Bowdun Offshore Wind Farm, Offshore EIA Report

Volume 2, Chapter 15: Aviation and Radar

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Glossary

Defined Term	Definition
Additional Mitigation	Also referred to as secondary mitigation which is defined by The Institute of Sustainability and Environmental Professionals (ISEP) (formerly Institute of Environmental Management and Assessment (IEMA)) as: Actions that will require further activity in order to achieve the anticipated outcome. These may be imposed as part of the planning consent, or through inclusion in the Environmental Impact Assessmenr (EIA) Report (sic).
Applicant (the)	Bowdun Offshore Wind Farm Limited (BOWFL).
Array Area	The Array Area is the area in which the Offshore Generation Assets will be located.
Bowdun Offshore Wind Farm Limited (BOWFL)	A Special-Purpose Vehicle (SPV) (legal entity) for the purpose of developing the Project. BOWFL are the Applicant for the Offshore Application.
Civil Aviation Publication (CAP)	Guidance material and policies for the aviation industry, ensuring the safe conduct of aircraft operations. CAPs include detailed information on various aspects of aviation, such as procedures, standards, best practices, and regulatory requirements. They address both technical and operational matters.
Cumulative Effects	The effects of the Proposed Development assessed together with effects from the Onshore Infrastructure forming the Project as well as one or more different projects on the same receptor/resource.
Danger Area	Airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.
Effect	Term used to express the consequence of an impact i.e. the result of change or changes on specific environmental resources or receptors. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity of the receptor or resource in accordance with defined significance criteria.
Embedded Mitigation	Measures that are adopted as part of the Proposed Development and therefore assessed within the EIA. The proposed approach for the EIA for the Proposed Development is that Embedded Mitigation includes both primary mitigation and tertiary mitigation. These are defined by the ISEP as follows: Primary: Modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken. Tertiary: Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.
Environmental Impact Assessment (EIA)	Process for the assessment of likely significant environmental effects of a project on the physical, biological and human environment during construction, Operation and Maintenance (O&M) and decommissioning.

Defined Term	Definition
Environmental Impact Assessment Regulations (EIA Regulations)	Terminology used in this Offshore EIA Report to refer to three sets of regulations: • The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017; • The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and • The Marine Works (Environmental Impact Assessment) Regulations 2007.
Export Cable Corridor	The area seaward of Mean High Water Springs (MHWS) which connects the Array Area with the Landfall Area within which the Offshore Export Cables will be installed.
Helicopter Main Route Indicator (HMRI)	Used over the North Sea and in Morecambe Bay to provide a network of offshore routes utilised by civilian helicopters operating between the UK mainland and offshore installations
Icing Level	The level at which the air contains droplets of supercooled liquid water which results in icing conditions where aircraft lift characteristics can be adversely affected.
Impact	A change caused by an action that occurs during a project's lifetime.
Instrument Flight Procedure (IFP)	A published procedure used by aircraft flying in accordance with the instrument flight rules which is designed to achieve and maintain an acceptable level of safety in operations and includes an instrument approach procedure and a standard instrument departure.
Landfall	The area in which the Offshore Export Cables make landfall and is also the transitional area between the Offshore Transmission Assets and the Onshore Transmission Assets. Located in the Intertidal Area at Benholm.
Maximum Design Scenario (MDS)	The scenario within the design envelope likely to result in the greatest impact on a particular topic receptor, and therefore the one that should be assessed for that topic receptor.
Minimum Sector Altitude	The lowest altitude providing a minimum of 1,000 ft (300 m) clearance over all terrain and obstacles within a 25 nM (46 kM) radius of an airport.
Mitigation	Measures to avoid, prevent, reduce or control effects on the environment. See also definitions for Embedded Mitigation and Additional Mitigation.
Offshore Application	Term used to refer to the applications associated with the Proposed Development. The Applicant will apply for: • A Section 36 Consent under the Electricity Act 1989; and • Marine Licence(s) under Marine Scotland Act 2010 and Marine and Coastal Access Act 2009.
Offshore Environmental Impact Assessment (EIA) Report (hereafter, 'Offshore EIA Report')	Document prepared to report the findings of the EIA for the Proposed Development and produced in accordance with the EIA Regulations. The Offshore EIA Report is submitted to support the Offshore Application for the Proposed Development, and to comply with EIA Regulations.
Offshore Export Cables	Subsea cables used to transmit electricity generated offshore by the Wind Turbines from the OSPs to shore. The Transition Joint Bay (TJB) is the location where the Offshore Export Cables terminate, and the onshore cabling begins.

Defined Term	Definition
Offshore Generation Assets	The infrastructure of the Proposed Development required to generate electricity comprising of the Wind Turbines, Wind Turbine foundations and associated infrastructure e.g. IACs.
Offshore Infrastructure	All of the Offshore Infrastructure associated with the Proposed Development that is located seaward of MHWS, comprising the Offshore Generation Assets and the Offshore Transmission Assets.
Offshore Scoping Report	The report that presents the findings of the EIA scoping process undertaken for the Proposed Development with the purpose of obtaining a Scoping Opinion. The Offshore Scoping Report defines what is intended to be assessed and reported as part of the EIA.
Offshore Substation Platform(s) (OSPs)	OSPs comprise the support structure, topside and electrical components used for collecting and/or converting electricity generated by the Wind Turbines for transmission by the Offshore Export Cables.
Offshore Transmission Assets	The infrastructure of the Proposed Development required to transmit the generated electricity comprising of the OSPs, Offshore Export Cables and associated infrastructure up to MHWS.
Onshore Transmission Assets	The transmission infrastructure associated with the Project above MLWS which is subject to the Planning Permission in Principle (PPP) Application submitted to Aberdeenshire Council (REF: APP/2025/1952).
Operation and Maintenance (O&M)	The phase of the Proposed Development following completion of construction. This phase of development includes routine inspections, repairs and replacement of infrastructure and equipment (including Interconnector Cables and IACs), Scour Protection replenishment or replacement, major component replacement, painting and/or other coating works, removal of marine growth, and replacement of access ladders.
Practice and Exercise Area (PEXA)	Term used to describe an offshore area used by the military for practice and exercise drills, including submarine exercises and firing practice.
Pre-Application Consultation (PAC)	Pre-Application Consultation with communities and stakeholders with regard to the consent applications for the Project that meets the requirements of Marine Licensing (Pre-application Consultation) (Scotland) Regulations 2013.
Primary Surveillance Radar (PSR)	A radar system that measures the bearing and distance of targets using the detected reflections of radio signals.
Project (the)	An overarching term for the Bowdun Offshore Wind Farm (Bowdun OWF) comprising the offshore and onshore infrastructure required to generate and transmit electricity from the Array Area to the onshore GCP. The Project includes the Offshore Generation Assets, the Offshore Transmission Assets and the Onshore Transmission Assets.
Project Design Envelope (PDE)	A description of the range of possible elements that make up the design options for the Proposed Development under consideration when the exact engineering parameters are not yet known.
Proposed Development	Term used to define the Offshore Infrastructure associated with the Project seaward of MHWS for which consent is being sought. Further details of the parameters are included in Volume 1, Chapter 3: Project Description.

Defined Term	Definition
Scoping Opinion	A document produced by MD-LOT which is issued in response to submission and review of the Offshore Scoping Report. The Scoping Opinion is supported with feedback and advice from consultees, which details what is expected to be included in the Offshore EIA Report and what can be scoped out of the EIA process.
Section 36 Consent	Scottish Ministers' consent under Section 36 of the Electricity Act 1989 required to permit the generation and operation of an energy generation station
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Site Boundary	The boundary within which all elements of the Proposed Development will be located. The Site Boundary comprises the Array Area and Export Cable Corridor which ends at MHWS.
Study Area	For each environmental topic, the baseline environment will be characterised, and the potential environmental impacts will be described within a topic-specific study area. Specific study areas are defined for each topic and are based on the maximum spatial extent across which potential impacts of the Project may be experienced by the relevant receptors (i.e. Zone of Influence).
Transponder Mandatory Zone	A designated volume of airspace where aircraft are required to carry and operate a functioning transponder. This requirement enhances the visibility of aircraft to Air Traffic Control and other traffic, particularly in complex or busy airspace, for safety purposes.
Visual Flight Rules (VFR)	The set of rules that govern aircraft flying clear of cloud and in good visibility.
Wind Turbines	Structures comprising of a tubular tower, rotor blades, and a nacelle which houses the Wind Turbine generator.

Acronyms

Acronym	Definition
3-D NAIZs	3-Dimensional Non-Automatic Initiation Zones
AD	Air Defence
ANO	Air Navigation Order
APDO	Approved Procedure Design Organisation
ATC	Air Traffic Control
ATS	Air Traffic Services
BOWFL	Bowdun Offshore Wind Farm Limited
BOWL	Beatrice Offshore Wind Farm Limited
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CMS	Construction Method Statement
CNS	Communication, Navigation and Surveillance
DGC	Defence Geographic Centre
EIA	Environmental Impact Assessment
ERCoP	Emergency Response Cooperation Plan
HMRI	Helicopter Main Route Indicator
ICAO	International Civil Aviation Organisation
IFP	Instrument Flight Procedure
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
MAA	Military Aviation Authority
MCA	Maritime & Coastguard Agency
MDS	Maximum Design Scenario
MD-LOT	Marine Directorate-Licensing Operations Team
MGN	Marine Guidance Note
Mil AIP	Military Aeronautical Information Publication
MoD	Ministry of Defence
MRT	Multi-Radar Tracker
MSA	Minimum Sector Altitude
NATS	National Air Traffic Services
NAVAID	Navigation Aid
NLB	Northern Lighthouse Board
NOTAM	Notice To Aviation
NSVMP	Navigational Safety and Vessel Management Plan
OREI	Offshore Renewable Energy Installation
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm

Acronym	Definition
OWIC	Offshore Wind Industry Council
O&M	Operation and Maintenance
PAC	Pre-Application Consultation
PDE	Project Design Envelope
PEXA	Practice and Exercise Area
PSR	Primary Surveillance Radar
RAP	Recognised Air Picture
RLoS	Radar Line of Sight
RRH	Remote Radar Head
SAR	Search and Rescue
TMZ	Transponder Mandatory Zone
UK	United Kingdom
UXO	Unexploded Ordnance
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

Table of Units

Units	Definition
°	Degree
ft	Feet
km	Kilometre
m	Metre
nm	Nautical mile

15 Aviation and Radar

15.1 Introduction

15.1.1 This section of the Offshore Environmental Impact Assessment (EIA) Report, prepared by Coleman Aviation Limited, presents the assessment of the likely significant environmental effects on aviation and radar, that may potentially occur as a result of the Proposed Development during the construction, Operations and Maintenance (O&M) and decommissioning phases.

