Foel Fach Wind Farm Limited.

Foel Fach Wind Farm – Environmental Statement Volume II

Main Written Statement - Chapter 14

Project Reference: 664094

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

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14 CUMULATIVE EFFECTS

14.1 Introduction

14.1.1 This chapter reports the likely significant cumulative environmental effects associated with the Proposed Development.

14.1.2 For the purposes of this Environmental Statement (ES), the following types of cumulative effects have been considered in accordance with the Environmental Impact Assessment (EIA) (Wales) Regulations 2017 and relevant good practice guidance:

- Intra-project combined effects – the interaction and combination of different environmental effects from within the Proposed Development affecting a receptor.
- Inter-project cumulative effects – the combined effects of the Proposed Development and other projects on a receptor.

14.1.3 This chapter should be read in conjunction with the cumulative effects section of each ES chapter presented in **ES Volume II, Chapters 5** to **13**.

14.2 Scope and Methodology of Assessment

14.2.1 There is no single definitive methodology for assessing cumulative effects in EIA. Relevant guidance is however provided in the *Nationally Significant Infrastructure Projects (NSIPs): Advice on Cumulative Effects Assessment* (Planning Inspectorate, 2024). In line with EIA Scoping Direction advice from Planning and Environmental Decisions Wales (PEDW) (see below), the NSIP methodology has formed the basis of the approach taken herein to the cumulative effects assessment.

14.2.2 Schedule 4, Paragraph 5(e) of the EIA Regulations 2017 states that an ES should include a description of the likely significant effects of the Proposed Development on the environment resulting from '*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*'. For the purpose of this assessment these are termed Inter-project cumulative effects.

14.2.3 Part 1, Regulation 4, Paragraph 2 (e) of the EIA Regulations 2017 also refers to the need to assess '*the interaction between factors referred to in sub-paragraphs (a) to (d)*' which includes: population and human health, biodiversity (with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC), land, soil, water, air and climate, material assets, cultural heritage and the landscape. For the purpose of this assessment these are termed Intra-project combined effects.

Application Response to EIA Scoping Direction

14.2.4 An EIA Scoping Report (**ES Volume III, Appendix 1.1: EIA Scoping Report**) was submitted to PEDW on 22 July 2024. The Scoping Direction (**ES Volume III, Appendix 1.2: EIA Scoping Direction and Addendum)** was received on 5 and 18 December 2024. **Table 14.1** summarises the key Scoping Direction comments related to cumulative effects and sets out how these have been addressed by the Applicant.

Table 14.1 Scoping Direction Comments and where these are Addressed

PEDW Reference	Comment summary	How the issue has been addressed in the ES chapter
6.4	The Applicant should ensure that relevant schemes identified are addressed in the ES using the tiered approach set out in Nationally Significant Infrastructure Projects (NSIPs): Advice on Cumulative Effects Assessment.	Relevant schemes have been identified using the approach set out in the Planning Inspectorate (PINS) guidance 'Nationally Significant Infrastructure Projects (NSIPs): Advice on Cumulative Effects Assessment. The approach is detailed below in **paragraphs 14.4.1** to **14.4.17.**
6.4	Other types of development may have cumulative impacts with the proposal, and it should not be assumed that the consideration of cumulative impacts can be restricted to other renewable energy proposals.	A 10 km search area for planning applications which are classed as 'major developments' in accordance with Article 2 of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 has been used in the cumulative assessments. The approach is outlined in **paragraph 14.4.6.**
6.4	Effects deemed individually not significant from the assessment, could cumulatively be significant, so inclusion criteria based on the most likely significant effects from this type of development may prove helpful when identifying what other developments should be accounted for. The criteria may vary from topic to topic.	The cumulative assessment has considered residual effects on sensitive receptors that have been judged as minor or greater as detailed in **paragraphs 14.3.1** to **14.3.10.**

