



Foel Fach Wind Farm Limited.

Foel Fach Wind Farm - Environmental Statement Volume II

Main Written Statement – Chapter 12

Project Reference: 664094

This chapter is summarised within the Non-Technical Summary of this Environmental Statement

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12 AVIATION

12.1 Introduction

12.1.1 This chapter presents an assessment of likely significant effects arising from the construction, operation and decommissioning of the Proposed Development upon aviation interests.

12.2 Consultation and Scope

Scoping Direction

12.2.1 The scope of this assessment has been established through an ongoing scoping process. This has involved the production of an EIA Scoping Report (provided in **ES Volume III, Appendix 1.1: EIA Scoping Report**), which was submitted to PEDW in July 2024. Further information on the scoping process can be found in **ES Volume II, Chapter 4: Approach to the EIA**.

12.2.2 The Scoping Direction, a copy of which is included in **ES Volume III, Appendix 1.2: EIA Scoping Direction and Addendum**, was received on 5 December 2024 and 18 December 2024. **Table 12.1** summarises the key Scoping Direction comments related to this assessment and sets out how these have been addressed by the Applicant.

Table 12.1 Summary of Scoping Direction Comments Relevant to this Aviation Assessment

ID no.	Issue	Comment Raised	Applicant Response
ID.18	Consultation with aviation stakeholders	PEDW recommends the applicant liaises directly with NATS En Route (NERL) and the Defence Infrastructure Organisation (DIO) to ensure their concerns are addressed and appropriately reported in the ES.	Effects on NERL and Ministry of Defence (MoD) assets and activities are addressed in Section 12.6 and 12.8 of this Chapter. NERL has been consulted on potential methods of mitigation of the effects on their radars. DIO has indicated that potential effects on low flying would be mitigated by planning conditions requiring turbine lighting and pre-construction notification of the details of the Proposed Development. These are



ID no.	Issue	Comment Raised	Applicant Response
			required by law therefore further pre-submission consultation with DIO is not required.
<i>ID.64</i>	Aviation warning lighting	PEDW recommends the applicant liaises directly with Natural Resources Wales (NRW) and Eryri National Park Authority (ENPA) to agree at least one night-time viewpoint within the Eryri National Park / Snowdonia National Park.	ES Volume II, Chapter 9: Landscape and Visual assesses the effects of aviation lighting from the Eryri / Snowdonia National Park and includes three nighttime viewpoints. Further detail is provided within that chapter and specifically Table 9.1.
<i>NATS Safeguarding email dated 8th August 2024</i>	Effects on NERL radar	This development is likely to cause false primary plots to be generated on the St Anne's and Great Dun Fell radars. A reduction in the radars' probability of detection, for real aircraft, is also anticipated.	Effects on NERL radars are addressed in Section 12.6 and 12.8 of this Chapter.
<i>Letter from Defence Infrastructure Organisation dated 16th August 2024</i>	Effects on military low flying	<p>The addition of turbines in this location has the potential to introduce a physical obstruction to low flying aircraft operating in the area.</p> <p>To address the impact up on low flying given the location and scale of the development, the MoD would require that conditions are added to any consent issued requiring that the development is fitted with aviation safety lighting and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction.</p>	<p>Effects on military low flying are addressed within this Chapter.</p> <p>The proposed aviation safety lighting is set out in Table 12.3 and will be submitted to the MoD for comment.</p>



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Additional Consultation

12.2.3 In addition to the consultation set out in **Table 12.1**, the applicant has consulted Hawarden Airport on the potential effects of the Proposed Development.

Scope of the Assessment

12.2.4 The technical scope of this assessment has been established through an ongoing scoping process. As a result of this process, the technical scope of the assessment reported in this chapter comprises:

- effects on NATS En Route (NERL) primary surveillance radars (PSRs), specifically Great Dun Fell and St Annes during the operational phase;
- effects on Hawarden Airport radar (operational phase) and instrument flight procedures (IFPs) (all phases); and
- effects on military low flying (all phases).