15.1.2 The assessment presented is informed by the following technical chapters and annexes:

- Volume 3, Technical Appendix 15.1: Aviation and Radar Technical Report; and
- Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport.

15.1.3 This Aviation and Radar Offshore EIA Report chapter:

- presents the existing environmental baseline established from desk studies and consultation with stakeholders;
- identifies any assumptions and limitations encountered in compiling the environmental information;
- presents the likely significant environmental effects on aviation and radar receptors arising from the Proposed Development, based on the information gathered and the analysis and assessments undertaken; and
- highlights any necessary monitoring and/or mitigation measures which could avoid, prevent, minimise, reduce or offset the possible environmental effects of the Proposed Development on aviation and radar.

15.2 Aviation and Radar Study Areas

15.2.1 The study areas for aviation and radar are shown in Figure 15.1 and are defined as follows:

Primary Aviation and Radar Study Area

15.2.2 The Primary Aviation and Radar Study Area is defined by a 9 nm (17 km) buffer around the Array Area in accordance with recommended consultation distances contained in Civil Aviation Publication (CAP) 764, (Civil Aviation Authority (CAA), 2016a). This enables identification of impacts on aviation receptors in the immediate vicinity of the Array Area including low-visibility helicopter operations to offshore installations (e.g. oil and gas platforms).

15.2.3 The Primary Aviation and Radar Study Area is illustrated in Figure 15.1.

Secondary Aviation and Radar Study Area

15.2.4 The Secondary Aviation and Radar Study Area is defined by the range of the aviation receptors; in particular Air Traffic Control (ATC) and Air Defence (AD) Primary Surveillance Radars (PSRs) which have the potential to be impacted by the Proposed Development. The Secondary Aviation and Radar Study Area is depicted in Figure 15.1 and covers potential receptors in the north of Scotland

that could potentially be affected by Wind Turbines located within the Array Area. Although the operating range of aviation radars can be up to 200 nm (370 km), it is only the radar coverage over the Array Area that needs to be considered, as the question of whether the Wind Turbines themselves are visible to radar is the determining factor relating to aircraft safety.

15.2.5 This Secondary Aviation and Radar Study Area also encompasses the Export Cable Corridor which enables any potential impacts on aviation receptors during installation of the Offshore Export Cables to be determined; in particular, at the Landfall and nearshore locations in respect of physical safeguarding zones associated with aviation Communication, Navigation and Surveillance (CNS) equipment such as navigation beacons.

15.2.6 The Primary and Secondary Aviation and Radar Study Areas were presented as part of the Offshore Scoping Report; no comments were raised in regard to the Study Areas as part of the Scoping Opinion.

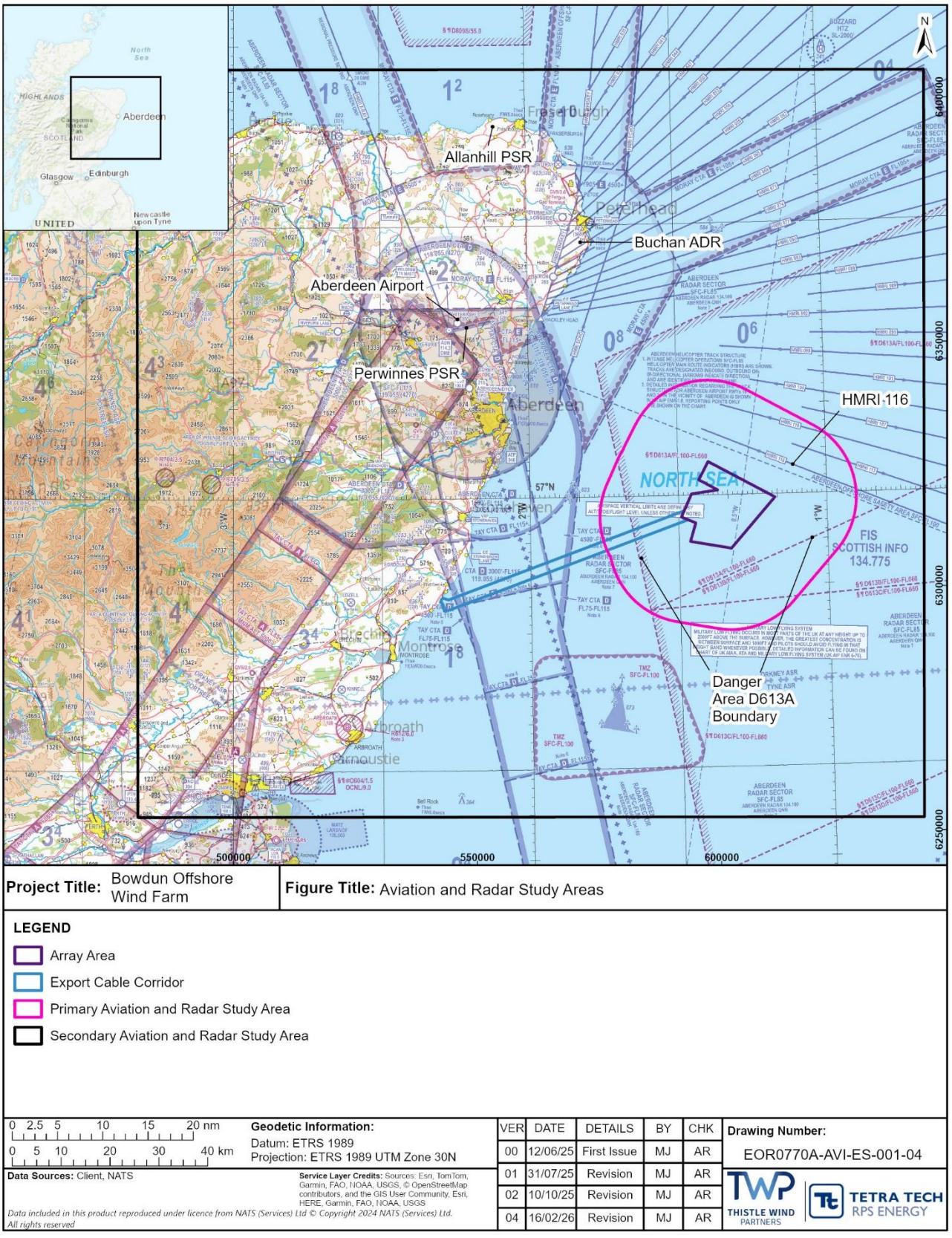

Figure 15.1: Aviation and Radar Study Areas

15.3 Legislative and Policy Context

15.3.1 The overarching policy and legislation applicable to the Proposed Development is presented in Volume 1, Chapter 2: Policy and Legislation. Policy and legislation specific to the impacts of Wind Turbine developments on aviation and radar are contained in The Air Navigation Order (ANO) (the Order and the Regulations) (CAA, 2016a) and CAP 764, Policy and Guidelines on Wind Turbines (CAA, 2016b).

15.3.2 A summary of the legislative provisions relevant to aviation and radar are provided in Table 15.1 below, with other relevant policy provisions set out in Table 15.2 and guidance provisions set out in Table 15.3.

Table 15.1: Summary of Legislation Relevant to Aviation and Radar

Summary of Relevant Legislation	How and Where Considered in the Offshore EIA Report
The ANO 2016 (2016a) (Version 6, 12/02/2021)	Contains the ANO 2016 and Regulations made under the order. Defines the rules of the air regarding civil aviation in the United Kingdom (UK). Specifically relevant to this chapter in terms of lighting requirements for offshore Wind Turbines in UK territorial waters.

Table 15.2: Summary of Policy Provisions Relevant to Aviation and Radar

Summary of Relevant Policy	How and Where Considered in the Offshore EIA Report

Scotland's National Marine Plan (Scottish Government, 2015)	Scottish Government Marine planning policies:
	• Defence 1: To maintain operational effectiveness in Scottish waters used by the armed services, development and use will be managed in these areas:
	  • Naval areas including bases and ports;
	  • Firing Danger Areas (Map 13);
	  • Exercise Areas (Map 13); and
	  • Communications.
	• Defence 2: For the purposes of national defence, the Ministry of Defence (MoD) may establish by-laws for exclusions and closures of sea areas. In most areas this will mean temporary exclusive use of areas by the MoD. Where potential for conflict with other users is identified, appropriate mitigation will be identified and agreed with the MoD, prior to planning permission, a marine licence, or other consent being granted.
	• Defence 3: The established code of conduct for managing fishing and military activity detailed in the documents 'Fishing Vessels Operating in Submarine Exercise Areas' and 'Fishing Vessel Avoidance: The UK Code of Practice Fishing Vessel Avoidance' will be adhered to.
	Specifically relevant to this chapter in terms of assessment of potential impact on military aviation receptors.

