Parc Ynni Calon y Gwynt

ENVIRONMENTAL STATEMENT

Chapter 14: Aviation, Radar and Telecommunications

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JULY 2026

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CONTENTS

TABLES

14 AVIATION, RADAR AND TELECOMMUNICATIONS

14.1 INTRODUCTION

14.1.1. This chapter presents the assessment of the likely significant effects of the Proposed Development with respect to aviation and radar, and telecommunications. This chapter should be read in conjunction with the development description provided in **Chapter 4: Description of the Proposed Development** and with respect to relevant parts of the following supporting documents:

- **Appendix 14A -** Parc Ynni Calon Y Gwynt Windfarm Reduced Lighting Scheme Proposal.

14.1.2. This chapter describes:

- The legislation, policy and technical guidance that has informed the assessment (**Section 14.2)**;
- Consultation and engagement that has been undertaken and how comments from consultees relating to aviation and radar, and telecommunications have been addressed (**Section 0**);
- The methods used for baseline data gathering (**Section 14.4**);
- Overall baseline (**Section 14.5**);
- The scope of the assessment for aviation and radar, and telecommunications (**Section 14.6**);
- The methods used for the assessment (**Section 14.7**);
- The assessment of aviation and radar, and telecommunications effects (**Section 14.8**);
- The assessment of cumulative (inter-project) effects (**Section 14.9**);
- Aviation and radar, and telecommunications residual effects assessments (**Section 14.10**); and
- Any further assessment/works to be adopted (**Section 14.11**).

LIMITATIONS AND ASSUMPTIONS

14.1.3. This chapter of the Draft Environmental Statement (ES) has been produced to address the developer's consultation duties and to enable consultees to have an informed view on the likely effects of the Proposed Development.

14.1.4. Some telecommunications service providers have not responded to the consultation requests. Where consultees did not respond, it was presumed their services would be unaffected by the Proposed Development, as from experience if assets were to be affected consultees would have responded.. Refer to **Table 14-6** for list of consultees.

14.1.5. Given the above, there is the possibility that the consultation process has not picked up some telecommunications links. However, the process has been as inclusive as possible.

14.2 RELEVANT LEGISLATION, PLANNING POLICY AND TECHNICAL GUIDANCE

14.2.1. This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to Aviation, Radar and Telecommunications.

PLANNING POLICY

Aviation and Radar

14.2.2. A summary of the relevant national and local planning policy is provided in **Table 14-1** below.

Table 14-1 - Planning Policy Relevant to the Aviation and Radar Assessment

Policy	Policy Context
National Planning Policy	
Future Wales: the National Plan 2040[1]	This states: "*Policy 18 - Renewable and Low Carbon Energy Developments of National Significance* *… 8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);*"
Welsh Government: Designing for Renewable Energy in Wales, 2023[2]	Paragraph 5.1 states: "*amongst the main factors that influence the siting of wind farms are: …….Aviation constraints"* Paragraph 5.5 states: "*In some locations it may be necessary to light wind turbines for reasons of civil or military aviation safety."* Paragraph 5.11 states: "*Large structures such as wind turbines have the potential to interfere with telecommunication links, television reception, radio communication and flight paths, through physical obstruction or reflection of signals. The correct siting and layout of wind turbines can reduce these interferences. Early engagement should take place with the appropriate authorities, including NATS, the Ministry of Defence, and Operators of Officially Safeguarded Civil Aerodromes to ensure these matters have been properly considered in the design process.*"

[1] Welsh Government (2021). Future Wales: the national plan 2040. (Online) Available at: https://gov.wales/future-walesnational-plan-2040 (Accessed May 2026).

[2] Welsh Government (2023). Design for Renewable Energy in Wales. Available at Designing for Renewable Energy in Wales | GOV.WALES (Accessed May 2026).

Policy	Policy Context
Local Planning Policy	
Powys Local Development Plan 2011 - 2026[3] (adopted April 2018)	With respect to Aviation and Radar, there is no content.

Telecommunications

14.2.3. A summary of the relevant national and local planning policy is provided in **Table 14-2** below.

Table 14-2 - Planning Policy Relevant to the Telecommunications Assessment

Policy	Context
National planning policy	
Future Wales: The National Plan 2040[1]	This states that these types of DNS will be permitted subject to: *"Policy 18 - Renewable and Low Carbon Energy Developments of National Significance"* And criterion:*"7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;"*
Local planning policy	
Powys Local Development Plan 2011 - 2026[4] (adopted April 2018)	With respect to Telecommunications,, there is no content.

TECHNICAL GUIDANCE

14.2.4. A summary of the technical guidance for Aviation and Radar is provided in **Table 14-3** and Telecommunications in **Table 14-4**.