PEDW Reference	Comment summary	How the issue has been addressed in the ES chapter
6.4	Best practice is to include proportionate information relating to projects that are not yet consented, dependent on the level of certainty of them coming forward.	The approach has followed that provided by PINS NSIPs: Advice on Cumulative Effects Assessment and considered the tiers of development and the decreasing level of detail is likely to be available from Tier 1 to Tier 3.
6.4	All of the other developments considered should be documented and the reasons for inclusion or exclusion should be clearly stated. Professional judgement should be used to avoid excluding other development that is close to threshold limits but has characteristics likely to give rise to a significant effect; or could give rise to a cumulative effect by virtue of its proximity to the Proposed Development. Similarly, professional judgement should be applied to other development that exceeds thresholds but may not give rise to discernible effects. The process of refinement should be undertaken in consultation with the local planning authority (LPA), Natural Resources Wales (NRW), Cadw and other consultees, where appropriate.	Detail on how the long list of projects has been developed for the Inter-Project Cumulative Assessment is presented in **paragraphs 14.4.1** to **14.4.17**. The short-list of projects relevant to each factor assessed in the ES is presented and justified within **Table 14.4.** Gwynedd Council was consulted on the long list of developments being considered as part of the Inter-Project Cumulative Assessment and raised no comments.
6.4	The scope of the cumulative assessment should be fully explained and justified in the ES.	The method and scope of the Inter-Project Cumulative Assessment has been set out within **Section 14.4**.

PEDW Reference	Comment summary	How the issue has been addressed in the ES chapter
ID. 83	While developments that have been built and are operational will form part of the baseline, this does not mean that they should of Schedule 4 of the 2017 Regulations be excluded when considering cumulative effects. Paragraph 5 makes it clear that consideration of cumulative effects should include existing development. To ensure a comprehensive assessment in the final ES, the applicant is advised to liaise with the LPA on development proposals that should be included in the cumulative assessment, which may extend beyond other renewable energy developments.	Paragraph 5 refers to existing and/or approved projects. As such, and in line with the PINS guidance, it is committed development projects that are assessed for the purpose of cumulative effects assessment rather than completed developments. Gwynedd Council was consulted on the long list of committed development projects being considered as part of the Inter-Project Cumulative Assessment but has raised no comments.

14.3 Intra-project Cumulative Effects

14.3.1 The approach to the assessment of interactions of environmental effects considers the changes in baseline conditions at common sensitive receptors (i.e. those receptors that have been identified as experiencing likely significant effects by more than one environmental factor) due to the Proposed Development. For completeness the assessment is based upon residual effects (i.e. effects residing after factor specific additional mitigation has been assessed). The study area for the assessment is informed by the study areas for the individual factor assessments, as set out in technical **ES Chapters 5** to **13**.

14.3.2 The assessment of the intra-project combined effects has been undertaken using a two-stage approach as described below.

Stage 1 - Screening

14.3.3 Screening has been undertaken to determine whether a sensitive receptor would be exposed to more than one type of residual (post-additional mitigation) effect during the construction, operational and/or decommissioning phases1 of the Proposed Development.

14.3.4 The sensitive receptors identified in technical **ES Chapters 5** to **13** and the predicted residual effects on these following the application of additional (secondary)

[1] Due to the expected similarities of the likely effects of the Proposed Development during the construction phase and the decommissioning phase, these phases have been grouped in this assessment to avoid repetition. Where an effect is only relevant to one particular phase and not the other, this has been clearly stated.

mitigation were identified. Those common sensitive receptors exposed to two or more types of residual effects have been taken forward to Stage 2 of the assessment.

14.3.5 If there is only one type of effect on a sensitive receptor (i.e. only one technical chapter has identified effects on that sensitive receptor), then it is considered that there are no potential intra-project combined effects and the sensitive receptor has not been taken forward to Stage 2 of the assessment.

Stage 2 – Assessment for Intra-project Combined Effects

14.3.6 A quantitative assessment of the overall significance of the intra-project combined effects on common sensitive receptors identified at Stage 1 has been undertaken, where possible, based on information provided in the environmental factor assessments (**ES Volume II, Chapters 5** to **13**), supporting appendices, as well as professional judgement. Given that the types of effects may be very different in some cases, a quantitative assessment has not always been possible, and where that is the case, it has been necessary to apply professional judgement in determining the significance of each individual effect.

14.3.7 The study area for the assessment of intra-project combined effects has been informed by the study areas and relevant guidance for the individual environmental factor assessments, described in **ES Volume II, Chapters 5** to **13**.