CAP 764 – Policy and Guidelines on Wind Turbines (2016b)	Provides CAA policy and guidance on a range of issues associated with Wind Turbines and their effect on aviation that need to be considered by aviation stakeholders, wind energy developers and Local Planning Authorities when assessing the viability of Wind Turbine developments. Specifically relevant to this chapter in terms of assessment of potential impact on civilian aviation receptors.

Summary of Relevant Policy	How and Where Considered in the Offshore EIA Report
Military Aviation Authority (MAA) Manual of Military Air Traffic Management (MAA, 2019)	Provides regulations for military ATC and emergency procedures and utilisation of military designated airspace. Specifically relevant to this chapter in terms of assessment of potential impact on military activities within airspace designated as Danger Areas.
MAA Regulatory Publication 3000 Series: Air Traffic Management Regulations (last updated 15/04/2024) (MAA, 2024)	Provides the regulatory framework and instructions to military personnel for provision of military ATC. Specifically relevant to this chapter in terms of assessment of potential impact on military aviation receptors.

Table 15.3: Summary of Guidance Provisions Relevant to Aviation and Radar

Summary of Relevant Guidance	How and Where Considered in the Offshore EIA Report
MoD Obstruction Lighting Guidance (01/01/2020; MoD, 2020)	Sets out the MoD's minimum requirements and standards for installation of aviation lighting of onshore and offshore Wind Turbine developments. Used in this chapter to inform military lighting requirements for offshore Wind Turbines.
CAA United Kingdom Integrated Aeronautical Information Package (UK IAIP) (CAA, 2025a)	Provides comprehensive information on UK civilian aerodromes and aviation procedures within UK airspace. Specifically relevant to this chapter in terms of assessment of potential impact on civil aviation receptors.
CAA 1:500,000 Visual Flight Rules (VFR) Aviation Chart (CAA, 2025b)	Designed to assist in the navigation of aircraft. Enables pilots to determine their position, safe altitude and route to a destination, highlighting Navigation Aids (NAVAIDs) along the way, alternative landing areas in case of an in-flight emergency, and other useful information such as radio frequencies and airspace boundaries. Used in this chapter as background map for aviation figure.
MoD UK Military Aeronautical Information Publication (Mil AIP) (MoD, 2025)	Provides comprehensive information on UK military aerodromes and guidance to military aircrew on in-flight navigation procedures. Specifically relevant to this chapter in terms of assessment of potential impact on military aviation receptors.
Marine Guidance Note (MGN) 654 – Safety of Navigation: Offshore Renewable Energy Installations (OREIs), Guidance on UK Navigational Practice, Safety and Emergency Response (28/04/2021)	Highlights issues with assessing the impact on navigational safety and emergency response caused by OREIs in UK internal waters (UK Government, 2021). Specifically relevant to this chapter in terms of ensuring that the final turbine layout design takes into account the requirements of Search and Rescue (SAR) helicopters in the event of rescue missions within the Array Area.

15.4 Consultation

15.4.1 The approach to consultation for the Proposed Development is set out in Volume 1, Chapter 5: Consultation and Engagement. A summary of the issues raised during consultation activities undertaken to date specific to aviation and radar is presented in Table 15.4, together with how these issues have been considered in the production of this assessment. Further detail is presented within Volume 1, Chapter 5: Consultation and Engagement, Volume 3, Technical Appendix 5.1: Consultation Log and Volume 3, Technical Appendix 5.2: Pre-Application Consultation Report.

Table 15.4: Summary of Key Consultation Issues Raised During Consultation Activities Undertaken for the Proposed Development Relevant to Aviation and Radar

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
23/09/2024	Aberdeen Airport (2024 Bowdun Offshore Wind Farm (OWF) Scoping Opinion)	The Scoping Report submitted has been examined from an aerodrome safeguarding perspective and we would make the following observations: • The proposed site is located within the wind farm and Instrument Flight Procedure (IFP) consultation zones for Aberdeen Airport and as such aviation impacts should be considered as part of the EIA. • The proposed Wind Turbines will likely be detected by Aberdeen Airport's PSRs and generate clutter on ATC displays. Radar mitigation is highly likely to be required. • Detailed assessment of impact on IFP will be required. The developer should note that mitigation any impact identified may not be possible, in which case an aerodrome safeguarding objection may be maintained. We would encourage the developer to engage with Aberdeen Airport on this matter as soon as possible. Our position with regard to this proposal will only be confirmed once the turbine details are finalized and we have been consulted on a full planning application. At that time, we will carry out a full safeguarding impact assessment and will consider our position in light of, inter alia, operation impact and cumulative effects.	The Applicant has commissioned an IFP assessment to be carried out by Trax International Limited who are Aberdeen Airport's CAA-accredited Approved Procedure Design Organisation (APDO). Trax International Limited IFP assessment report can be found in Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport. The Applicant engaged by email on 29/07/2025 with Aberdeen Airport and National Air Traffic Services (NATS), who operate and maintain the ATC PSRs used by Aberdeen Airport, to ascertain any potential effect the Proposed Development could have on NATS ATC operations. Further details on correspondence with NATS is covered below in this table. Likely significant environmental effects on NATS and Aberdeen Airport ATC operations are assessed in Section 15.10.

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
01/10/2024	NATS (2024 Bowdun OWF Scoping Opinion)	The Proposed Development has been examined by our technical safeguarding teams. In the timeframe given to us we have been unable to thoroughly investigate the effects of the Proposed Development on our operations however the relevant teams are being consulted. Based on our preliminary technical findings, the Proposed Development does conflict with our safeguarding criteria. Accordingly, NATS (En Route) plc objects to the proposal. We will notify you within 4-6 weeks of the results of our operational assessment. Only if this assessment shows the impact to be acceptable will we be able to withdraw our objection.	The Applicant has engaged with NATS by email on 29/07/2025 to ascertain any potential effect the Proposed Development could have on NATS ATC operations and they replied on the 06/08/2025. Further details on correspondence with NATS is covered below in this table. Likely significant environmental effects on NATS ATC operations are assessed in Section 15.10.
25/10/2024	MoD (2024 Bowdun OWF Scoping Opinion)	Impact on military activity has been considered in Chapter 15 Aviation and Radar of the submitted Offshore Scoping Report. Within Chapter 15, it is identified that the development would: • be likely to be detected by an AD radar deployed at Remote Radar Head (RRH) Buchan; • introduce/form a physical obstruction to low flying aircraft; and • fall within the lateral boundaries of Danger Area D613A.	The Applicant acknowledges the comments of the MoD. Likely significant environmental effects on MoD operations are assessed in Section 15.10.
		Paragraph 15.4.7 identifies that the development would be visible to/detectable by AD radar deployed at RRH Buchan. Following assessment, the MoD agrees with this conclusion.	The Applicant acknowledges the comments of the MoD. Likely significant environmental effects on RRH Buchan are assessed in Section 15.10.

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
		At Paragraph 15.4.8 it is identified that the construction, operation, and decommissioning of a wind farm would introduce a physical obstruction to aviation which could limit or otherwise affect military low flying training that may be conducted in this area. The MoD would normally stipulate that this impact is mitigated through the application of conditions/requirements that require the submission, approval, and implementation of an Aviation Lighting Scheme, and the submission of sufficient data to ensure that the development is accurately charted.	The Applicant acknowledges the comments of the MoD. Likely significant environmental effects on military low flying are considered in Section 15.9 and assessed in Section 15.10.
		The submitted Offshore Scoping Report identifies at Paragraph 15.4.12 that both the proposed Array Area and the cable route would be located wholly or partially within the boundaries of Danger Area D613A. This danger area provides space for military air combat training, high energy manoeuvres, and the use of munitions. As identified in Paragraph 15.4.12, this danger area exists in three-dimensional space between an altitude of 10,000 ft and 55,000 ft. At this stage it is not anticipated that the development would have any significant impact on any Military Practice and Exercise Area (PEXA) or Danger Area.	The Applicant acknowledges the comments of the MoD. As the Proposed Development is not anticipated to have any significant impact on any Military PEXA or Danger Area, this issue is not addressed further in this chapter.
		The potential for Unexploded Ordnance (UXO) to be present within the development area is identified at Paragraph 3.7.1 of the Offshore Scoping Report. The potential presence of UXO and disposal sites should be a consideration during the installation and decommissioning of turbines, cables, and any other infrastructure, or where other intrusive works are necessary.	The Applicant acknowledges the comments of the MoD. Potential presence of UXO and disposal sites is addressed in Volume 3, Technical Appendix 19.2: Unexploded Ordnance Technical Report. Consequently, this issue is not addressed further in this chapter.

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
24/11/2024	Marine Directorate-Licensing Operations Team (MD-LOT) (2024 Bowdun OWF Scoping Opinion)	The Scottish Ministers are broadly content with the Aviation Study Areas identified.	The Applicant acknowledges the comments of the Scottish Ministers.
		The Scottish Ministers highlight the Aberdeen Airport representation stating that the Proposed Development is located within the wind farm and IFP consultation zones for Aberdeen Airport. Consequently, the Developer should include consideration of such aviation impacts in the EIA Report.	The Applicant acknowledges the comments of the Scottish Ministers and commissioned an IFP assessment to be carried out by Trax International Limited who are Aberdeen Airport's CAA-accredited APDO. Trax International Limited IFP assessment report can be found in Volume 3, Technical Appendix 15.1: Aviation and Radar Technical Report. Likely significant environmental effects on Aberdeen Airport IFPs are assessed in Section 15.10.
		The Scottish Ministers draw the Developer's attention to the representation from NATS which predicts that the Proposed Development conflicts with its safeguarding criteria. The Scottish Ministers therefore recommend that the Developer engages with NATS on the matter. This impact must be assessed, and appropriate mitigation proposed, in the EIA Report.	The Applicant acknowledges the comments of the Scottish Ministers and has engaged with NATS to ascertain any potential effect the Proposed Development could have on NATS ATC operations. Further details on correspondence with NATS is covered below in this table. Likely significant environmental effects on NATS ATC operations are assessed in Section 15.10.
		The Scottish Ministers note the Aberdeen Airport representation that mitigation is highly likely to be required as the proposed Wind Turbines are likely to be detected by Aberdeen Airport's PSRs. The Developer should consider appropriate mitigation measures within the EIA Report.	The Applicant acknowledges the comments of the Scottish Ministers and has engaged with NATS (who operate and maintain the ATC PSRs used by Aberdeen Airport) to ascertain any potential effect the Proposed Development could have on NATS ATC operations. Further details on correspondence with NATS is covered below in this table. Likely significant environmental effects on NATS and Aberdeen Airport ATC operations are assessed in Section 15.10.