[3] Powys County Council (2018) Powys Local Development Plan (2011-2026). (Online) Available at: https://en.powys.gov.uk/article/4898/Adopted-LDP-2011---2026 (Accessed May 2026).
[4] Powys County Council (2018) Powys Local Development Plan (2011-2026). (Online) Available at: https://en.powys.gov.uk/article/4898/Adopted-LDP-2011---2026 (Accessed May 2026).

Table 14-3 - Technical Guidance Relevant to the Aviation and Radar Assessment

Technical Guidance Document	Context
CAP 168 - Licensing of Aerodromes[5]	Chapter 4 - The Assessment and Treatment of Obstacles, Paragraph 1.1, states: "*The effective utilisation of an aerodrome may be influenced by natural features and manufactured constructions inside and outside its boundary. These may result in limitations on the distance available for take-off and landing and on the range of meteorological conditions in which take-off and landing can be undertaken. For these reasons, certain areas of the local airspace must be regarded as integral parts of the aerodrome environment. The degree of freedom from obstacles in these areas is as important in the granting and retention of an aerodrome licence as the more obvious physical requirements of the runways and their associated runway strips and is determined by survey in accordance with CAP1732, Aerodrome Survey Guidance and CAP232, Aerodrome Survey Information."*
CAP 670 - Air Traffic Services Safety Requirements[6]	Part B, Section 4, GEN 01 states: "*GEN01.6 Wind turbine developments need to be considered as a safeguarding activity.* *GEN01.7 The ATS Provider or ANSP is responsible for ensuring, as far as is reasonably practicable, that such development does not impact on the safety of the ATS environment.* *GEN01.8 The ATS Provider or ANSP is responsible for deciding whether or not it can accept any degradation to the ATS environment.* *GEN01.9 If the ATS Provider or ANSP predicts that the degradation is unacceptable then it should make representations to the appropriate Local Authority.*"
CAP 738 - Safeguarding of Aerodromes[7]	Chapter 1 - Safeguarding of Aerodromes, Paragraph 1.1, states: "*A process of consultation between a Local Planning Authority (LPA) and consultees, which is made obligatory by Statutory Direction, safeguards some aerodromes and aeronautical technical sites in the United Kingdom. This is called 'statutory' or 'official' safeguarding*".
CAP 764 (2025) - CAA Policy and Guidelines on Wind Turbines[8]	Chapter 2 - Safeguarding and Mitigation, Paragraph 2.42 states: *"Where an ANSP determines that it is likely that a planned wind turbine development would result in any of the above effects on their CNS infrastructure, this may not, in itself, be sufficient reason to justify grounds for rejection of the planning application. The ANSP must determine whether the effect on the CNS infrastructure has a negative impact on the provision of the ATS. The developer should pay for an*

[5] Civil Aviation Authority (2022). Licensing of Aerodromes. CAP 168. (Online) Available at: CAP 168: Licensing of Aerodromes | UK Civil Aviation Authority (Accessed May 2026).
[6] Civil Aviation Authority (2019). Air Traffic Services Safety Requirements. CAP 670. (Online) Available at: CAP 670: Air Traffic Services Safety Requirements | UK Civil Aviation Authority (Accessed May 2026).
[7] Civil Aviation Authority (2020). Safeguarding of Aerodromes. CAP 738. (Online) Available at: https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-738 (Accessed May 2026).
[8] Civil Aviation Authority (2025). CAA Policy and Guidelines on Wind Turbines. CAP 764. (Online) Available at: https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-764 (Accessed May 2026).

Technical Guidance Document	Context
	assessment of appropriate mitigating actions that could be taken by the ANSP and/or wind energy developer to deal with the negative impact. The position of an ANSP at inquiry would be significantly degraded if they had not considered all potentially appropriate mitigations." *And* Chapter 3 - Considerations during planning, Paragraph 3.6 states: *Whilst not definitive, it should be anticipated that any wind turbine development within the following criteria might have an impact upon civil aerodrome - related operation:* *. a. Unless otherwise specified by the aerodrome or indicated on the aerodrome's published wind turbine consultation map, within 30 km of an aerodrome with a surveillance system facility. The distance can be far greater than 30 km depending upon a number of factors including the type and coverage of the surveillance system and the particular operation at the aerodrome;* *b. Within airspace coincidental with any published Instrument Flight Procedure (IFP) to take into account the aerodrome's requirement to protect its IFPs;* *c. Within 17 km of a non-surveillance system equipped licensed26 aerodrome with a runway of 1100 m or more;* *d. Within 5 km of a non-surveillance system equipped licensed aerodrome with a runway of less than 1100 m;* *e. Within 4 km of a non-surveillance system equipped unlicensed aerodrome with a runway of more than 800 m;* *f. Within 3 km of a non-surveillance system equipped unlicensed aerodrome with a runway of less than 800 m.*
Civil Aviation Authority (2025) Civil Aviation Publication 493 Manual of Air Traffic Services, Ed. 12.0.[9]	The Manual of Air Traffic Services contains procedures, instructions and information which are intended to form the basis of air traffic services within the United Kingdom.
Civil Aviation Authority Civil Aviation Publication 393 The Air Navigation Order (2016) and Regulation, Version 6 (2021).[10]	The Air Navigation Order includes The Civil Aviation Authority Regulations made under powers in the Civil Aviation Act (1962) and the Air Navigation Order (2016).
CAP 774 UK Flight Information Services (2021) Version 4[11]	The UK Flight Information Services (CAP 774) details the suite of air traffic services (ATS) which (excluding aerodrome services) are the only services provided in class G airspace within the UK Flight Information Region and, where notified, elements of which are also provided to VFR flights operating in class E airspace)