12.2.5 The following matters are considered unlikely to result in likely significant effects, and therefore have been scoped out of the assessment, as agreed through the EIA scoping process:

- effects on air traffic control PSRs other than Great Dun Fell, St Anne's and Hawarden
- effects on air defence radars
- effects on Met Office radars
- effects on airfields other than Hawarden, and
- effects on aeronautical radio navigation aids and communications facilities.

12.2.6 Effects on the NERL PSRs at Burrington, Claxby, Clee Hill, Debden and Manchester, which are listed in the NERL scoping response dated 8 August 2024, are scoped out of further assessment as no significant effects would occur in relation to these receptors. This is evidenced through the NERL scoping response, which states that Great Dun Fell and St Anne's are the only two NERL PSRs with predicted line of sight to the turbines in the Proposed Development.

12.2.7 Additionally, effects on PSR occur only when the turbine blades are rotating. Since this will not occur during the construction or decommissioning phases of the Proposed Development, effects on PSRs have not been assessed for these phases.

12.2.8 Following consultation with Hawarden Airport, it has been determined that the Proposed Development would have no impacts on that airport's IFPs. Therefore, that issue has been scoped out of assessment.

12.2.9 Other than the scoping out of Clee Hill PSR, for the reasons discussed in **paragraph 12.2.6**, and the scoping out of Hawarden Airport IFPs, for the reasons discussed in **paragraph 12.2.8**, the scope of the assessment has not changed since production of the Scoping Report and the receipt of the Scoping Direction.

12.3 Methodology

12.3.1 This assessment has been undertaken in accordance with the following legislation, and with regard to the following guidance. It should be noted that this chapter does not assess the compliance of the Proposed Development against relevant planning policy. Such an assessment is presented in the **Planning Statement**.

Legislation

- The Air Navigation Order 2016 (UK 2016); and
- The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002 (UK 2002).

Guidance

- Design Commission for Wales, Designing for Renewable Energy in Wales (2023), paragraph 5.11;
- Welsh Assembly Government Practice Guidance: Planning Implications of Renewable and Low Carbon Energy (2011), paragraphs 3.4.24 to 3.4.26;
- Civil Aviation Authority (CAA), CAA Policy and Guidelines on Wind Turbines, CAP 764, Sixth Edition (2016);
- CAA, Manual of Air Traffic Services Part 1, CAP 493, Edition 11 (2023);
- CAA, UK Flight Information Services, CAP 774, Version 4 (2021);
- CAA, Air Traffic Services Safety Requirements, CAP 670, Issue 3 (2019); and
- CAA, Policy Statement: Lighting of Onshore Wind Turbine Generators in the UK with a maximum blade tip height at or in excess of 150 m Above Ground Level (2017).

Baseline Characterisation

Extent of the Study Area

12.3.2 The study areas for aviation are as follows:

- a 10 km radius from the Application Site ('the Site') for military low flying areas and other aviation facilities;
- a 25 km radius from the Site for Meteorological Office radars;
- a 30 km radius from the Site for licensed and certificated aerodromes;
- a 60 km radius from the Site for airport PSRs and IFPs; and
- a 200 km radius from the Site for en route and air defence PSRs.

12.3.3 These distances are derived from recommended consultation distances in CAA guidance CAP 764, amended to ensure that all aviation facilities with the potential to be affected are included.

Data Sources

12.3.4 In order to establish the baseline conditions within the study area, data has been obtained from the following sources:

- the UK Aeronautical Information Publication (AIP)
- the UK Military AIP
- NATS and MoD radar coverage maps
- civil and military aeronautical charts, and
- Aviatica in-house databases.

12.3.5 No site-specific field study was undertaken at the Site as the data obtained during the desk study was deemed to be adequate and representative of the site conditions.

Assessment Methodology

12.3.6 The aviation assessment has been conducted in accordance with the guidance in CAP 764: CAA Policy and Guidelines on Wind Turbines, adapted to ensure that all aviation assets with the potential to be affected by the Proposed Development are assessed.

12.3.7 The assessment comprises a desk-based review of the location, technical characteristics and operational activities of aviation interests and operations in the vicinity of the Site using relevant data sources. The effects of the Proposed Development on PSRs have been assessed using radar line of sight modelling, undertaken using specialist software and digital terrain data with an appropriate resolution.