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
		The Scottish Ministers are in agreement with and refer the Developer to the MoD representation with regards to potential impacts on aviation and radar receptors. The Scottish Ministers advise that, in addition, consideration should be given to Military Low Flying Training in the EIA Report and the suggested mitigation measures should be taken into account.	The Applicant acknowledges the comments of the Scottish Ministers and has engaged with MoD regarding potential impact on MoD PSR and Low Flying operations. Further detail on correspondence with MoD is covered below in this table. Likely significant environmental effects on MoD PSR are assessed in Section 15.10. Low Flying operations are covered in Section 15.9 and assessed in Section 15.10.
		With further regards to mitigation measures, the Scottish Ministers highlight that, although detailed assessment of IFP should be included in the EIA Report, it may not be possible to mitigate any impacts identified through this assessment. Consequently, the Developer should engage with Aberdeen Airport on this matter as soon as possible.	The Applicant acknowledges the comments of the Scottish Ministers and commissioned an IFP assessment to be carried out by Trax International Limited who are Aberdeen Airport's CAA-accredited APDO. Trax International Limited IFP assessment report can be found in Volume 3, Technical Appendix 15.1: Aviation and Radar Technical Report. Likely significant environmental effects on Aberdeen Airport IFPs are assessed in Section 15.10.
29/07/2025	Aberdeen Airport (consultation email)	The Applicant engaged by email with Aberdeen Airport requesting confirmation that any potential issue concerning the airport's ATC PSRs will be dealt with by NATS, who operate and maintain the ATC PSRs used by Aberdeen Airport. The Applicant also confirmed that Trax had been commissioned to undertake an IFP Safeguarding Assessment for Aberdeen Airport.	At the time of writing, no response has yet been received from Aberdeen Airport. Likely significant environmental effects on Aberdeen Airport ATC operations are assessed in Section 15.10.

Date	Consultee and Type of Consultation	Summary of Issue(s) Raised	Response to Issue Raised and/or Where Considered in this Chapter
29/07/2025	MoD (consultation email)	The Applicant engaged by email with MoD requesting to arrange a meeting in order to progress AD radar mitigation discussions. The Applicant also informed MoD of the intention to scope out any potential impact on Military Practice and Exercise Areas or Danger Areas from the EIA and requested that MoD respond confirming agreement with this approach.	At the time of writing, no response has yet been received from MoD. Likely significant environmental effects MoD AD operations are assessed in Section 15.10.
06/08/2025	NATS (consultation email)	NATS responded to the Applicant's email of 29/07/2025 requesting confirmation of the potential effects the Proposed Development on NATS ATC operations. The NATS Safeguarding Team confirmed that an operational assessment had been completed and resulted in an objection due to adverse impact on the Allanshill and Perwinnes ATC PSRs. It was also confirmed that suitable mitigation had been identified for NATS operations.	The Applicant has commenced discussions with NATS regarding ATC PSR mitigation and is in the process of agreeing a mitigation contract. Likely significant environmental effects on NATS ATC operations are assessed in Section 15.10.

15.5 Data Sources

15.5.1 Aviation specific information has been reviewed and analysed to inform the aviation and radar baseline. In addition, consultation with aviation stakeholders has been undertaken to aid the collection of baseline information.

Desktop Study

15.5.2 Information on aviation and radar within the Aviation and Radar Study Areas was collected through a detailed desktop review of existing studies and datasets which are summarised in Table 15.5.

15.5.3 Both the literature review of the reports and numerical information contained in the datasets were used to characterise the baseline. The Aviation and Radar Technical Report (Volume 3, Technical Appendix 15.1: Aviation and Radar Technical Report) includes full details of the analysis undertaken to develop the aviation and radar baseline.

Table 15.5: Summary of Key Data Sources

Title	Source	Extent	Year	Author
Self-Assessment Maps	NATS	UK-wide	2025	NATS
UK Integrated Aeronautical Information Package	CAA	UK-wide	2025	CAA
UK Military Aeronautical Information Publication (Mil AIP)	MoD	UK-wide	2025	MoD
VFR Aviation Chart	CAA	UK-wide	2025	CAA
Scottish National Planning Framework 4	Scottish Government	Scottish Waters	2023	Scottish Government
West of Orkney OWF Offshore EIA Report	Offshore Wind Power Limited	Scottish Waters	2023	Offshore Wind Power Limited
Berwick Bank Offshore EIA Report	Berwick Bank Wind Farm Limited	Scottish Waters	2022	Berwick Bank Wind Farm Limited
Neart na Gaoithe OWF Environmental Statement (ES)	Neart na Gaoithe Wind Farm Limited	Scottish Waters	2019	Neart na Gaoithe Wind Farm Limited
Moray West Offshore Windfarm Offshore EIA Report	Moray OWF (West) Limited	Scottish Waters	2018	Moray OWF (West) Limited
Seagreen Alpha and Bravo Wind Farms EIA Report	Seagreen Offshore Wind Farm Limited	Scottish Waters	2018	Seagreen Offshore Wind Farm Limited
Dounreay Tri ES	Dounreay Tri Limited	Scottish Waters	2016	Dounreay Tri Limited
Scotland's National Marine Plan	Scottish Government	Scottish Waters	2015	Scottish Government
Beatrice OWF ES	Beatrice OWF Limited (BOWL)	Scottish Waters	2012	BOWL

Site-Specific Surveys

15.5.4 At the request of Aberdeen Airport, the Applicant commissioned an Aberdeen Airport IFP assessment to be carried out by Trax, Aberdeen Airport's CAA-accredited APDO. The IFP assessment report can be found in Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport.

15.5.5 No site-specific surveys have been undertaken to inform the EIA for aviation and radar. This is because the baseline characterisation developed through existing data sources, coupled with ongoing consultation with relevant stakeholders, is considered sufficient to inform the aviation and radar impact assessment.

15.6 Baseline Environment

15.6.1 There are three primary scenarios that may lead to potential effects on aviation and radar receptors:

- physical obstruction: Wind Turbines and other Offshore Infrastructure can present a physical obstruction to aircraft;
- returns on aviation radar systems and consequent impacts on the provision of radar-based Air Traffic Services (ATS): Wind Turbines can create unwanted radar clutter which appears on radar displays and can affect the provision of ATS to pilots. Radar clutter (or false radar returns) can make it difficult for air traffic controllers to differentiate between aircraft and those radar returns resulting from the detection of Wind Turbines. Furthermore, the appearance of multiple false targets in close proximity can generate false aircraft tracks and seduce those returns from 'real' aircraft away from their true positions. It should be noted that impacts on radar systems are only possible if the Wind Turbine blades are moving, therefore this impact is generally applicable to the O&M phase, or at the time of blade tip installation depending at which location that takes place (i.e. within the Array Area or elsewhere); and
- CNS equipment: A wide range of systems, together with air-ground communications facilities, can be adversely affected by development of infrastructure projects; specifically, when located within the physical safeguarding zones of CNS equipment.

Overview of Baseline Environment

15.6.2 The following sections provide a summary of the aviation and radar baseline environment. Volume 3, Technical Appendix 15.1: Aviation and Radar Technical Report includes full details of the analysis undertaken to develop the aviation and radar baseline and information on aviation receptors.

15.6.3 The Export Cable Corridor and Landfall location are outside the physical safeguarding areas of any aviation communication, navigation and surveillance infrastructure.

Civil Airport IFPs (Including NAVAIDs)

15.6.4 The nearest major civil airport to the Array Area is Aberdeen Airport located 27 nm (50 km) to the north-west. The published obstacle safeguarding area for airports of this nature is 30 nm (56 km), therefore the Proposed Development is inside the safeguarding area for Aberdeen Airport's IFPs. The IFP assessment carried out by Trax, Aberdeen Airport's CAA-accredited APDO (see Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport) confirmed that the airport's IFPs will be adversely affected by the proposed Wind Turbines.

Military Aerodrome IFPs (Including NAVAIDs)

15.6.5 The Proposed Development's Wind Turbines are outside the safeguarding area for any military aerodromes.

Civil ATC Radars

15.6.6 The nearest civil ATC radars to the Array Area are the NATS Perwinnes PSR located 26 nm (48 km) to the north-west and the Allanshill PSR located 43 nm (80 km) to the north-west. The proposed Wind Turbines are highly likely to be in Radar Line of Sight (RLOS) of both PSRs.

Military ATC Radars

15.6.7 Proposed Development's Wind Turbines will not be in RLOS of any military ATC radars.

Military AD Radars

15.6.8 The nearest military AD radar to the Array Area is located at RRH Buchan 28 nm (52 km) to the north-west. The proposed Wind Turbines will be in RLOS of the Buchan AD PSR.

Military Low Flying and SAR Helicopter Operations

15.6.9 The Proposed Development's Wind Turbines will create obstacles to military aircraft and SAR helicopters operating at low-level in the vicinity of the Array Area.