[9] Civil Aviation Authority (2025) Civil Aviation Publication 493 Manual of Air Traffic Services, Ed. 12.0. Online) Available at: https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-493 (Accessed May 2026).

[10] Civil Aviation Authority Civil Aviation Publication 393 The Air Navigation Order (2016) and Regulation. (Online) Available at: https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-393 (Accessed May 2026).

[11] CAP 774 UK Flight Information Services (2021) Version 4. (Online) Available at: https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-774 (Accessed May 2026).

Technical Guidance Document	Context
Military Aviation Authority (MAA)Regulations (2014 *et al)*[12]	The document set provides the Regulation for military aviation.
Planning Circular 2/2003 Safeguarding of Aerodromes, Technical Sites and Military Explosive Storage Areas[13]	Planning Circular 2/2003 sets out criteria outlining how planning authorities must consult with aviation Consultees and which processes they must follow in order to ensure that Consultee responses to proposals are taken into account. Where planning authorities are minded to award planning permission against the advice of NATS, the CAA (Civil Aviation Authority) or the MOD, they are obliged to inform Welsh Ministers.
Technical Advice Note (TAN) 8: Planning for Renewable Energy (2005)[14] (revoked however used as a guide for this assessment)	Paragraph 2.35 states: *"Developments within a specified radius of major airports and aerodromes are subject to mandatory consultation with the Civil Aviation Authority (CAA) and/or the Ministry of Defence (MoD) under the Town and Country Planning (Aerodromes and Technical Sites) Directive 1992. The CAA will inform the applicant of any civilian airfields that are likely to be affected, but it is the responsibility of the applicant/ planning authority to consult the airfield management at the airfield in question."* Paragraph 2.36 states: *"Lights are only required on structures that are over 150 m high."* Paragraph 2.38 states: *"Any large structure is liable to show up on radar, but wind turbines can present a particular problem as they can be interpreted by radar as a moving object, which is only intermittently seen (as the nacelle rotates to face the wind). There is a consultation zone and an advisory zone around every civilian and military air traffic radar, but objections may sometimes be raised in respect of developments further afield. Consultations are also required in respect of other defence and meteorological radar. Developers will need to closely consult over aviation and other radar issues, and the British Wind Energy Association web site gives details of how this can be achieved. Local planning authorities should be aware of the statutory consultees applicable to their particular area."* Paragraph 2.39 gives a list of aviation (amongst other) consultees in addition to statutory consultees. The aviation consultees referred to are: The Civil Aviation Authority (CAA), the Ministry of Defence (MoD), and National Air Traffic Services (NATS).

[12] MAA regulatory publications (2014, last updated 2019). (Online) Available at: https://www.gov.uk/government/collections/maa-regulatory-publications (Accessed May 2026).

[13] Planning Circular 2/2003: Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2003. (Online) Available at: https://www.gov.uk/government/publications/safeguarding-aerodromes-technical-sites-and-military-explosives-storage-areas (Accessed May 2026).

[14] Geography & Technology, Welsh Government (2005). Technical Advice Note (TAN) 8: Planning for Renewable Energy. (Online) Available at https://www.gov.wales/sites/default/files/publications/2018-09/tan8-renewable-energy_0.pdf (Accessed May 2026).

Telecommunications

Table 14-4 - Technical Guidance Relevant to the Telecommunications Assessment.