Assessment Criteria

14.3.8 The evaluation of intra-project combined effects at the receptor level has considered:

- Previously identified sensitivity/importance/value
- The magnitude of change at the common receptor, and
- Duration and reversibility of the interaction.

14.3.9 Due to the different assessment criteria used within the different factor assessments, this intra-project combined effect assessment does not seek to determine the scale of the effect (e.g. minor, moderate). The focus of the evaluation has been on determining whether the level of effect likely to be experienced is significant or not. As set out in **paragraph 14.3.6**, professional judgement is an important aspect of this assessment.

14.3.10 A significant intra-project combined effect would occur where the Proposed Development would result in a receptor, or group of receptors, experiencing at least one significant effect and at least one other effect from different sources or pathways. Typically, a not significant intra-project combined effect would occur where the Proposed Development would result in a receptor, or group of receptors, experiencing multiple not significant effects from multiple sources and pathways. However, should the assessor determine that the combined effect of multiple not

significant effects would in aggregate result in a significant effect (e.g., due to duration or reversibility) clear justification has been provided.

14.4 Inter-project Cumulative Effects

14.4.1 The approach to the assessment of inter-project effects considers the deviation from the baseline conditions at common sensitive receptors as a result of changes brought about due to the introduction of the Proposed Development in combination with one or more other approved developments. The assessment of the inter-project effects has been based upon the residual effects that have been identified in **ES Volume II, Chapters 5** to **13** as well as available environmental information for the approved developments.

14.4.2 In accordance with PINS NSIPs: Advice on Cumulative Effects Assessment, the identification of other existing and/or approved development projects comprises two clear stages as follows:

- Stage 1: establish a long list of other existing and/or approved development projects based on appropriate spatial and temporal limits.
- Stage 2: apply a clear rationale to establish a shortlist of other existing and/or approved development projects which, in combination with the Proposed Development, have the potential to result in a significant cumulative effect for inclusion within the assessment.

14.4.3 An outline of the approach taken to identify inter-project cumulative effects is described more fully below.

Stage 1: Establishing the Zone of Influence (ZoI) and Long List of Approved (committed) Developments

14.4.4 In accordance with PINS NSIPs: Advice on Cumulative Effects Assessment and the EIA Scoping Direction, a long list of committed developments was prepared. The identified long list of committed developments is provided in **ES Volume III, Appendix 14.1: Cumulative Long List** and shown in **ES Volume IV, Figure 14.1: Cumulative Short List.**

14.4.5 The committed developments are located within the Zone of Influence (ZoI) identified as part of the EIA. The ZoI has been defined by considering the geographic scope of any potential impacts from the Proposed Development and professional judgement. **Table 14.2** outlines the ZoI for each factor assessed within this ES.

Table 14.2 ZoI for Each Environmental Factor

Environmental factor	ZoI for cumulative assessment
Terrestrial Ecology	10 km (From Site Boundary)
Ornithology	10 km (From Site Boundary)
Land, Soils and Water	5 km (From Site Boundary)

Environmental factor	ZoI for cumulative assessment
Cultural Heritage	10 km (From Site Boundary)
Landscape and Visual	35 km (Directions calculated using the centroid of the proposed turbine locations. All distances are measured from the Proposed Development site to the nearest turbine of the respective cumulative site).
Noise and Vibration	10 km (From Site Boundary)
Traffic and Transport	The study area comprises the public roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. Namely: • A5 between the A483 / A5 junction south of Wrexham and Pentrefoelas • A494 between Bala and its junction with the A5 • A4212 between Trawsfynydd and Bala, and • B4501 between its junctions with the A4212 and the A5.
Aviation	28 km (From nearest turbines)
Climate	Not Applicable

14.4.6 The ZoI for the long list of approved (committed) developments has been based on the largest ZoI in terms of distance, which in this case is 35 km. A reduced ZoI of 10 km was used for smaller developments since impacts from smaller developments are unlikely to extend beyond 10 km. The ZoI which has informed the long list of approved (committed) developments is as follows:

- 35 km for NSIPs, delivered under the Planning Act 2008. As available on the Register of Development Consent Order (DCO) Applications on the National Infrastructure Planning portal in the last five years.
- 35 km for Developments of National Significance (DNS), delivered under the Planning (Wales) Act 2015. As available on the Register of Applications on the DNS portal in the last five years.
- 35 km for other onshore wind developments (not classed as a DNS) (where the wind turbines are greater than 50 m to tip height). As available on LPA planning portals in the last five years.
- 10 km for planning applications contained on the Gwynedd Council, Conway Borough Council and Denbighshire County Council planning portal in the last five years which are classed as 'major developments' in accordance with Article 2 of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012.