12.3.8 Potential cumulative effects on PSRs have been assessed by considering other wind energy developments within 28 km radius of the Site. Further details are provided in **Section 12.10**.

12.3.9 A preliminary review of the effects of the Proposed Development on Hawarden Airport's IFPs was conducted by Aviatica. This concluded that the Proposed Development would have no effects on the airport's IFPs. Hawarden Airport has confirmed that the Proposed Development would have no effects on the airport's IFPs. Consequently, no formal IFP assessment is required and this issue is not considered further in this chapter.

Assessment Criteria

12.3.10 Significance criteria for assessment of effects on aviation are not based on the sensitivity of the receptor. Further, while magnitude of impact can be determined in some circumstances, the magnitude of impact typically does not provide a standardised metric on which to measure the significance of any effects. In this context, the significance of effects on aviation have been determined by application of professional judgement, underpinned by consideration of the magnitude of impact



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(where measurable); the regulations and procedures in place for ensuring that aviation infrastructure meets required performance standards; the safeguarding policies and practices in use by specific aviation stakeholders; and the consultation responses from those stakeholders.

12.3.11 Residual adverse effects of the proposed development on aviation are described as either no effect, negligible, minor, moderate or major. The definitions of these criteria are shown in **Table 12.2**.

12.3.12 No effect, negligible or minor effects are categorised as not significant. Moderate or major effects are categorised as significant.

Table 12.2 Significance of Effect Criteria

Term	Definition
Major	<i>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; and/or the owner of the affected aviation asset requires mitigation; and/or mitigation is required by law.</i>
Moderate	<i>Periodic effects experienced which may require alterations to existing operational practice; and/or the owner of the affected aviation asset requires mitigation; and/or mitigation is required by law.</i>
Minor	<i>Occasional effects experienced which do not require any alteration of existing operational and technical practice.</i>
Negligible	<i>Normally no measurable change from baseline conditions; occasional, fleeting or very short-term effects experienced which do not require any alteration of existing operational and technical practice.</i>
No effect	<i>No measurable change from baseline conditions.</i>

12.4 Baseline Conditions

Existing Baseline

12.4.1 The Site is located in military Low Flying Area 7 (LFA 7), where fixed wing military aircraft may operate down to 250 feet Minimum Separation Distance (MSD – the distance vertically and/or horizontally from any terrain or obstacles). It is located in a part of LFA 7 which the MoD defines as a “*low priority low flying area less likely to raise concerns*” in relation to wind turbine developments. LFA 7 includes most of Wales except for the north-east of Powys (MoD, 2013).

12.4.2 The Site is located in uncontrolled airspace extending from ground level to Flight Level 195 (approximately 19,500 feet above sea level).



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12.4.3 En route air traffic control PSRs within 200 km of the Site comprise the NATS radars at Great Dun Fell, St Annes and Clee Hill. These radars are used to control air traffic in the 'en route' phase of flight.

12.4.4 The Site is located between 46 and 48 km south west of Hawarden Airport, which has a PSR and IFPs.

12.4.5 There are no air defence PSRs within 200 km, no licensed or certificated aerodromes within 30 km radius, no Met Office radars within 25 km radius, and no other aviation facilities within 10 km radius.

12.4.6 The sensitive receptors are therefore:

- the NERL Great Dun Fell PSR;
- the NERL St Annes PSR;
- the Hawarden Airport PSR; and
- military low flying.

12.4.7 No effects are anticipated for the NERL PSR at Clee Hill and for Hawarden Airport IFPs therefore these receptors have not been considered further.

Future Baseline in the Absence of the Proposed Development

12.4.8 The likely future baseline aviation conditions are not anticipated to be significantly different from current conditions.

12.5 Mitigation Embedded into the Design

12.5.1 This assessment has been based on the principle that measures have been 'embedded' into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement of infrastructure. **ES Volume II, Chapter 3: Description of the Proposed Development**, identifies the design mitigation that has been embedded into the design of the Proposed Development. The embedded mitigation relevant to this assessment is detailed in **Table 12.3**.