Helicopter Main Route Indicators (HMRIs)

15.6.10 No HMRIs will be affected by the Proposed Development's Wind Turbines.

Offshore Helicopter Installations (Oil and Gas Platforms)

15.6.11 No offshore helicopter installations will be affected by the Proposed Development's Wind Turbines.

Local Airspace Restrictions (Prohibited/Restricted/Danger Areas and Military PEXAs)

15.6.12 The Array Area and eastern portion of the Export Cable Corridor lie within the lateral boundaries of Danger Area D613A which is activated periodically by MoD by means of the Notice to Aviation (NOTAM) system. It is activated from Flight Level 100 (10,000 ft) up to Flight Level 550 (55,000 ft) and is used for military air combat training and supersonic flight. Flight level is defined as a standard nominal altitude of an aircraft, in hundreds of ft, based upon a standardised air

pressure at sea level. Although the Array Area is located within the lateral boundaries of D613A, military operations only commence from 10,000 ft above the Proposed Development.

Meteorological (Met) Office Radar

15.6.13 No Meteorological Office radars will be affected by the Proposed Development's Wind Turbines.

Designated Sites

15.6.14 A screening of designated sites in the vicinity of the Proposed Development has been undertaken and has identified that there were no designated sites relevant to aviation and radar in the Aviation and Radar Study Areas.

Future Baseline Scenario

15.6.15 The EIA Regulations require that '*a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the Project as far as natural changes from the baseline scenario can be assessed with reasonable effort, on the basis of the availability of environmental information and scientific knowledge*' is included within the Offshore EIA Report.

15.6.16 If the Proposed Development does not come forward, an assessment of the 'without development' future baseline conditions has also been carried out and is described within this section.

15.6.17 Currently, there are no planned changes to the airspace environment that are expected to affect any future baseline for aviation and radar. Therefore, the future baseline for aviation and radar is not expected to differ from the current baseline as presented in this chapter.

Data Limitations and Assumptions

15.6.18 The data used in this chapter are detailed in Section 15.5. The data used are the most up to date publicly available information which can be obtained from the applicable data sources as cited. It is considered that the data employed in the assessment are robust and sufficient for the purposes of an aviation and radar assessment.

15.7 Key Parameters for Assessment

Maximum Design Scenario

15.7.1 The Maximum Design Scenario (MDS) identified in Table 15.6 are those parameters expected to have the potential to result in the greatest effect on an identified receptor or receptor group. Any other development scenario within the Project Design Envelope (PDE), will result in the same, or less, level of environmental effect. The scenario has been selected from the details provided in Volume 1, Chapter 3: Project Description.

Table 15.6: Maximum Design Scenario Considered for Each Potential Impact as Part of the Assessment of Likely Significant Environmental Effects on Aviation and Radar

Potential Impact	Phase			MDS	Justification
	C	O&M	D		
Potential impact on Aberdeen Airport IFPs due to presence of obstacles (Wind Turbines in construction).	✓	×	×	**Construction phase** • Installation of up to 40 Wind Turbines (25 MW); • Maximum tip height up to 359.12 m above Lowest Astronomical Tide (LAT); • 326 m maximum rotor diameter; • Up to three Offshore Substation Platforms (OSPs) with a maximum height of 60 m above LAT; and • Construction period of up to five years.	These parameters represent the MDS for height of infrastructure and associated installation equipment within the OWF, which has the greatest potential for interference with Aberdeen Airport's IFPs. This impact is scoped into the construction phase only and is scoped out of O&M and decommissioning phases as mitigation will have to be implemented prior to the construction phase and will last throughout the lifetime of the Proposed Development.
Potential impact on NATS Allanshill and Perwinnes ATC PSRs due to operation of Wind Turbines.	×	✓	×	**O&M phase** • Operation of up to 40 Wind Turbines (25 MW); • Maximum tip height up to 359.12 m above LAT; • 326 m maximum rotor diameter; • Up to three OSPs with a maximum height of 60 m above LAT; and • Operation period of up to 30 years.	These parameters represent the MDS for the operation of Wind Turbines within the OWF, which has the greatest potential for interference with the NATS Allanshill and Perwinnes ATC PSRs. This impact is scoped into the O&M phase only and is scoped out of the construction and decommissioning phases as adverse impact on ATC PSRs is only possible when Wind Turbine rotor blades are rotating on their axis. Mitigation will be implemented prior to the O&M phase commencing and will last until the decommissioning phase of the Proposed Development.

Potential Impact	Phase			MDS	Justification
	C	O&M	D		
Potential impact on MoD Buchan AD PSR due to operation of Wind Turbines.	×	✓	×	**O&M phase** • Operation of up to 40 Wind Turbines (25 MW); • Maximum tip height up to 359.12 m above LAT; • 326 m maximum rotor diameter; • Up to three OSPs with a maximum height of 60 m above LAT; and • Operation period of up to 30 years.	These parameters represent the MDS for the operation of Wind Turbines within the OWF, which has the greatest potential for interference with the MoD Buchan AD PSR. This impact is scoped into the O&M phase only and is scoped out of the construction and decommissioning phases as adverse impact on AD PSRs is only possible when Wind Turbines rotor blades are rotating on their axis. Mitigation will have to be implemented prior to the O&M phase commencing and will last until the decommissioning phase of the Proposed Development.
Potential impact on military low flying and UK SAR helicopter operations due to presence of obstacles (Wind Turbines in construction).	✓	×	×	**Construction phase** • Installation of up to 40 Wind Turbines (25 MW); • Maximum tip height up to 359.12 m above LAT; • 326 m maximum rotor diameter; • Up to three OSPs with a maximum height of 60 m above LAT; and • Construction period of up to five years.	These parameters represent the MDS for height of infrastructure and associated installation equipment within the OWF, which has the greatest potential for obstruction to air traffic. This impact is scoped into the construction phase only and is scoped out of the O&M and decommissioning phases as mitigation will have to be implemented prior to the construction phase and will last throughout the lifetime of the Proposed Development.

Impacts Scoped Out of the Assessment

15.7.2 On the basis of the baseline environment and the Project Description outlined in Volume 1, Chapter 3: Project Description, a number of impacts are scoped out of the assessment for aviation and radar. This was either agreed with key stakeholders through consultation (see Table 15.4) or the impact was proposed to be scoped out in the Bowdun Offshore Scoping Report (Bowdun Offshore Wind Farm Limited (BOWFL, 2024)) and no concerns were raised by key consultees within the Scoping Opinion.

15.7.3 Each impact is outlined, together with a justification for scoping it out, in Table 15.7.

Table 15.7: Impact Scoped Out of the Assessment for Aviation and Radar

Potential Impact	Phase			Justification
	C	O&M	D	
Creation of an obstruction: Offshore Export Cable Route on Civil and Military CNS equipment	✓	✓	✓	The Export Cable Corridor and Landfall location are outside the physical safeguarding areas of any aviation CNS infrastructure and, therefore, will not adversely impact aviation operations. Consequently, this potential impact is scoped out of the Offshore EIA Report.
Creation of obstruction: Military Aerodrome IFPs (including CNS equipment)	✓	✓	✓	The Proposed Development's Wind Turbines are not within the safeguarding area of any military aerodromes. Consequently, this potential impact is scoped out of the Offshore EIA Report.
Impact on aviation radar systems: Military ATC PSR	✓	✓	✓	The Proposed Development's Wind Turbines are not within radar coverage of any military ATC PSR systems as confirmed by MoD's Scoping Response (see Table 15.4). Consequently, this potential impact is scoped out of the Offshore EIA Report.
Creation of an obstruction: HMRIs	✓	✓	✓	Construction of Wind Turbines within 2 nm (3.7 km) either side of an HMRI would have the potential to restrict operations below the routine operational altitudes when icing conditions exist. The ability of a helicopter to operate at the expected altitudes would be dependent upon the icing level (the 0° isotherm). In this situation, helicopters operating on HMRIs need an 'escape-route' if icing conditions are encountered unexpectedly; this would inevitably involve a descent. However, as outlined in CAP 764 (CAA, 2016b), CAA guidance is that, provided there are no Wind Turbines within 2 nm (3.7 km) either side, then helicopter operations on HMRIs will not be affected. Consequently, this potential impact is scoped out of the Offshore EIA Report.
Creation of an obstruction: Offshore Helicopter Installations	✓	✓	✓	In line with CAP 764 (CAA, 2016b), the Proposed Development's Wind Turbines are more than 9 nm (17 km) from any offshore helicopter installation. Consequently, helicopter operations into offshore installations will not be affected by the Proposed Development. Consequently, this potential impact is scoped out of the Offshore EIA Report.
Creation of an obstruction: Local Airspace Restrictions (Prohibited/Restricted/Danger Areas and Military PEXAs)	✓	✓	✓	Although the Array Area is located within the lateral boundaries of Danger Area D613A, the presence of Wind Turbines within the boundaries of the Danger Area will not create any adverse impact as military operations do not commence until above Flight Level 100 (10,000 ft). Consequently, this potential impact is scoped out of the Offshore EIA Report.
Impact to Met Office Radar	✓	✓	✓	The Proposed Development's Wind Turbines are not within radar coverage of any Met Office radar systems and are outside the 11 nm (20 km) safeguarding area for radars of this nature. Consequently, this potential impact is scoped out of the Offshore EIA Report.

15.8 Methodology for Assessment of Effects

Overview

15.8.1 An assessment of potential impacts on aviation and radar is provided separately for the construction, O&M and decommissioning stages. However, the criteria for the assessment for aviation and radar differ from those set out in Volume 1, Chapter 4: Environmental Impact Assessment Methodology.