Technical Guidance Document	Context
Practice Guidance - Planning Implications of Renewable and Low Carbon Energy.[15] Welsh Assembly Government (2011). Para 3.4.24-3.4.26	The assessment will take due cognisance of the following paragraphs from the guidance document: *"Wind turbines, including micro turbines, can also interfere with telecommunications (i.e. TV, radio and phone signals) by blocking or deflecting those requiring line of sight or by the scattering of transmission signals. Links crossing the site of wind farms should be identified by consultation with Ofcom. Ofcom will check whether any part of a wind turbine site, either individual turbines or part of a wind farm, falls within 0.5 - 1.0km (depending on the signal frequency) of the path of a fixed link, and if so, will instruct the developer to contact the appropriate fixed link operator. Developers may also wish to contact interested bodies directly, including local utility companies and emergency services.* *Scattering of signals mainly affects domestic TV (both analogue and to a lesser extent digital TV) and radio broadcasts. Wind turbines can affect domestic television reception up to 5km from the turbines. Terrestrial television transmissions for domestic reception within the UK are the joint responsibility of the BBC and Ofcom.* *Where fixed link signals are potentially blocked by proposed wind turbines, a detailed investigation of the likely impact should be sought from a competent supplier. It is often possible to mitigate impacts by careful siting of individual turbines within a site so that turbine blades avoid a buffer zone, typically 100m either side of the signal path. Failing this, it may be necessary for the developer to pay for a signal to be re-routed around the wind turbine(s). Where site investigations reveal a likely impact on domestic radio or TV reception, various solutions are possible including upgrading of domestic aerials or delivery of the signal by other means, for example by cable."*
Technical Advice Note 8: Planning for Renewable Energy[3] (TAN8) Paras 2.29-2.30 (revoked however used as a guide for this assessment)	TAN 8 states: "*A wind turbine can interfere with electromagnetic transmissions in two ways - by emitting an electromagnetic signal itself, and by interfering with other electromagnetic signals.* *Provided careful attention is paid to siting, wind turbines should not cause any significant problems of electromagnetic interference, i.e. adverse effects on communication systems which use electromagnetic waves as the transmission medium (e.g. television, radio or microwave links). Specialist organisations responsible for the operation of the electromagnetic links typically require a 100m clearance either side of a line of sight link from the swept area of turbine blades*." The document goes on to recommend a list of possible consultees referring to the Office of Communications (OFCOM) which holds a central register of all civil radio communication operators in the UK and acts as a central point of contact for identifying specific consultees

[15] Welsh Assembly Government (2011). Practice Guidance - Planning Implications of Renewable and Low Carbon Energy. (Online) Available at: https://gov.wales/sites/default/files/publications/2018-09/planning-implications-renewable-low-carbon-energy-development.pdf (Accessed May 2026).

Technical Guidance Document	Context
	relevant to a site. It does recognise that this list is not exhaustive and that it may be necessary to consult local utility companies and emergency services along with any other organisations which may be deemed relevant.

14.3 CONSULTATION AND ENGAGEMENT

OVERVIEW

14.3.1. The assessment has been informed by consultation response and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 2.4** of **Chapter 2: Approach to EIA**.

SCOPING DIRECTION

14.3.2. A Scoping Direction (**Appendix 1B**) was issued by PEDW on behalf of the Welsh Ministers on 14 May 2025. A summary of the relevant responses received in the Scoping Direction in relation to Aviation and confirmation of how these have been addressed within the assessment to date is presented in **Table 14-5**.

Table 14-5 - Summary of EIA Scoping Direction Responses for Aviation, Radar and Telecommunications

Consultee	Consideration	How Addressed in this ES
Ministry of Defence (MoD) (MoD queries are handled by the Defence Infrastructure Organisation (DIO))	Raised concerns that the development may introduce a physical obstruction to military aviation operations. This must be addressed within this ES.	Wind Farm Aviation Safeguarding Ltd (WFAS) has undertaken analysis of the effects on military operations. MoD compliant infrared lighting will be installed on all turbines as set out in **Appendix 14A**.
National Air Traffic Services (NATS)	NATS have stated that the development will have an impact on the Clee Hill radar. This must be addressed within this ES.	WFAS has undertaken analysis and consultation will continue with NATS as to appropriate mitigation as set out in 14.3.4
PEDW EIA Scoping Direction	PEDW welcome that impacts on telecoms and electromagnetic signals will be addressed in the ES. PEDW concur that TV interference can be scoped out.	Consultation has been undertaken with relevant non-statutory consultees, i.e., operators who may be concerned that the proposal could affect their services, see **Table 14-6**.

TECHNICAL ENGAGEMENT

14.3.3. A summary of the technical engagement in relation to Aviation, Radar and Telecommunications undertaken to date is outlined in **Table 14-6**.