Table 12.3 Embedded Mitigation

Embedded Mitigation Measure Relevant to Aviation	Function
Provision of aviation lighting It is proposed that turbines T01, T04, T05 and T10 are provided with dimmable 2000 candela (cd) lights at hub height. Additional infra-red (IR)	Article 222 of the Air Navigation Order requires all structures with a height of 150 metres or more above ground level to be fitted with aviation warning lights. Article 222 also provides for the CAA to approve reduced lighting schemes in which not all turbines are lit. A reduced lighting scheme is proposed for the Proposed

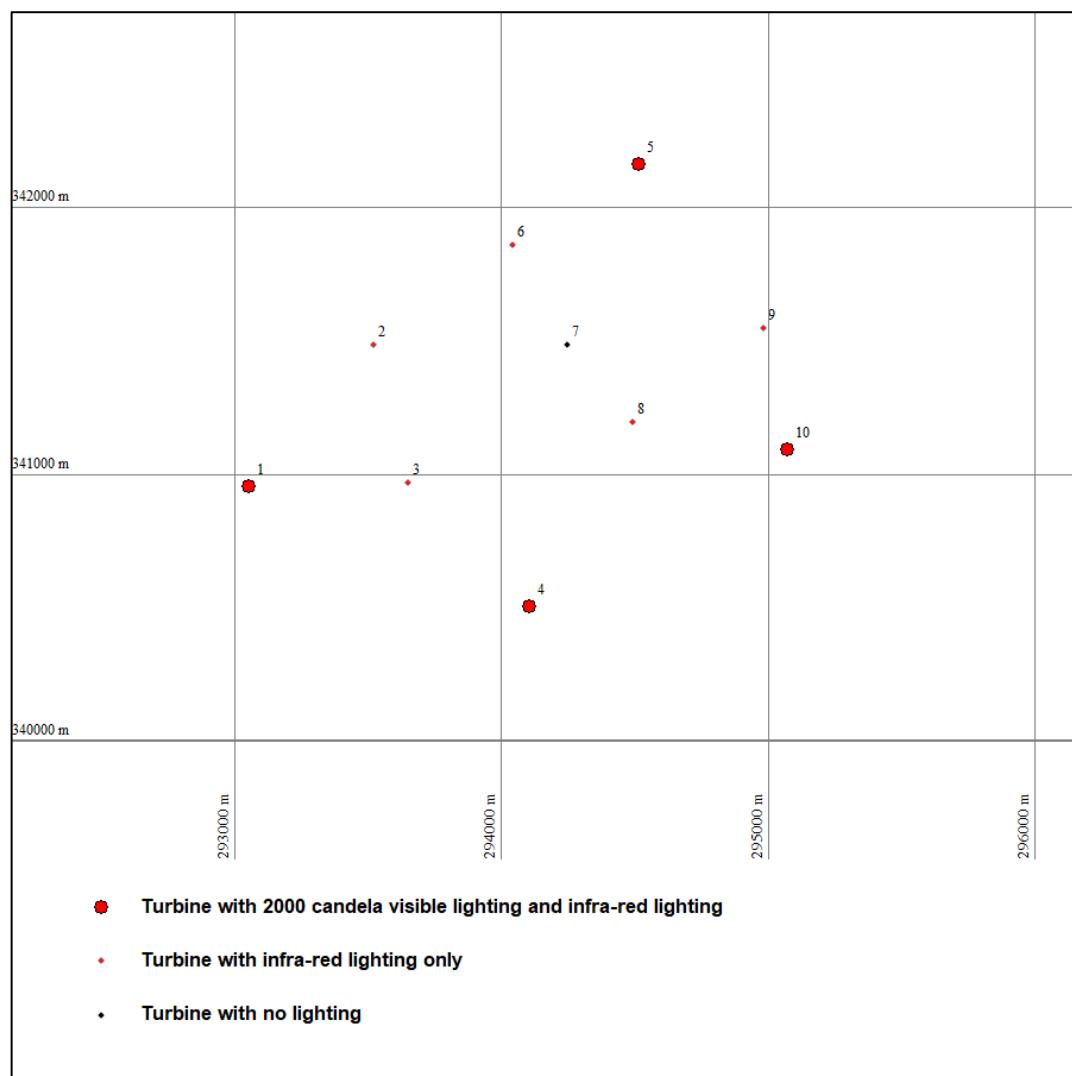


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<p>lighting is also proposed on all turbines except T07 to satisfy MoD requirements.</p>	<p>Development in order to minimise the night time visual impact of the development on non-aviation receptors.</p> <p>The proposed reduced lighting scheme is illustrated in Figure 12.1 below. Further details are provided in:</p> <ul style="list-style-type: none">• ES Volume II, Chapter 9: Landscape and Visual (Table 9.5)• ES Volume IV, Figure 9.34: Hub Height ZTV for Lit Turbines T01, T04, T05 and T10 to 20 km with Viewpoints, and• Figure 9.35: Lighting Intensity ZTV for Lit Turbines T01, T04, T05 and T10 to 20 km with Viewpoints.
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Figure 12.1 Proposed Reduced Lighting Scheme



12.6 Assessment of Likely Effects (Without Additional Mitigation)

Construction

Military Low Flying