14.4.7 The following criteria have been used for assigning certainty to developments within the ZoI which have been included on the long list of approved (committed) developments:

- Developments that are under construction but will not be completed prior to the Proposed Development commencing.

- Developments with planning permission, but not yet implemented.
- Developments which have submitted planning applications but have not been determined.
- Developments which have submitted a request for an EIA Scoping Direction or EIA Scoping Opinion.
- Refusals subject to appeal procedures not yet determined.

14.4.8 It is acknowledged that this list is constantly evolving and therefore, October 2025 was used as an effective cut-off date, after which no further research was undertaken on the evolving status of any developments in the above ZoIs. The cumulative long and short list reflects the status of each wind farm at the time of this date.

Stage 2: Short List of Committed Development Projects

14.4.9 Following the formation of the long list, eligible other existing developments and/or approved developments identified have been through further assessment (Stage 2) to establish a short list of other existing development and/or approved developments which, in combination with the Proposed Development, have the potential to result in significant inter-project cumulative effects.

14.4.10 The criteria used to determine whether to include or exclude an existing development and/or approved development on the short list reflects the process established by 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' (Planning Inspectorate, 2024). 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' (Planning Inspectorate, 2024) states that the criteria should address the following:

- **Temporal scope:** The relative construction, operational and decommissioning programmes of the other existing and/or approved developments identified in the ZoI together with the Proposed Development, to establish whether there is overlap and any potential for interaction.
- **Scale and nature of development:** The scale and nature of the other existing and/ or approved developments identified in the ZoI that are likely to interact with the Proposed Development. Statutory definitions of major development and EIA screening thresholds may be of assistance when considering issues of scale.
- **Other factors**: For example, the nature and, or capacity of the receiving environment, which could make a significant cumulative effect with the other existing and/or approved developments more or less likely. Consider using a source-pathway receptor approach to inform the assessment.

14.4.11 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' (Planning Inspectorate, 2024) suggests that professional judgement may also be used to supplement the threshold criteria and in order to avoid excluding other existing development and/or approved development that is:

"*Below the threshold criteria limits but has characteristics likely to give rise to a significant effect; or Below the threshold criteria limits but could give rise to a*

cumulative effect by virtue of its proximity to the proposed project [i.e. the Proposed Development]"

14.4.12 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' (Planning Inspectorate, 2024) also notes:

"*Professional judgement could be applied to support the exclusion of other existing and, or approved development that exceeds the thresholds but may not give rise to evident effects. All the other existing and, or approved development considered should be documented and the reasons for inclusion or exclusion clearly stated."*

14.4.13 Taking the above into consideration, the other existing development and/or approved developments on the long list have been reviewed against the following criteria to form the short list of other existing development and/or approved developments:

- **Criteria 1**: The other existing development and/ or approved development has a construction, operational and/or decommissioning phase that may overlap with any phase of the Proposed Development
- **Criteria 2:** The other existing development and/or approved development and the Proposed Development share common sensitive receptors/ resources which are assessed and described in the supporting environmental documentation and have the potential to be significantly affected by the combination of the other existing development and/or approved development and the Proposed Development.
- **Criteria 3:** The other existing development and/or approved development has sufficient environmental assessment information readily and publicly available (including traffic flows) to inform the inter-project cumulative effects assessment. The assessment of each existing development and/ or approved development on the short list will be proportionate to the environmental assessment information available.[2]

Stage 3: Information Gathering for Other Developments

14.4.14 This stage has involved sourcing further information relating to the shortlisted other existing and/or approved development, in order to establish the details of their likely environmental effects and potential for inter-project cumulative effect with the Proposed Development. The other existing developments and/ or approved developments that form part of the short list have been subject to a review of environmental information, where available, including details of:

- Location
- Programme, including construction, operational (including maintenance) and decommissioning
- Baseline data

[2] In the unlikely event that a development, which it is known will be progressed, but has insufficient environmental assessment information, a detailed inter-project cumulative effects assessment may not be possible. It may, however, still be prudent to consider the development in the inter-project cumulative effects assessment. The assessment may therefore take the form of listing the development and why it hasn't been considered in detail, or the potential inter-project cumulative effect could be discussed at a high level (qualitatively) using professional judgement.