15.8.2 The methodology used for the aviation assessment is a desk-based review using the data sources as described in Table 15.5. However, defining categories of receptor sensitivity and magnitude of impact is not appropriate for aviation as baseline aviation activities and equipment are highly sensitive to impacts and any magnitude of restriction on, or compromise to, activities or equipment (without Embedded Mitigation) is considered to be high. Therefore, the sensitivity of receptor and magnitude of impact will be explained via professional reasoning and judgement rather than via definitions of different categories. These judgements have fed into the determination of significance and represent a deviation from the standard methodology presented within Volume 1, Chapter 4: Environmental Impact Assessment Methodology.

Significance Criteria

15.8.3 An impact assessment matrix will be used to determine the significance of an effect. The potential significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact, as shown in Table 15.8.

Table 15.8: Matrix for Determination of Significance for Aviation and Radar

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	**Low**	**Medium**	**High**
Negligible	Negligible	Negligible	Negligible	Negligible
Low	Negligible	Negligible	Minor	Minor
Medium	Negligible	Minor	Moderate	Moderate
High	Negligible	Minor	Moderate	Major

15.8.4 The significance levels are defined in Table 15.9.

Table 15.9: Definition of Significance Levels for Aviation and Radar

Impact	Justification
Negligible	Normally no measurable change from baseline conditions which therefore do not require any alteration of existing operational and technical practice.
Minor	Occasional effects experienced which do not require any alteration of existing operational and technical practice.
Moderate	Periodic effects experienced which may require alterations to existing operational practice.

Impact	Justification
Major	Regular, frequent, or permanent effects which require changes to existing operational and/or technical practice in order to mitigate adequately, or which are not capable of being mitigated adequately.

15.8.5 The EIA Regulations require the identification and reporting of significant environmental effects. For the purposes of this assessment:

- a level of moderate or more will be considered a 'significant' effect in terms of the EIA Regulations; and
- a level of minor or less will be considered 'not significant' in terms of the EIA Regulations.

15.8.6 Effects of moderate significance or above are therefore considered important in the decision-making process, whilst effects of minor significance or less warrant little, if any, weight in the decision-making process.

15.9 Embedded Mitigation

15.9.1 As part of the Proposed Development design process, a number of Embedded Mitigation measures have been proposed to reduce the potential for impacts on aviation and radar (see Table 15.10). They are considered at every stage of the Proposed Development through design and best practice and, as there is a commitment to implementing these measures, these have been considered in the assessment presented in Section 15.10 (i.e. the determination of magnitude and therefore significance assumes implementation of these measures). These Embedded Mitigation measures are considered standard industry practice for this type of development.

Table 15.10: Embedded Mitigation Adopted as Part of the Proposed Development

ID*	Embedded Measures Adopted as Part of the Proposed Development	Justification
7	Development of, and adherence to, a Construction Method Statement (CMS) along with a Code of Construction Practice.	Secured in the Section 36 Consent and Marine Licence, via the requirement for a CMS.
8	All relevant Health and Safety Executive (HSE) procedures will be followed.	Required in accordance with relevant health and safety legislation.
9	Development of, and adherence to, a combined Navigational Safety and Vessel Management Plan (NSVMP), describing Project vessels' requirements, passages, monitoring and controls.	The Applicant has submitted an outline NSVMP as part of the application (Volume 4, Appendix 29: Outline Navigational Safety Vessel Management Plan). The outline NSVMP will be updated and agreed with the MoD prior to construction. The NSVMP will be prepared in consultation with MoD and will take into account requirements for the types and numbers of vessels that will be engaged on the Proposed Development and consider vessel coordination including indicative transit route planning.
13	Development of, and adherence to, a Lighting and Marking Plan (LMP). The LMP will confirm compliance with legal requirements with regards to shipping, navigation and aviation marking and lighting.	The Applicant has submitted an outline LMP as part of the application (Volume 4, Appendix 31: Outline Lighting and Marking Plan). The outline LMP will be updated and agreed prior to construction with CAA, Maritime & Coastguard Agency (MCA), MoD and Northern Lighthouse Board (NLB). The LMP will take into account legal requirements for aviation lighting as specified in Article 223 of the UK ANO, 2016 and International Civil Aviation Organisation (ICAO) Annex 14 Volume I (ICAO, 2022).
19	Details of any temporary obstacles associated with the Proposed Development which are of more than 91.4 m in height are to be alerted to aircrews by means of the (NOTAM) system.	The Applicant will provide CAA with details of any temporary obstacles of more than 91.4 m in order that CAA can identify these temporary obstacles to aircrews via the NOTAM system.
22	Development of, and adherence to, an Emergency Response Cooperation Plan (ERCoP) in consultation with the MCA.	An ERCoP will be produced to ensure the emergency response plan will provide sufficient information about the Proposed Development, actions and details required in the event of an emergency situation. The ERCoP will refer to the marking and lighting of the Wind Turbines and will consider helicopters undertaking SAR operations when rendering assistance to vessels and persons in the vicinity of the operational Array Area. MCA recommended standards and procedures (MGN 654: Safety of Navigation – OREIs – Guidance on UK Navigational Practice, Safety and Emergency Response (MCA, 2021) are to be followed and appropriate lighting and marking is to be in place to facilitate aeronautical safety.

ID*	Embedded Measures Adopted as Part of the Proposed Development	Justification
23	Development of, and adherence to, an Operation and Maintenance Programme (OMP) in conjunction with approved post-consent construction plans.	Identifies operations which may require promulgation to aircrews.
25	Civil Aviation Authority (CAA) will be informed of the locations, heights and lighting status of the Wind Turbines, including estimated dates of construction at least 6 months prior to the estimated start of construction.	CAA will be required to ensure details are included in aviation publications and charts prior to construction.
34	Drafting and implementation of a decommissioning programme, prepared in accordance with requirements of the Energy Act 2004, which will set out the extent of infrastructure to be removed as well as the methods and processes which will be used.	A Decommissioning Programme will be developed to cover the decommissioning phase as required under Chapter 3 of the Energy Act 2004. As the decommissioning phase will be a similar process to the construction phase but in reverse (i.e. increased project vessels on site, partially deconstructed structures) the mitigation measure will be similar to those for the construction phase.
47	Details of all permanent offshore structures of more than 91.4 m in height will be provided to the Defence Geographic Centre (DGC) to allow these to be charted on aeronautical charts prior to construction.	The Applicant has submitted an outline LMP as part of the application. The outline LMP and the Design Specification and Layout Plan will be updated and agreed prior to construction with CAA, MCA, MoD and NLB. Details will be provided to DGC in order that structures of more than 91.4 m in height can be charted on aeronautical charts prior to construction.

*see Volume 3, Technical Appendix 4.6: Schedule of Mitigation and Commitments' placed as table footnote

15.10 Assessment of Significance

15.10.1 Table 15.6 summarises the potential effects arising from the construction, O&M and decommissioning phases of the Proposed Development, as well as the MDS against which each impact has been assessed. An assessment of the likely significance of the effects of the Proposed Development on aviation and radar receptors caused by each identified impact is given below.

IMPACT 1 - POTENTIAL IMPACT ON ABERDEEN AIRPORT IFPs DUE TO PRESENCE OF OBSTACLES (WIND TURBINES IN CONSTRUCTION)

15.10.2 The installation, and presence, of Wind Turbines within 25 nm (46 km) of a civil airport can impact on that unit's IFPs. In particular, aircraft inbound to an airport fly on published routes and only down to the lowest altitude prescribed on the relevant procedure. As outlined in Table 15.6, this impact is scoped into the construction phase only and is scoped out of the O&M and decommissioning phases as mitigation will have to be implemented prior to the construction phase and will last throughout the lifetime of the Proposed Development.

Construction Phase

Magnitude of Impact

15.10.3 At the request of Aberdeen Airport, the Applicant commissioned an IFP assessment to be carried out by Trax, Aberdeen Airport's CAA-accredited APDO. The IFP assessment report can be found at Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport. The results confirmed that, in order to accommodate the Proposed Development, the following aspects of the airport's published procedures would be affected as follows:

- the Airfield Reference Point (ARP) south-east Minimum Sector Altitude (MSA) sector would be required to be increased by 100 ft, from 2,100 ft to 2,200 ft.

15.10.4 Given the effects identified on Aberdeen Airport's IFPs, the magnitude of impact is considered to be high and it is envisaged that Additional Mitigation measures will be required.

Sensitivity of the Receptor

15.10.5 Within a 25 nm (46 km) radius of an airport, the lowest altitude to which aircraft can safely descend is designed such that 1,000 ft vertical separation can be maintained from all terrain and obstacles (such as Wind Turbines); this is known as the MSA. Further descent below this altitude is not authorised until the aircraft is established on the final approach track (usually within 10 nm (19 km) of the runway).

15.10.6 Although airport MSAs are published out to 25 nm (46 km), aviation regulations dictate that, in determining airport MSA, the elevation of terrain and obstacles should be surveyed out to 30 nm (56 km). Aberdeen Airport is located approximately 27 nm (50 km) to the north-west of the proposed Wind Turbines which is on the periphery of the IFP safeguarding criteria. As outlined in Paragraph 15.8.2, the sensitivity of any aviation receptor is considered to be high.

Significance of the Effect

15.10.7 Overall, the sensitivity of the receptor is deemed to be high and the magnitude of the impact is considered to be high. Consequently, as per the matrix in Table 15.8, the significance of effect is assessed as **Major**, which is significant in EIA terms.

Additional Mitigation and Residual Effect

15.10.8 Trax's IFP assessment report can be found at Volume 3, Technical Appendix 15.2: Instrument Flight Procedure Safeguarding Report Aberdeen Airport. At the time of writing this chapter, Aberdeen Airport are yet to comment on the findings of the report. In terms of mitigation however, any adverse impact can be resolved if the lowest altitude for the affected procedure is increased by the margins outlined in Paragraph 15.10.3. From an IFP point of view, this increase of 100 ft could be incorporated simply as the initial approach altitudes for the other airport IFPs are 2,500 ft and 2,300 ft respectively i.e. higher than the change required by the Proposed Development.