12.6.1 The construction of the Proposed Development (specifically the erection of turbines) has the potential to introduce a physical obstruction to low flying aircraft operating in the area. This would be the turbines themselves and also the cranes required to construct them. This could require pilots to manoeuvre their aircraft horizontally and/or vertically to avoid the turbines and cranes. The MoD has stated that effects on low flying military aircraft would be acceptably mitigated by agreement to planning conditions requiring aviation lighting and the pre-construction notification of details of the development.

Operation

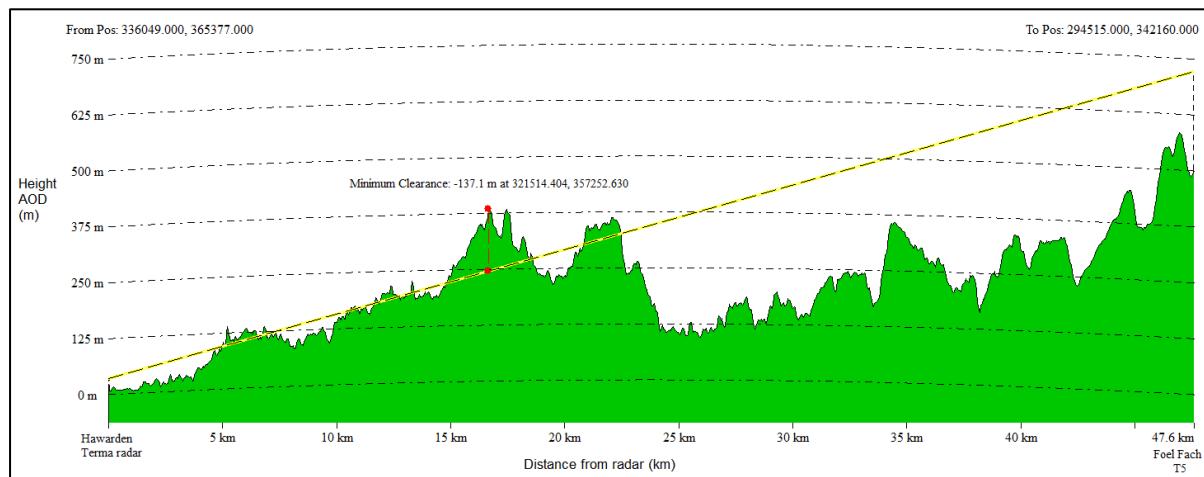
PSRs

12.6.2 The rotating blades of wind turbines can generate spurious radar returns on PSRs and may also cause a reduction in the probability of the radar detecting wanted aircraft targets in the airspace overhead the turbines.

12.6.3 Radar line of sight modelling analysis has determined that the PSR at Hawarden Airport will have no line of sight to the Proposed Development due to intervening terrain and therefore no effects would be experienced. **Figure 12.2** shows the radar line of sight from the Hawarden PSR to the blade tips of the highest turbine in the Proposed Development. It shows extensive terrain blocking of the line of sight.

12.6.4 The NERL PSRs at Great Dun Fell and St Annes are assessed as having line of sight to up to seven turbines in the Proposed Development. It is concluded that the Proposed Development is likely to have negative effects on those radars.

Figure 12.2 Radar Line of Sight from the Hawarden PSR to the Blade Tips of the Highest Turbine in the Proposed Development.