- Effects arising from such other existing development and/or approved developments on common sensitive receptors, and
- Proposed design.

Stage 4: Assessment of Cumulative Effects

14.4.15 There is no formal guidance on the criteria for determining significance of inter-project cumulative effects. The following principles have been considered in assessing the significance of inter-project cumulative effects, in accordance with 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' (Planning Inspectorate, 2024) and in consideration of any mitigation measures required to avoid, prevent, reduce or, if possible, offset any identified significant adverse inter-project cumulative effects:

- The duration of effect (temporary or permanent)
- The extent of effect (the geographical area)
- The type of effect (whether additive or synergistic)
- The frequency of the effect
- The value and resilience of the receptor affected, and
- The likely success of mitigation.

14.4.16 When considering the inter-project cumulative effects with other existing and/or approved (committed) development projects, it has been assumed that standard and good practice mitigation measures will be applied to the other existing and/or approved developments (e.g. use of Construction Environmental Management Plans) and that such mitigation would be secured as part of any planning permission granted, if required. As such, it is appropriate to rely on these mitigation measures when completing the inter-project cumulative effects assessment.

14.4.17 The Applicant considers it not possible to assess all of the inter-project cumulative effects of decommissioning activities as there is currently no mechanism to identify other existing development and/or approved developments that would be relevant at that time. However, where possible, an assessment has been completed. It is anticipated that further consideration of the potential inter-project cumulative effects of decommissioning will be a matter for the relevant consenting authority at the time.

Assessment Criteria

14.4.18 Significance criteria for the inter-project cumulative effects assessment follows the same matrix tables as provided in each individual factor assessment chapter (**ES Volume II, Chapters 5** to **13**). The effects of the committed development projects identified as part of the short list have been considered in conjunction with those identified in each individual assessment chapter to create an overall effect score. For example, if the Proposed Development results in a temporary loss of priority habitat of national value resulting in a minor effect (not considered to be significant on its own) and another development results in the removal and loss of a large area of this habitat which cannot be replaced resulting in an overall effect of moderate (which is considered significant).

14.5 Assessment of Cumulative Effects

Intra-project effects

14.5.1 The stage 1 screening assessment of factors and receptors for interrelationship effects is provided in **ES Volume III, Appendix 14.2: Intra-project Screening Assessment**.

14.5.2 The following factors have not been screened for construction/ decommissioning interrelationship effects as no individual effects greater than negligible (or equivalent) have been identified:

- Ornithology, and
- Air Quality.

14.5.3 The following factors have not been screened for operational interrelationship effects as no individual effects greater than negligible (or equivalent) have been identified:

- Traffic and Transport, and
- Air Quality.

14.5.4 In the Stage 1 screening for intra-project effects, no potential effects was identified for the operational phase and only one potential effect was identified for the construction/ decommissioning phase. The construction/decommissioning potential intra-project effect was therefore progressed to Stage 2 of the intra-project effects, the assessment of which is presented in **Table 14.3.**

14.5.5 It is concluded that users of the B4501 would experience an overall significant temporary effect as a result of changes in their view and traffic related effects. The temporary effect would only occur whilst abnormal indivisible loads are being delivered, and which would be managed, however it is not possible to fully mitigate the effect. It has therefore been judged that a **temporary significant effect** would remain for users of the B4501.