15.10.9 The Applicant anticipates that this will be acceptable to Aberdeen Airport and that the IFPs could be amended and re-published in time for the construction phase of the Proposed Development.

15.10.10 Overall, once the Additional Mitigation measures described above have been implemented, the magnitude of the impact on Aberdeen Airport IFPs is considered to be negligible and the sensitivity of the receptor is considered to be high. Consequently, as per the matrix in Table 15.8, a significance effect of **Negligible** is predicted, which is not significant in EIA terms.

IMPACT 2 - POTENTIAL IMPACT ON NATS ALLANSHILL AND PERWINNES ATC PSRs DUE TO OPERATION OF WIND TURBINES

15.10.11 It should be noted that adverse effects on PSRs are only possible if the Wind Turbine blades are moving, therefore this impact is applicable to the O&M phase only.

15.10.12 Wind Turbines have been shown to have detrimental effects on the performance of PSR systems and have the potential to affect the provision of radar-based ATS. These effects include the desensitisation of radar in the vicinity of the Wind Turbines, shadowing and the creation of unwanted returns which air traffic controllers must treat as aircraft returns. Unwanted radar clutter can affect the provision of ATS to pilots. Radar clutter (or false radar returns) can confuse air traffic controllers making it difficult to differentiate between aircraft and those radar returns resulting from the detection of Wind Turbines. Furthermore, the appearance of multiple false targets in close

proximity can generate false aircraft tracks and divert those returns from real aircraft away from the true aircraft position.

O&M Phase

Magnitude of Impact

15.10.13 NATS uses PSRs to support their provision of navigational services to aircraft operating between the UK and mainland Europe and to those overflying UK airspace. Surveillance data from the Allanshill and Perwinnes PSRs is used by other air traffic service providers such as Aberdeen Airport who are responsible for the provision of navigational services to aircraft operating on local air routes.

15.10.14 Air traffic controllers are responsible for maintaining typically 5 nm lateral separation between aircraft. Where line of sight to a PSR exists, Wind Turbines may appear as genuine aircraft targets and could mask genuine aircraft responses. The radar may also be desensitised by its clutter processing within the sector containing Wind Turbines meaning that real aircraft targets may disappear from radar.

15.10.15 Given the effects identified on the Allanshill and Perwinnes PSRs, the magnitude of impact is considered to be high and it is envisaged that additional mitigation measures will be required.

Sensitivity of the Receptor

15.10.16 Desensitisation of PSRs could result in aircraft not being detected by the radar and therefore aircraft returns not presented to air traffic controllers. Controllers use the radar to separate and sequence aircraft; therefore, maintaining situational awareness of all aircraft movements within the airspace is crucial to achieving a safe and efficient ATS, and the integrity of radar data is central to this process. The creation of unwanted returns displayed on the radar leads to increased workload for both controllers and aircrews. Furthermore, real aircraft returns can be obscured by a Wind Turbine's radar return, making the tracking of both conflicting unknown aircraft and the controllers' own traffic much more difficult.

15.10.17 In their response to the Offshore Scoping Report (Table 15.4), NATS confirmed that false primary plots are likely to be generated on the Allanshill and Perwinnes PSRs which would create a reduction in the radars' probability of detection for real aircraft. Consequently, NATS considered that the impact on both PSRs would be unacceptable. As outlined in Paragraph 15.8.2, the sensitivity of any aviation receptor is considered to be high.

Significance of the Effect

15.10.18 Overall, the magnitude of the impact is deemed to be high and the sensitivity of the receptor is considered to be high. Consequently, as per the matrix in Table 15.8, the significance of effect is assessed as **Major**, which is significant in EIA terms.

Additional Mitigation and Residual Effect

15.10.19 NATS has proven processes and techniques to mitigate the adverse impact of Wind Turbines on their PSRs. The Applicant has commenced discussions with NATS about potential mitigation solutions and it is likely that the proposed solution will be to use Multi-Radar Tracker (MRT) blanking, which is a technical mitigation solution routinely offered by NATS that removes Wind Turbine returns from the ATC radar display. However, in combination, NATS are likely to request that the MRT blanking is accompanied by a Transponder Mandatory Zone (TMZ). This provides an added layer of mitigation by ensuring that all aircraft transiting overhead the 'blanked' area carry a serviceable transponder which enables them to be tracked by means of Secondary Surveillance Radar without reliance on PSR. Implementation of a TMZ requires developers to submit an Airspace Change Proposal to the CAA for which a formal airspace change process has to be followed.

15.10.20 The Applicant intends to continue negotiations with NATS with the aim of delivering a suitable PSR mitigation solution prior to the O&M phase of the Proposed Development.

15.10.21 Once a mitigation solution is implemented, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be high. Consequently, as per the matrix in Table 15.8, a significance effect of **Negligible** is predicted, which is not significant in EIA terms.

IMPACT 3 - POTENTIAL IMPACT ON MoD BUCHAN AD PSR DUE TO OPERATION OF WIND TURBINES.

15.10.22 As outlined in Paragraph 15.10.11, adverse effects on PSRs are only possible if the Wind Turbine blades are moving, therefore this impact is applicable to the O&M phase only.

15.10.23 The MoD AD organisation is responsible for compiling a Recognised Air Picture (RAP) to monitor the airspace in and around the UK to launch a response to potential airborne threats. This is achieved through the utilisation of a network of long-range radars positioned in various locations around the UK. AD radar resources are used in support of training exercises on an almost daily basis. AD units, using radar data supplied from the network of AD radars, are also responsible for navigation services and support to aircraft activity within restricted airspace within which promulgated activities include air combat training and supersonic flight.

O&M Phase

Magnitude of Impact

15.10.24 Wind Turbines within the Array Area will be visible to the Buchan AD PSR and will adversely impact on MoD AD operations. In their scoping response (Table 15.4), MoD confirmed that the Proposed Development is likely to impact, and be detectable to, the Buchan AD PSR and that this impact would need to be taken into account and mitigated. Given the effects identified on the Buchan AD PSR, the magnitude of impact is considered to be high and it is envisaged that additional mitigation measures will be required.

Sensitivity of the Receptor

15.10.25 Wind Turbines within coverage of an AD PSR could shield the radar from genuine aircraft targets and/or hide them from AD controllers. The result would impact the controller's ability to provide a safe service to aircraft in support of training exercises and in using the radar data to monitor the UK RAP. As outlined in Paragraph 15.8.2, the sensitivity of any aviation receptor is considered to be high.

Significance of the Effect

15.10.26 Overall, the magnitude of the impact is deemed to be high and the sensitivity of the receptor is considered to be high. Consequently, as per the matrix in Table 15.8, the significance of effect is assessed as **Major**, which is significant in EIA terms.

Additional Mitigation and Residual Effect

15.10.27 MoD has a recognised process for entering into agreement for AD PSR mitigation. The Applicant has engaged with MoD regarding the suitability of 3-Dimensional Non-Automatic Initiation Zones (3-D NAIZs) as mitigation. This involves in-built software technology which enables Wind Turbine clutter to be removed from AD radar displays while allowing aircraft initiated outside 3D-NAIZs to continue to be tracked through the wind farm. Typically, OWF 3D-NAIZs are established 1.1 nm (2 km) radius from the centre of each turbine up to a ceiling height 2,500 ft. In order to progress this mitigation, MoD will need to advise the Applicant that it would be willing to consider 3D-NAIZ mitigation. Acceptance of 3D-NAIZ as mitigation will allow MoD to remove their planning objection subject to agreement of a suitably worded Section 36 planning condition. The Applicant will continue to engage with MoD in this regard.

15.10.28 The Applicant is also aware that the Offshore Wind Industry Council (OWIC) is working jointly with MoD and other developers to develop and procure replacement/additional AD surveillance technology in order to mitigate the impact of offshore Wind Turbines on UK-based AD radars. The ultimate aim will be to have mitigations in place to support offshore wind developments from 2026.

15.10.29 The Applicant intends to continue negotiations with MoD with the aim of delivering the most suitable AD PSR mitigation solution prior to the O&M phase of the Proposed Development.

15.10.30 Once a mitigation solution is implemented, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be high. Consequently, as per the matrix in Table 15.8, a significance effect of **Negligible** is predicted, which is not significant in EIA terms.

IMPACT 4 - POTENTIAL IMPACT ON MILITARY LOW FLYING AND UK SAR HELICOPTER OPERATIONS DUE TO PRESENCE OF OBSTACLES (WIND TURBINES IN CONSTRUCTION)

15.10.31 The installation and presence of Wind Turbines pose physical obstructions to military and SAR helicopter operations carried out in the vicinity of wind farms. Wind Turbines can be difficult to see from the air, particularly in poor weather conditions, leading to a potential increase in obstacle collision risk. Furthermore, during the construction phase, the presence and movement of installation infrastructure (e.g. cranes) may also present a potential obstacle collision risk to aircraft operations. As outlined in Table 15.6, this impact is scoped into the construction phase only and is scoped out of the O&M and decommissioning phases as any mitigation will have to be implemented prior to the construction phase commencing and will last throughout the lifetime of the Proposed Development.

Construction Phase

Magnitude of Impact

15.10.32 The presence of construction infrastructure (such as cranes), more than 91.4 m in height, will be alerted to pilots under the NOTAM system (Table 15.10). The NOTAM will provide details of potential hazards along a flight route, or at a location, that could affect the safety of flight. The cranes will also have appropriate aviation lighting installed.

15.10.33 In terms of Wind Turbines creating physical obstacles, aircraft operating at low levels are required to set a MSA; this is the lowest altitude set in areas to ensure safe separation between aircraft and known obstacles. The MSA for aircraft operating in Instrument Meteorological Conditions (i.e. poor weather), enables aircraft to maintain a minimum of 1,000 ft (305 m) clearance between aircraft and known obstacles.

