TMZ will also be in place for Inch Cape Offshore Wind Farm and is also anticipated to be required for the Seagreen offshore wind farms. The TMZ will remain in place until an enduring technical solution is agreed. A long term 'in-fill' solution may involve the removal of PSR data where radar clutter is anticipated in the vicinity of the

wind turbines, and replacing it with an alternate radar source which is not affected by radar clutter;

- For the Leuchars Station PAR, NnGOWL has committed to not siting any wind turbines within the PAR 'Protection Zone' (Safeguarded Area), including turbine blades, to remove the potential for radar detectability of any element of a turbine;
- Engagement in discussions with the MOD (DIO) regarding the implementation of a NAIZ for RRH Brizlee Wood and RRH Buchan ADRs; and
- Implementation of similar mitigation identified for RRH Brizlee Wood and RRH Buchan ADRs to remove radar impact upon military PEXA activity within TRA 007A.

17.7.2 Monitoring

39. No monitoring in relation to military and civil aviation is proposed within this EIA Report.

17.8 Cultural Heritage

17.8.1 Mitigation

40. Embedded mitigation is incorporated and includes:

- Analysis of pre-construction survey data to refine the identified potential marine archaeology assets at infrastructure locations. Appropriate micro-siting allowance for identified assets will be agreed in consultation with HES;
- Micro-siting allowance and exclusion zones will be detailed in the WSI. This will reduce any potential impacts on marine archaeology;
- Mitigation relating to effects of the Offshore Wind Farm on the setting of cultural heritage receptors will include:
 - Turbines will all be of similar dimensions for hub height and blade tip level subject to turbine and substructure design and installation specification;
 - Turbines will all be pale grey in colour (Light Grey RAL 7035) with a semi-matt finish; and
 - The design analysis undertaken as part of the SLVIA assessment provides 'design objectives' will be used to refine the appearance of the final wind farm layout. Detailed post-consent siting of the offshore turbines will be driven by a range of physical and environmental constraints including localised geological conditions, ecology, aviation, navigation, wind resource and marine archaeology.

41. Conditions relating to the following were attached to the Original Consents and NnGOWL anticipate similar conditions in respect of the Project:

- Environmental Management Plan - Setting out, for approval, an EMP detailing a WSI to be followed in the event of an archaeological discovery; and
- Marine Archaeology Reporting Protocol - Setting out, for approval, procedures to follow on discovery any marine archaeology during the construction, operation, maintenance and monitoring of the Project.

42. Only one significance effect on one receptor has been identified and this relates to cumulative effects upon the Isle of May Priory (turbine height and layout in relation to the setting of onshore receptors). Setting-related cultural heritage impact can be dealt with in a similar way to landscape and visual effects, where mitigation relies on post-consent design processes that may help to reduce the levels of the identified effects, and it is at this point that mitigation to reduce the impact should occur.

17.8.2 Monitoring

43. The monitoring and enforcing of AEZs around archaeology and cultural heritage receptors will be an important part of the mitigation strategy for all phases of construction, operation and decommissioning of the Project.

17.9 Seascape, Landscape and Visual Impact Assessment

17.9.1 Mitigation

44. Significant effects resulting from the presence of the Offshore Wind Farm and from aviation and navigation lighting have been predicted, particularly in relation to coastal character and visual amenity in certain areas of east Fife, north-east Lothian and in the wider area.
45. Traditional methods of landscape and visual mitigation, such as screen planting, are ineffective for offshore wind farm development. Mitigation for wind farms is generally limited to the reduction of potential direct effects through detailed siting, and the reduction in adverse aesthetic effects through wind farm design. For the significant effects identified, mitigation of landscape and visual effects will rely on post-consent design processes that may help to reduce the levels of the identified effects.
46. Detailed design of the aviation and navigation lighting will also take place post-consent, in line with the requirements of the relevant statutory authorities. It is possible that the lights installed may be less bright than those modelled and assessed in this EIA Report.
47. Embedded mitigation has included an analysis of alternative layouts which has provided 'design objectives' that can be considered in order to refine the appearance of the final layout.
48. Consent conditions are expected to relate to:
- Development Specification and Layout Plan - Setting out, for approval, the final design and layout of the Project to ensure it remains consistent with the design assessed in the ES as relevant to SLVIA;
 - Design Statement - Providing representative visualisations of the Offshore Wind Farm based on the final Development Specification and Layout Plan. The requirements for the design statement will be discussed with MS-LOT and relevant stakeholders following award of consent; and
 - Lighting and Marking Plan - Setting out, for approval, how the Offshore Wind Farm will be lit and marked in accordance with the current aviation and navigation policy and guidance.
49. No additional mitigation measures are proposed.

17.9.2 Monitoring

50. No monitoring in relation to seascape, landscape and visual impacts is proposed within this EIA Report.

17.10 Socioeconomics

17.10.1 Mitigation

51. The effects on socio-economic receptors as a result of the construction, operation and decommissioning of the Project are predicted to be of beneficial moderate and minor significance. As none of the effects are adverse no specific mitigation is required in addition to the embedded mitigation already incorporated. The embedded mitigation is as follows:

- NnGOWL has interacted with the supply chain in the local study area. They have done this by:
 - Encouraging a competitive procurement process - To ensure strong local supply inclusion, NnGOWL has hosted numerous engagement events in partnership with local enterprise agencies;
 - Support new entrants - NnGOWL has sought to engage many new entrants to the offshore wind farm sector. Nearly one in two contractors who were approached for wind turbine generation and balance of plant procurement have been newcomers;
 - Improve awareness - NnGOWL has attempted to engage with local suppliers through a variety of events and partnerships:
- Since 2010, NnGOWL has undertaken an extensive programme of public exhibitions with attendance at 30 public community events;
- In collaboration with Scottish Enterprise, NnGOWL has hosted three supply chain events with tier-one contractors in Dunbar, Fife, and Dundee. There are plans to re-run such events in the near future alongside diversification events for the local fisherman and ex-RAF. They have also conducted regional roadshow events to promote opportunities; and
- NnGOWL are engaged with the Offshore Renewables Catapult, Universities and Skills Development Scotland to explore greater opportunities to engage with the local supply chain.

52. Unlike other topics within this EIA Report, expected consent conditions are not anticipated in relation to socio-economic effects. Similarly, no additional mitigation measures are proposed.

17.10.2 Monitoring

53. No monitoring in relation to socioeconomics is proposed within this EIA Report.