Table 14.3 Intra-project Combined Residual Effect Interactions During Construction and Decommissioning (Stage 2)

Receptor	Landscape and Visual effect	Traffic and Transport effect	Additional mitigation	Significant intra-project combined Effect?
Users of B4501	During construction and decommissioning, road users would have clear view of on-going construction/decommissioning activities. The turbines would appear as prominent new features in the landscape, clearly visible above the roadside vegetation and field boundaries. During construction, this would result in a **high** magnitude of change and **major** visual effect, which is considered **significant**.	Users of the B4501 are considered to be of **medium sensitivity**. Due to the increase in construction traffic movements on the B4501, it is anticipated that a **minor adverse**, temporary, direct and short-term residual effect would occur in relation to large loads. This residual effect is **not significant**.	A construction traffic management plan (CTMP) will be secured through a planning condition and delivered by the Contractor. An Abnormal Load TMP will be prepared and delivered by the Abnormal Load supplier.	Users of the B4501 would experience both traffic related effects and changes in view. The temporary effect would only occur whilst abnormal indivisible loads are being delivered, and which would be managed, however it is not possible to fully mitigate the effect. It has therefore been judged that a **temporary significant effect** would remain for users of the B4501.

14.6 Inter-project Effects

14.6.1 This section provides a summary of the outcomes of inter-project effects assessment which is fully reported in each relevant ES chapter (**Chapters 5** to **13**).

14.6.2 Based on the methodology outlined above, 17 committed developments have been short listed and need to be considered within this assessment of inter-project cumulative effects; these are listed in **Table 14.4** below**.**

14.6.3 A summary of the potential inter-project cumulative effects provided in **Table 14.5**. In line with the methodology only cumulative effects of minor or greater significance are summarised with neutral or negligible effects excluded.

14.6.4 Only one minor/ negligible inter-project effect was identified for the construction phase, however this effect was assessed as not significant.

14.6.5 Some localised significant adverse inter-project effects are anticipated during the operational phase for landscape and visual receptors. Further details are provided in **ES Volume II, Chapter 9: Landscape and Visual**, however in summary, it was identified that the introduction of the Proposed Development would contribute to cumulative effects most significantly within the 10 to 13 km range, with effects diminishing rapidly beyond this distance.

14.6.6 The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development, however, for the majority of the landscape, intervening landform and vegetation would prevent such combined visibility, with locations generally limited to upland areas. This would create views with turbines visible in multiple directions, impacting the visual amenity of these areas to some degree, but it is these more elevated locations from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view. Pant Y Maen (existing Wind Farm) and Alwen Forest (recently consented wind farm) are located close to other existing wind farms, consolidating the presence of wind energy in that part of the landscape, and at distances of 12 km and 16 km from the Proposed Development are too distant to increase the effects identified for the Proposed Development, with many locations in the landscape having no visibility of both the Proposed Development and the two schemes. The Eryri national park would experience significant effects, but these would not be materially worsened as a result of cumulative effects. Similarly, effects on the Clwydian Range and Dee Valley National Landscape would not be materially worsened as a result of cumulative effects, with minor effects assessed due to the distance to the landscape designation.

14.6.7 Significant beneficial inter-project effects on global greenhouse gas emissions would result from cumulative wind farm developments. These would collectively contribute towards Welsh net-zero ambitions and global climate change mitigation.

14.6.8 All other inter-project effects listed in **Table 14.5** are assessed as not significant.

Table 14.4 Summary of Committed Developments

Planning Reference	Name	Status (October 2025)	Distance from Site (km)	Material reviewed to inform assessment	Rationale for scoping in project
07/2022/0824	Tyfos, Pen Y Geulan Solar Array	Planning Application Consented	7.84	Heritage Impact Assessment, Landscape and Visual Impact Assessment (LVIA), PEA, Planning Statement / DAS	Within ZoI for Terrestrial Ecology, Ornithology and Cultural Heritage
25/2015/0321	Pant Y Maen Wind Farm	Planning Application Consented	15.30	Environmental Statement	Within ZoI for Landscape and Visual, Traffic and Transport and Aviation
DNS/3214855	Alwen Forest	Planning Application Consented	10.08	Environmental Statement	Within ZoI for Landscape and Visual, Terrestrial Ecology, Ornithology and Aviation
DNS CAS-02646-S1G1Q8	Moel Chwa Energy Park	Scoping Report Submitted	4.30	Scoping Report	Within ZoI for Landscape and Visual, Terrestrial Ecology, Ornithology, Noise and Vibration, Cultural Heritage, Land, Soils and Water and Aviation