Table 14-6 - Technical Engagement on the Aviation, Radar and Telecommunications Assessment

Issue Raised	Consultee	Consideration	How Addressed in this Draft ES
Aviation and Radar	DIO	An independent assessment was undertaken on MoD operations by an independent aviation consultant, Wind Farm Aviation Safeguarding Ltd (WFAS).	The assessment has determined the following: that there should be no significant effects on MoD operations but highlighted the need for MoD compliant infra-red lighting. MoD compliant infrared lighting will be installed on all turbines as set out in **Appendix 14A**.
	NATS	As part of the WFAS assessment NATS Enroute Infrastructure was analysed and it was found that all the turbines will be visible to the Clee Hill radar. WFAS were of the view that NATS En Route Ltd (NERL) will likely object due to the location of the Proposed Development and mitigation will be required. This was also indicated by the NATS Technical and Operational Assessment (TOPA) response to the Scoping Report.	NATS determined that in relation to their Clee Hill Radar *"…the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated…. This has been deemed to be unacceptable from an En-Route perspective."* Further consultation will be undertaken with NATS and NERL to determine appropriate technical mitigation.
Telecommunications	Airwave Solutions	Consulted as part of exercise	No response
	Arqiva / National Grid Wireless (BBC, ITV and the majority of the UK's radio	Consulted as part of exercise	Responded with no objection

Issue Raised	Consultee	Consideration	How Addressed in this Draft ES
	transmission network)		
	BT	Consulted as part of exercise	Responded with no objection
	CSS Spectrum Management Services Ltd	Consulted as part of exercise	No response
	JRC Spectrum Management	Consulted as part of exercise	Responded with no objection
	MLL	Consulted as part of exercise	Responded with no objection
	Mobile Broadband Network Limited (Three, Orange and T-Mobile)	Consulted as part of exercise	Responded with no objection
	Ofcom	WSP reviewed Ofcom Spectrum Information System[16] to identify potential affected links.	No links identified.
	Vodafone	Consulted as part of exercise	Responded with no objection

14.3.4. On-going consultation with NATS will determine the technical mitigation on the Clee Hill radar.

14.3.5. Technical engagement with consultees in relation to Telecommunications is ongoing at the time of writing this ES.

14.4 DATA GATHERING METHODOLOGY

STUDY AREA

14.4.1. Due to the nature of aviation, radar and telecommunications impacts are based on the locations, blade tip height, hub height and rotor diameter of the proposed wind turbines as illustrated on **Figure 3.1.**

Civil Aviation

14.4.2. Additionally, the aviation Study Area and assessment have been determined by, and are dependent on, the maximum operating ranges of each of the radar systems scoped into the assessment. The operational range of the radar system is dependent on the function of the radar, the operational requirement of the radar and on the type of radar used. The ranges of those radars and, subsequently, the topic-specific study area will vary depending on the technical specification of each

[16] OFCOM Spectrum Information System, https://www.ofcom.org.uk/spectrum/frequencies/spectrum-information-system-sis (Accessed May 2026)

radar system and, possibly, between different installations of the same system. The same factors apply to other aviation infrastructure (radios/beacons).

14.4.3. The assessment of effects of the Proposed Development is based upon the guidance laid down in CAA Publication CAP 764[8] Policy and Guidelines on Wind Turbines, Version 7 Dec 2025.

14.4.4. Taken collectively the reference and guidance sources establish that:

- Officially safeguarded aerodromes and aerodromes with a surveillance radar facility need to be consulted if the proposed wind turbines are within 30 km;
- Within airspace coincidental with any published Instrument Flight Procedure (IFP) to take into account the aerodrome's requirement to protect its IFPs;
- Consultation with the operators of officially safeguarded technical sites is required if the proposed wind turbines are within 10 km;
- Further assessment and/or consultation will be required if turbines are planned within:
  - 17 km of a licensed aerodrome within a runway of 1,100 m or more;
  - 5 km of a licensed aerodrome with a runway of less than 1,100 m;
  - 4 km of an unlicensed aerodrome with a runway of more than 800 m; and/or
  - 3 km of an unlicensed aerodrome with a runway of less than 800 m.

14.4.5. CAP 764 goes on to state that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved or within which they will always be objected to. These ranges are intended as a prompt for further discussion between developers and aviation stakeholders. As well as examining the technical impact of wind turbines on Air Traffic Control (ATC) facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria laid down in CAP 168[5] to determine whether a proposed development will breach obstacle clearance criteria.

14.4.6. The maximum Study Area has, therefore, been informed by the operational ranges of all of the civil airport radars that have the capability of surveilling the airspace at the wind farm location.

Ministry of Defence

It is necessary to take into account the aviation and air defence activities of the Ministry of Defence (MoD). The issues that will be assessed include the likely significant effect of the Proposed Development on:

- MoD Airfields, both radar and non-radar equipped;
- MoD remote ATC radars;
- MoD Air Defence Radars (ADR);
- Military Aviation Authority Aerodrome Design and Safeguarding; and
- Military Low Flying.