15.10.34 As detailed in Table 15.10, potential impacts to low flying aircraft operating in the vicinity of the Proposed Development will be managed through the agreement of a LMP with key aviation stakeholders, and notification of the locations, heights and lighting status of the Wind Turbines to aviation stakeholders for inclusion in appropriate aviation documentation and charts. This will enable aviation operators to set an appropriate MSA over the Proposed Development. Furthermore, as also detailed in Table 15.10, an ERCoP will be agreed with MCA to enable SAR helicopter operations to be undertaken within, and in the vicinity of, the Array Area. Implementation of the Embedded Mitigation measures (Table 15.10) enables the magnitude of impact to be assessed as negligible.

Sensitivity of the Receptor

15.10.35 Pilots are obliged to plan their flying activities in advance and to be familiar with any enroute obstacles they may encounter; however, during flight, weather conditions or operational requirements may necessitate route adjustments. In Visual Meteorological Conditions (VMC) (i.e. good weather), pilots are ultimately responsible for seeing and avoiding obstructions such as Wind

Turbines and will be aware of their presence through the notification procedures set out in Table 15.10.

15.10.36 Aircraft completing low flying training in the vicinity of the Proposed Development would be considered to be operating in VMC. This means that aircraft will be operating in weather conditions in which pilots would have sufficient visibility to maintain visual separation from terrain, obstacles and other aircraft. The Wind Turbines would be additional obstacles that low flying aircraft would have to avoid.

15.10.37 The Applicant is committed to lighting and charting the proposed Wind Turbines and, in the interests of air safety, fitting them with civilian, and military, accredited aviation safety lighting in accordance with the UK ANO, 2016. Embedded Mitigation measures, as outlined in Table 15.10, will be implemented to enable any potential impacts of the Proposed Wind Turbines to be alleviated. As outlined in Paragraph 15.8.2, the sensitivity of any aviation receptor is considered to be high.

Significance of the Effect

15.10.38 The sensitivity of low flying activities to change is considered to be high and, following implementation of Embedded Mitigation measures (Table 15.10) the magnitude of the impact is assessed as negligible. Consequently, as per the matrix in Table 15.8, the significance of effect is assessed as **Negligible**, which is not significant in EIA terms. No additional mitigation is considered necessary because the likely effect in the absence of additional mitigation is not significant in EIA terms.

15.11 Inter-Related Effects

15.11.1 A description of the likely inter-related effects arising from the Proposed Development on Aviation and Radar is provided in Volume 2, Chapter 23: Inter-Related Effects.

15.11.2 Inter-relationships are considered to be the impacts and associated effects of different aspects of Bowdun OWF on the same receptor. Inter-related effects are considered to be either:

- lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of Bowdun OWF (construction, O&M and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three project stages (e.g. underwater sound effects from piling, operational Wind Turbines, vessels and decommissioning); or
- receptor-led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on Infrastructure and Other Users, such as displacement of recreational activities and impacts to cables or pipelines or restrictions on access to these assets, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short-term, temporary or transient effects, or incorporate longer-term effects.

15.11.3 For aviation and radar, the following potential impacts have been considered within the inter-related assessment:

- Aberdeen Airport IFPs due to presence of obstacles (Wind Turbines in construction);
- NATS Allanshill and Perwinnes ATC PSRs due to operation of Wind Turbines;
- MoD Buchan AD PSR due to operation of Wind Turbines; and
- Military low flying and UK SAR helicopter operations due to presence of obstacles (Wind Turbines in construction).

15.11.4 Table 15.11 lists the inter-related effects (project lifetime effects) that are predicted to arise during the construction, O&M phase, and decommissioning of the Proposed Development and also the inter-related effects (receptor-led effects) that are predicted to arise for aviation and radar receptors.

15.11.5 As noted above, effects on aviation and radar also have the potential to have secondary effects on other receptors and these effects are fully considered in the topic-specific chapters. These receptors and effects are:

- Volume 2, Chapter 14: Shipping and Navigation:
  - Aviation lighting and marking requirements differ from those of maritime operators; consequently, it has been necessary to interact with the Volume 2, Chapter 14: Shipping and Navigation assessment in order to ensure that the requirements of both aviation and maritime operators are taken into account.

Table 15.11: Summary of Likely Significant Inter-Related Effects for Aviation and Radar from Individual Effects Occurring Across the Construction, O&M and Decommissioning Phase of the Proposed Development (Project Lifetime Effects) and from Multiple Effects Interacting Across all Phases (Receptor-led Effects)

Description of Impact	Phase			Likely Significant Inter-Related Effects
	C	O&M	D	
Project Lifetime Effects				
Aberdeen Airport IFPs due to presence of obstacles (Wind Turbines in construction)	✓	×	×	The scale of effects to aviation and radar receptors progressively increases during construction as the Wind Turbines and ancillary structures are installed. Once installed, the infrastructure causing physical obstacles to air traffic will remain constant until the decommissioning phase. The effects of aviation and radar are not anticipated to interact in such a way as to result in combined effects of greater significance than the assessments presented for each individual phase. Therefore, across the Project lifetime, the effects on aviation and radar receptors are not anticipated to interact in such a way as to result in combined effects of greater significance than the assessments presented for each individual phase.
NATS Allanshill and Perwinnes ATC PSRs due to operation of Wind Turbines	×	✓	×	
MoD Buchan AD PSR due to operation of Wind Turbines	×	✓	×	
Military low flying and UK SAR helicopter operations due to presence of obstacles (Wind Turbines in construction)	✓	×	×	
Receptor-led Effects				
Potential exists for interactions between impacts to aviation and radar and maritime operators in respect of the lighting and marking requirements for the Proposed Development's Wind Turbines. As aviation lighting and marking requirements differ from those of maritime operators, it has been necessary to interact with the Volume 2, Chapter 14: Shipping and Navigation assessment in order to ensure that the requirements of both aviation and maritime operators are taken into account. As a result, an outline LMP has been developed which outlines the lighting and marking mitigation measures which are designed to avoid confliction between aviation and maritime operators. No other inter-relationships exist with the potential to alter or introduce significant effects.				

15.12 Cumulative Effects Assessment

15.12.1 In terms of cumulative effects assessment, any potential impact on an aviation receptor is treated as a standalone impact. Whilst other wind farm developments may be located in close proximity, the impact and likely significant effect on each receptor is considered on a case-by-case basis. Although mitigation may have been agreed for other developments, discussion and agreement with aviation stakeholders will be carried out under separate arrangement, specific to the Proposed Development. It is considered that mitigation will be agreed and implemented following engagement with key stakeholders which will mitigate possible impacts resulting from the Proposed Development.

15.12.2 Following the implementation of mitigation measures for the Proposed Development there is no potential for the predicted impacts to interact with impacts from other developments and activities in the Aviation and Radar Study Areas that can lead to a cumulative effect on receptors. Consequently, no further assessment with respect to cumulative effects is required.

15.13 Proposed Monitoring

15.13.1 The assessment of impacts on aviation and radar as a result of the construction, O&M and decommissioning phases of the Proposed Development are predicted to be not significant in EIA terms. Based on the predicted impacts it is concluded that no specific monitoring is required.

15.14 Transboundary Effects

15.14.1 A screening of transboundary effects has been carried out (see Volume 3, Technical Appendix 4.5: Transboundary Effects Screening) and has identified that there were no likely significant transboundary effects with regard to aviation and radar from the Proposed Development upon the interests of European Economic Area (EEA) states.

15.15 Summary of Impacts, Mitigation, Likely Significant Environmental Effects and Monitoring

15.15.1 Information on aviation and radar within the Aviation and Radar Study Areas was collected through desktop review and consultation. This information is summarised in Table 15.12 which presents a summary of the potential impacts, Embedded Mitigation and Additional Mitigation measures and the conclusion of likely significant environmental effects in EIA terms in respect to aviation and radar. The impacts assessed include:

- Aberdeen Airport IFPs due to presence of obstacles (Wind Turbines in construction);
- NATS Allanshill and Perwinnes ATC PSRs due to operation of Wind Turbines;
- MoD Buchan AD PSR due to operation of Wind Turbines; and
- Military low flying and UK SAR helicopter operations due to presence of obstacles (Wind Turbines in construction).

15.15.2 Overall, it is concluded that there will be no likely significant environmental effects arising from the Proposed Development during the construction, O&M or decommissioning phases.

Table 15.12: Summary of Assessment of Significance

Description of Impact	Embedded Mitigation	Magnitude of Impact	Sensitivity of Receptor	Significance of Effect	Additional Mitigation	Significance Residual Effect	Proposed Monitoring
Construction Phase							
Aberdeen Airport IFPs due to presence of obstacles (Wind Turbines in construction)	N/A	High	High	Major adverse	Amend and re-publish airport IFPs	Negligible adverse	None
Military low flying and UK SAR helicopter operations due to presence of obstacles (Wind Turbines in construction)	ID 7, 8, 9, 13, 19, 22, 23, 25, 34, 47.	Negligible	High	Negligible adverse	N/A	Negligible adverse	None
O&M Phase							
NATS Allanshill and Perwinnes ATC PSRs due to operation of Wind Turbines	N/A	High	High	Major adverse	MRT Blanking and TMZ	Negligible adverse	None
MoD Buchan AD PSR due to operation of Wind Turbines	N/A	High	High	Major adverse	3-D NAIZ and/or bespoke solution via MoD/OWIC AD radar mitigation task force	Negligible adverse	None
Decommissioning Phase							
No effects on aviation and radar are expected during the decommissioning phase further to those effects identified in relation to the construction and O&M phases.							

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