Military Low Flying

12.6.5 Effects on military low flying during the operational phase will be the same as those during the construction phase for the turbines, albeit for a longer duration.

Decommissioning

Military Low Flying

12.6.6 Effects on military low flying during the decommissioning phase will be the same as those during the construction phase, only for dismantling rather than erection.

12.7 Additional Mitigation Measures

12.7.1 **Table 12.4** sets out the additional mitigation measures required to mitigate the likely effects identified in **Section 12.6**.

Table 12.4 Additional Mitigation

Phase	Description of Additional Mitigation Measure	Securing Mechanism
Operational	Use of data from third NERL radar to provide in-fill cover or use of the inherent filtering capabilities of a new radar to be installed at Great Dun Fell.	Commercial agreement between the Applicant and NERL/planning condition



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12.8 Assessment of Residual Effects (With Additional Mitigation)

12.8.1 The residual effects of the Proposed Development on aviation are as shown in **Table 12.5**.



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Table 12.5 Assessment of Residual Effects

Paragraph Number	Receptor / Receptor Groups	Description of Likely Residual Effect	Residual Effect
Construction			
12.5.1	Low flying military aircraft	Manoeuvring of aircraft horizontally and/or vertically to avoid charted and lit obstacles	Minor adverse (not significant)
12.5.2	Hawarden Airport IFPs	The proposed blade tip heights are assessed as not requiring changes to the current published Hawarden Airport IFPs, therefore no effects are anticipated.	No effect (not significant)
Operation			
14.5.3	Low flying military aircraft	Manoeuvring of aircraft horizontally and/or vertically to avoid charted and lit obstacles	Minor adverse (not significant)
14.5.4	Hawarden Airport IFPs	The proposed blade tip heights are assessed as not requiring changes to the current published Hawarden Airport IFPs, therefore no effects are anticipated.	No effect (not significant)
14.5.5	Hawarden Airport radar	There is no line of sight between the Hawarden Airport radar and the Proposed Development due to intervening terrain therefore no effects are anticipated.	No effect (not significant)
14.5.7	NERL Great Dun Fell radar	Effects on the Great Dun Fell radar will be removed by the use of in-fill data from a 3 rd radar	Minor adverse (not significant)
14.5.8	NERL St Anne's radar	Effects on the St Annes radar will be removed by the use of in-fill data from a 3 rd radar	Minor adverse (not significant)



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Paragraph Number	Receptor / Receptor Groups	Description of Likely Residual Effect	Residual Effect
Decommissioning			
14.5.9	Low flying military aircraft	Manoeuvring of aircraft horizontally and/or vertically to avoid charted and lit obstacles	Minor adverse (not significant)
14.5.10	Hawarden Airport IFPs	The proposed blade tip heights are assessed as not requiring changes to the current published Hawarden Airport IFPs therefore no effects are anticipated.	No effect (not significant)



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12.9 Difficulties and Uncertainties

12.9.1 No difficulties or uncertainties have been encountered during the undertaking of this aviation assessment.

12.10 Inter-project Cumulative Effects

Screening Cumulative Developments within the Zone of Influence

12.10.1 The inter-project cumulative effects assessment has been undertaken in accordance with Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment, as detailed in **ES Volume II, Chapter 4: Approach to the EIA**.

Cumulative Effects on Radar

12.10.2 **Table 12.6** sets out the other committed developments located within 28 km of the application site. This Zone of Influence (ZoI) has been determined as appropriate for this cumulative assessment because operational wind turbine developments that are within line of sight of a radar and within 28 km (15 nautical miles) of another radar-visible development have the potential to affect the provision of air traffic radar services using data from that radar. **Table 12.6** also sets out the findings of a screening assessment undertaken to identify those schemes which have the potential to result in significant effects with the Proposed Development.