14.4.7. The maximum Study Area has, therefore, been informed by the operational ranges of all of the military ATC and ADR radars that have the capability of surveilling the airspace at the wind farm location.

NATS

14.4.8. It is necessary to take into account the possible effects of wind turbines upon NATS radar systems, a network of primary and secondary radars and navigation facilities around the country.

14.4.9. The maximum Study Area has, therefore, been informed by the operational ranges of all of the NATS radars that have the capability of surveilling the airspace at the wind farm location.

Meteorological Office

14.4.10. The UK Met Office maintain a network of radars around the country to assist in weather prediction.

14.4.11. The maximum study area has, therefore, been informed by the operational ranges of all of the Met Office radars that have the capability of surveilling the airspace at the wind farm location.

14.4.12. Taken collectively the various radars (civil airport radars, NATS radars, military ATC and ADR radars and Met radars), the radar types and ranges have determined the maximum study area.

DESK STUDY

14.4.13. A desk-based consultation exercise was undertaken to identify any aviation, radar or telecommunications interests that may be affected by the Proposed Development. The results of the exercise are discussed in **Section 14.3** and with details in **Table 14-5** and **Table 14-6.**

Table 14-7 - Data Sources used to Inform the Aviation and Radar Assessment

Organisation	Data Source	Data Provided
NATS	UK Integrated Aeronautical Information Package (IAIP)	Uk Airspace Structure
CAA/NATS	UK Airspace Charts (1:250,000 and 1:500,000)	UK Airspace Structure
MoD/DIO	UK Military AIP	Military aviation infrastructure
OFCOM	Protected radar list	Safeguarded radar infrastructure
WFAS	Review' Version 5 Radar Modelling Software	Radar Line of Sight values

14.5 OVERALL BASELINE

CURRENT BASELINE

14.5.1. The Proposed Development lies within unrestricted airspace (Class G) but has radar line of sight to the NATS radar at Clee Hill and is within Low Flying Area (LFA) 7, a military low flying training area and close to the boundary of Tactical Training Area (TTA) 7 a further area embedded within the LFA and where fixed wing fast jet and tactical transport aircraft can operate down to 100ft and 150ft, respectively, above ground level.

14.5.2. NATS have confirmed that the Proposed Development will be visible to the radar. See **Table 14-5** and **Table 14-6.**

14.5.3. DIO have confirmed their concerns on effects low flying in the area as a result of the Proposed Development. See **Table 14-5** and **Table 14-6.**

14.5.4. No microwave links have been identified in the study area or the wider area near to the Proposed Development.

FUTURE BASELINE

14.5.5. With mitigation of the anticipated effects, and on the basis of available information, no changes are envisaged to the future aviation baseline.

14.5.6. On the basis of the information currently available in relation to telecommunications, no changes to the baseline conditions are anticipated in the event that the Proposed Development does not proceed.

EMBEDDED MEASURES

14.5.7. A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 4.7**. **Table 14-8** outlines how these embedded measures influence the Aviation, Radar and Telecommunications assessment.

Table 14-8 - Summary of the Embedded Environmental Measures

Area	Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Construction / Decommissioning Phase				
Aviation and radar	Military Low Flying	Tall objects can represent a vertical obstacle to flight and, potentially, pose a flight safety risk.	To facilitate safe flight, day or night, there are regulations governing the procedures that must be followed to ensure the timely dissemination of information regarding the construction of anemometer masts and wind turbines.	In accordance with aviation safeguarding management requirements, information regarding any such construction must be passed to the Defence Geographical Centre (DGC) and the General Aviation Awareness Council (GAAC) in advance of the commencement of turbine construction and then be updated regarding location, height and lighting type. Information will then be promulgated within the civil UK Integrated Aeronautical Information Package (UK IAIP), the main resource for information for all of the UK airspace, as well as the Military Aeronautical Information Publications.
Telecommunications	Fixed link	Interference with microwave fixed link.	If highlighted by operator then mitigation options would be investigated such as micrositing or other technical solutions. A 50m micrositing allowance has been requested which can be used to microsite the turbine to mitigate potential interference.	DNS planning condition

Area	Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Operation Phase				
Aviation and radar	Military Low Flying	Potential obstacles for MoD low flying exercises.	Aviation lighting, including MoD compliant infra-red lighting will be fitted on the Proposed Development.	DNS planning condition
	NATS radar	Potential visibility on Clee Hill radar.	Mitigation options to be discussed with NATS.	DNS planning condition
Telecommunications	Fixed link	Interference with microwave fixed link.	If highlighted by operator, then mitigation options would be investigated such as micrositing or other technical solutions. A 50m micrositing allowance has been requested which can be used to microsite the turbine to mitigate potential interference.	DNS planning condition