Table 12.6 Inter-project Cumulative Effects: Screening

ID	Committed Development	Scheme Description	Potential for Cumulative Effects?
N/A	Planning reference 0/44248 <i>Hafoty Ucha Repowering</i>	4 x 86.5 m turbines	No <i>Not within line of sight of NATS radars</i>
N/A	Planning reference C04M/0038/04/LL <i>Braich Ddu</i>	3 x 90 m turbines	No <i>Not within line of sight of NATS radars</i>
N/A	Planning reference 0/42466 <i>Bodtegir</i>	1 x 100 m turbine	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference 6/2004/278/PS <i>Wern Ddu</i>	4 x 90 m turbines	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference 0/45098 <i>Clocaenog Forest</i>	27 x 145 m turbines	Yes <i>Within line of sight of NATS radars</i>



ID	Committed Development	Scheme Description	Potential for Cumulative Effects?
N/A	Planning reference 25/2007/0565 Brenig	16 x 100 m turbines	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference 25/1999/0710 Tir Mostyn & Foel Goch	25 x 75 m turbines	Yes <i>Within line of sight of NATS radars</i>
C6	Planning reference 25/2015/0321 Pant y Maen	7 x 102 m turbines	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference 0/27445 Moel Maelegan	12 x 62 m turbines	Yes <i>Within line of sight of NATS radars</i>
C19	Planning reference DNS/3276735 Gaerwen	2 x 200 m, 7 x 180 m turbines	No <i>Not within line of sight of NATS radars</i>
C18	Planning reference DNS CAS-02646-S1G1Q8 Moel Chwa	12 x 200 m turbines	Yes <i>Within line of sight of NATS radars</i>
C10	Planning reference DNS/3214855 Alwen Forest	9 x 200 m turbines	Yes <i>Within line of sight of NATS radars</i>
C25	Planning reference DNS CAS-03622-F3N1Q7 Mynydd Mawr Energy Park	21 x 230 m turbines	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference N/A Disgarth Ucha	1 x 86.6 m turbine	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference N/A Ty'n Gwyn.	1 x 86.6 m turbine	Yes <i>Within line of sight of NATS radars</i>
N/A	Planning reference N/A Cilgoed	1 x 78 m turbine	No <i>Not within line of sight of NATS radars</i>
C11	Planning reference DNS CAS-02040-L8C8B7 Carnedd Wen Wind Farm	30 x 200 m turbine	No <i>Turbine to turbine distance greater than 28 km from Proposed Development</i>
C13	Planning reference	15 x 230 m turbine	No



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ID	Committed Development	Scheme Description	Potential for Cumulative Effects?
	DNS CAS-03719-R0C2Z0 <i>Llanbrynmair Wind Farm</i>		<i>Turbine to turbine distance greater than 28 km from Proposed Development</i>

Assessment

12.10.3 The other committed developments determined to have the potential to result in likely significant cumulative effects with the Proposed Development, are assessed in **Table 12.7**.

Table 12.7 Inter-project Cumulative Effects: Assessment

ID	Committed Development	Inter-development Cumulative Effect Description
N/A	Planning reference 0/42466 <i>Bodtegir</i>	<i>Single turbine, unlikely to have significant cumulative effects on NATS radars</i>
N/A	Planning reference 6/2004/278/PS <i>Wern Ddu</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
N/A	Planning reference 0/45098 <i>Clocaenog Forest</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
N/A	Planning reference 25/2007/0565 <i>Brenig</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
N/A	Planning reference 25/1999/0710 <i>Tir Mostyn & Foel Goch</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
C6	Planning reference 25/2015/0321 <i>Pant y Maen</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
N/A	Planning reference 0/27445 <i>Moel Maelogen</i>	<i>In area of low operational importance to NATS. Distance from Proposed Development makes cumulative effects less likely.</i>
C18	Planning reference DNS CAS-02646-S1G1Q8	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative</i>



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ID	Committed Development	Inter-development Cumulative Effect Description
	<i>Moel Chwa</i>	<i>effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
C10	Planning reference DNS/3214855 <i>Alwen Forest</i>	<i>This development is located within TAN 8 Strategic Search Area A where NATS assessed all cumulative effects as acceptable. Therefore, no significant cumulative effects are anticipated.</i>
N/A	Planning reference DNS CAS-03622-F3N1Q7 <i>Mynydd Mawr Energy Park</i>	<i>Underneath controlled airspace and >10 nm away from Foel Fach so unlikely to have significant cumulative effects</i>
N/A	Planning reference N/A <i>Disgarth Ucha</i>	<i>Single turbine, unlikely to have significant cumulative effects on NATS radars</i>
N/A	Planning reference N/A <i>Ty'n Gwyn.</i>	<i>Single turbine, unlikely to have significant cumulative effects on NATS radars</i>
N/A	Planning reference N/A <i>Cilgoed</i>	<i>Single turbine, unlikely to have significant cumulative effects on NATS radars</i>

12.10.4 It is concluded that the Proposed Development will have no significant cumulative effects with other committed developments on the NERL Great Dun Fell and St Anne's radars.