14.6 SCOPE OF THE ASSESSMENT

OVERVIEW

14.6.1. The scope of the following aviation assessment is based upon a review of the policy guidance and baseline information detailed in **Section 14.4, Table 14-2** and **Section 14.5.**

Aviation and Radar

14.6.2. The aviation assessment has considered the likely aviation and radar effects that might result from line-of-sight between the turbines and the radar covering the area during the operational period of the Proposed Development, as detailed in **Section 14.8.**

14.6.3. Algorithms within radar systems are established to prevent static objects being detected and to ensure that only moving objects are presented to the controllers' screens. During the construction phase the blades will be static and will not be detected. There is a well-established procedure for the dissemination of information relating to construction and considered essential for the safety of flying operations, both civil and military, to allow such aviation operations to be planned and to continue accordingly. The construction activities, when conducted in accordance with mandated procedure, will not pose a risk to aviation and there should be no effect; construction activities can be scoped out from further consideration within aviation.

14.6.4. There is a well-established procedure for the dissemination of information relating to decommissioning activities and considered essential for the safety of flying operations, both civil and military, to allow such aviation operations to be planned and to continue accordingly. The decommissioning activities, when conducted in accordance with mandated procedure, will not pose a risk to aviation and there should be no effect; the inherent embedded mitigation means that de-construction activities can be scoped out from further consideration within aviation.

14.6.5. There are no non-radar equipped licensed aerodromes within the recommended consultation distance, and these can be scoped out from further consideration.

14.6.6. There are no unlicensed aerodromes, hang-gliding sites or glider sites within the stipulated consultation distances and these can be scoped out from further consideration.

Telecommunications

14.6.7. The telecommunications assessment considers electromagnetic interference with telecommunications within the Site.

SPATIAL SCOPE

14.6.8. The spatial scope of the assessment of Aviation, Radar and Telecommunications covers the area of the Proposed Development contained within the Proposed Red Line Boundary, together with the Zones of Influence (ZoIs) that have formed the basis of the Study Area described in **Section 14.4**.

TEMPORAL SCOPE

14.6.9. Aviation, Radar and Telecommunications is primarily an operational effect of the Proposed Development. Therefore, the temporal scope of the assessment of Aviation, Radar and Telecommunications covers the operational period of the Proposed Development.

14.6.10. The only potential effect during construction or decommissioning will be the presence of large cranes. The Applicant will be required to inform identified Aviation, Radar and Telecommunications stakeholders of large crane activity. Standard aviation lighting for cranes (anticipated to be used during construction of the Proposed Development) in in excess of 150 metres will be required.

POTENTIAL RECEPTORS

14.6.11. At the time of writing this ES, there are no potential telecommunication receptors which have been identified through consultation with operators.

14.6.12. The potential aviation and radar receptors that were considered are detailed in **Section 14.4.**

LIKELY SIGNIFICANT EFFECTS

Aviation and Radar

14.6.13. The effects on receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 14-9**.

Table 14-9 - Likely Significant Effects on Aviation Receptors Scoped in for Further Assessment

Receptor Type	Likely Significant Effects
Operation	
Military low flying	The turbines could represent a physical obstruction to low flying.
NATS Clee Hill radar	Potential interference on the radar

14.6.14. The effects detailed in **Table 14-10** have been scoped out from being subject to further assessment because there are none within the stipulated consultation distance or radar modelling demonstrates that there would be no potential for effects.

Table 14-10 - Summary of Pathways and Effects Scoped out of this Assessment

Potential Effects	Justification
Licensed civil airport (radar)	None within the stipulated consultation distance
Licensed civil airport (non-radar)	None within the stipulated consultation distance
Unlicensed Airport, Gliding sites, Hang-gliding and parachute sites	None within the stipulated consultation distance (although it should be noted that such sites can be establish at fairly short notice)
Military Air Traffic Control radar	None listed within the DIO response to PEDW
Military Air Defence Radar	Radar modelling demonstrated that there were none that could be affected and none within the DIO response to PEDW
Met Office radars	None within the stipulated consultation distance

Telecommunications

14.6.15. The effects on Telecommunications receptors include electronic interference or disruption to services. Technical solutions to any infrastructural constraint will be sought during the pre-application process to minimise effects upon it. A consultation has been undertaken and to date nothing has been identified.

14.7 ASSESSMENT METHODOLOGY

OVERVIEW

14.7.1. The generic project-wide approach to the assessment methodology is set out in **Chapter 2: Approach to EIA.** However, whilst this has informed the approach that has used in this Aviation and Radar and Telecommunications assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of aviation within this assessment.

Aviation and Radar

14.7.2. Radar modelling has been undertaken using specialist propagation prediction software (RView) which has been designed and refined specifically for the task. RView uses a comprehensive systems database which incorporates the safeguarding criteria for a wide range of radar and radio navigation systems and models terrain using the Ordnance Survey (OS) Landform Panorama digital terrain model, which has a post spacing of 50 metres and has a root mean square (RMS) error of 3 metres. The results are verified using the Shuttle Radar Topography Mission (SRTM) dataset, a separate smoothed digital terrain model with data spacing of 3 arc seconds. By using two separate and independently generated digital terrain models, anomalies are identified and consistent results assured. RView models the refractive effects of the atmosphere on radio waves and the First Fresnel Zone. RView can perform calculations using the true Earth Radius at the midpoint between the radar and the wind turbine or the simplified 4/3 Earth Radius model.

Telecommunications

14.7.3. The basis of the assessment has been to consult with a number of organisations known to have an interest within the areas stated in the scope. The consultation list was drawn together based on advice given in TAN 8 and previous wind farm experience.

14.7.4. The risk of impacts on telecommunications has been assessed through consultation with the relevant organisations. The consultation list was drawn together based on identifying the local telecommunication bodies, other relevant parties identified by Spectrum Licensing (Ofcom).

DETERMINATION OF SIGNIFICANCE

14.7.5. In order to assess the effect that a wind farm has on aviation operations it is necessary to undertake an assessment of the potential technical effects on Communication, Navigation and Surveillance (CNS) systems and to then determine if the technical effect would lead to a significant effect on operations or flight safety..

14.7.6. To determine the potential effects of the Proposed Development on aviation operations, the sensitivity of receptors were considered in relation to the magnitude of effect. Significance criteria for aviation impacts are typically difficult to establish; there is no standard definition, and they are not strictly based on the sensitivity of the receptor or magnitude of change but on whether the industry

regulations for technical safeguarding, safe obstacle avoidance or radar separation (from radar clutter) can be maintained in the presence of wind turbines. Any anticipated impact upon aviation stakeholders which results in restricted operations will be considered to be of significance, but it is down to the affected stakeholder as to whether any effect is significant on their operations or not.

14.7.7. In this sense aviation does not conform to normal EIA significance assessment techniques or criterion. Any effects are considered to be significant.

14.8 ASSESSMENT OF AVIATION, RADAR AND TELECOMMUNICATION EFFECTS

14.8.1. In relation to aviation and radar the potential effects are listed at **Table 14-9**, each of which will require mitigation.

14.8.2. Should evidence be brought forward to establish that the proposed development would likely impact Aviation, Radar and Telecommunication infrastructure to a degree that required mitigation, the applicant is prepared to support the implementation of specific and proportionate mitigation measures, identified to address the evident impacts of the proposed development. Discussions will be undertaken to agree a technical approach and planning condition(s) that would mitigate any identified impacts.

14.9 ASSESSMENT OF CUMULATIVE (INTER-PROJECT) EFFECTS

14.9.1. A cumulative effects assessment (CEA) has been undertaken for the Proposed Development which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects is set out in **Section 2.7** of **Chapter 2: Approach to EIA**.

14.9.2. The proposed turbines would potentially be visible on the NATS Clee Hill radar. Consultation will continue to agree a technical approach and a planning condition that would mitigate radar impacts.

14.9.3. The MoD have highlighted that there may be a requirement for aviation lighting. An aviation lighting scheme has been prepared which should address the MoD concerns (**Appendix 14A**).

14.9.4. With mitigation agreed on the NATS Clee Hill radar, and an acceptable lighting scheme agreed with the MoD, then the Proposed Development should not result in any technical or operational effects and cannot, therefore, contribute to any cumulative aviation or radar effects.

14.9.5. All schemes have to mitigate their potential effects and therefore no significant cumulative effects can occur.

14.10 RESIDUAL EFFECTS

14.10.1. With mitigation agreed on the NATS Clee Hill radar, and an acceptable lighting scheme agreed with the MoD and the CAA, then the only residual effect (although not on aviation) will be that of aviation lighting, which is assessed within **Chapter 7: Landscape and Visual.**

14.11 FURTHER WORK TO BE UNDERTAKEN

14.11.1. Further discussions with any telecommunications operators that highlight any impacts will be undertaken to mitigate any effects on microwave links if required; this information will be made available to consider with the application if needed and once an agreed approach has been finalised. The consultation to date has identified no issues.

14.11.2. As stated above, further consultation with NATS is being undertaken. The results of this consultation, and any measures agreed to mitigate effects on radar, will be made available and reported in the final submission.

14.11.3. The aviation lighting design was approved by the CAA on the 6th July 2026.

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