Cumulative Effects Military Low Flying

12.10.5 Cumulative effects on low flying military aircraft may occur where other wind turbine developments are located within 10 km of the Proposed Development. **Table 12.8** lists the projects meeting that criterion.

Table 12.8 Inter-project Cumulative Effects: Assessment

ID	Committed Development	Inter-development Cumulative Effect Description
N/A	Planning reference N/A <i>Hafoty Ucha</i>	<i>Located on high ground on other side of Afon Medrad valley. No significant cumulative effects.</i>
N/A	Planning reference 0/44248 <i>Hafoty Ucha Repowering</i>	<i>Located on high ground on other side of Afon Medrad valley. No significant cumulative effects.</i>



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ID	Committed Development	Inter-development Cumulative Effect Description
N/A	Planning reference 0/42466 <i>Bodtegir</i>	<i>Single turbine located on high ground on other side of Afon Alwen valley, in TAN 8 Strategic Search Area A. No significant cumulative effects.</i>
N/A	Planning reference N/A <i>Bryn Ffynon</i>	<i>Located on high ground on other side of Afon Medrad valley. No significant cumulative effects.</i>
C19	Planning reference DNS/3276735 <i>Gaerwen</i>	<i>Located on other side of valley containing A494 road. MoD response states that effects on low flying would be mitigated by planning conditions requiring lighting and pre-construction notification of development. No significant cumulative effects.</i>
C18	Planning reference DNS CAS-02646-S1G1Q8 <i>Moel Chwa</i>	<i>Located on high ground on other side of Afon Alwen valley, in TAN 8 Strategic Search Area A. No significant cumulative effects.</i>
N/A	Planning reference N/A <i>Disgarth Ucha</i>	<i>Located on high ground on other side of Afon Alwen valley, in TAN 8 Strategic Search Area A. No significant cumulative effects.</i>
N/A	Planning reference N/A <i>Ty'n Gwyn</i>	<i>Located on high ground on other side of Afon Alwen valley, in TAN 8 Strategic Search Area A. No significant cumulative effects.</i>
N/A	Planning reference C04M/0038/04/LL <i>Braich Ddu</i>	<i>Located on other side of valley containing A494 road. No significant cumulative effects.</i>

12.10.6 The assessment of potential cumulative effects on military low flying concludes that there will not be significant effects since none of the other existing or planned projects, in combination with the Proposed Development, would force low flying aircraft to deviate from or abandon regularly-used flight paths. The MoD scoping response indicates that any effects on low flying military aircraft would be mitigated by turbine lighting and the pre-construction notification of the details of the Proposed Development.

References

CAA, 2016, CAA Policy and Guidelines on Wind Turbines, CAP 764

CAA, 2017, Policy Statement: Lighting of Onshore Wind Turbine Generators in the UK with a maximum blade tip height at or in excess of 150m Above Ground Level

CAA, 2019, Air Traffic Services Safety Requirements, CAP 670, Issue 3

CAA, 2021, UK Flight Information Services, CAP 774, Version 4



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generations



CAA, 2023, Manual of Air Traffic Services Part 1, CAP 493, Edition 11

Design Commission for Wales, 2023, Designing for Renewable Energy in Wales

Ministry of Defence, 2013, Military Low Flying in the United Kingdom. Available at: [LowFlying2009-2010-20100622.pdf](https://www.gov.uk/government/publications/military-low-flying-in-the-united-kingdom-lowflying2009-2010-20100622.pdf) [Accessed October 2025]

UK, 2016, The Air Navigation Order 2016

UK, 2002, The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002

Welsh Assembly Government, 2011, Practice Guidance: Planning Implications of Renewable and Low Carbon Energy