Planning Reference	Name	Status (October 2025)	Distance from Site (km)	Material reviewed to inform assessment	Rationale for scoping in project
DNS/3276735	Gaerwen Wind Farm	Planning Application Submitted	5.09	Environmental Statement	Within ZoI for Landscape and Visual, Terrestrial Ecology, Ornithology, Noise and Vibration, Cultural Heritage and Aviation
DNS CAS-02040-L8C8B7	Carnedd Wen Wind Farm	Scoping Report Submitted	25.50	Scoping Report, Further Information Pertaining to LVIA and Transport	Within ZoI for Landscape and Visual and Aviation
DNS CAS-03719-R0C2Z0	Llanbrynmair Wind Farm	Scoping Report Submitted	27.89	Scoping Report	Within ZoI for Landscape and Visual, Traffic and Transport and Aviation
DNS/3213154	Mynydd Lluest Y Graig	Scoping Report Submitted	32.04	Scoping Report	Within ZoI for Landscape and Visual
DNS CAS-02362-P3S4H4	Llyn Lort Energy Park	Scoping Report Submitted	33.85	Scoping Report	Within ZoI for Landscape and Visual
C20/0963/04/YA	Rhiwlas Home Farm	Approved	2.45	Location Plan, Ecology Report and Proposed Plan	Within ZoI for Terrestrial Ecology, Ornithology and Land, Soils and Water
DNS CAS-03622-F3N1Q7	Mynydd Mawr Energy Park	Scoping Report Submitted	20	Scoping Report	Within ZoI for Landscape and Visual and Aviation.
DNS CAS-03831-V4M6N5	Esgair Ddu Energy Park	Scoping Report Submitted	30	Scoping Report	Within ZoI for Landscape and Visual

Planning Reference	Name	Status (October 2025)	Distance from Site (km)	Material reviewed to inform assessment	Rationale for scoping in project
0/52115	Proposed new slurry lagoon	Approved	7.29	Location Plan and Lagoon Plan	Within ZoI for Terrestrial Ecology and Ornithology
P/2010/0762/ 20/1610/REM	Carno III Wind Farm (This development is beyond the largest Zone of Influence identified (35 km) but has been included as it is considered relevant to the transport assessment)	Approved	45	Environmental Statement	Within ZoI for Traffic and Transport
EN020008 (Planning Act 2008; NSIP)	SP Mid Wales (Electricity) Connections Project (grid line)	Scoping Report Submitted	27.20	Scoping Report	The size (26 m high towers, 71 km length) and nature of the development has the potential to give rise to significant cumulative effects with the Proposed Development
DNS/3279559	Shotton Paper Mill	Planning Application Submitted	27.75	Environmental Statement	The size and nature of the development has the potential to give rise to cumulative effects with the Proposed Development
DNS/3251545	Bretton Hall Solar Farm	Approved	29	Environmental Statement	The size and nature of the development has the potential to give rise to

Planning Reference	Name	Status (October 2025)	Distance from Site (km)	Material reviewed to inform assessment	Rationale for scoping in project
					cumulative effects with the Proposed Development.

Table 14.5 Summary of Inter-project Cumulative Effects

Receptor	Type of effect	Nature of effect / effect description	Scale / Significance of effect
Construction phase			
Terrestrial Ecology - Habitat Loss	adverse	The Proposed Development, in combination with Gaerwen wind farm, The Tyfos, Pen Y Geulan solar array and Alwen Forest wind farm would result in a direct loss of 3.219 ha notable habitat (of which 1.5 ha is lost as a result of the Proposed Development). In the worst-case scenario cumulative indirect losses of notable habitat would total *c.*11.67 ha. The cumulative effect is considered to be **minor/ negligible adverse** effect, and therefore **not significant effect** is concluded.	**Minor/ Negligible (Not Significant)**
Operational phase			
Terrestrial Ecology - Bats	adverse	Both the Gaerwen wind farm and Alwen Forest wind farm predicts significant adverse effects at least at the local level in terms of collision risks to bats. In combination with the low collision risk to bats from the Proposed Development, the overall cumulative effect is considered to be **minor/ negligible adverse (not significant).**	**Minor/ Negligible (Not Significant)**
Ornithology - Berwyn SPA/SSSI (Red Kite population)	adverse	The collision mortality estimate for Gaerwen wind farm was an average of 0.8944 birds per year. Cumulatively with the annual estimate for the Proposed Development, this gives an estimate of 1.335 birds per year. This equates to 7.03% of the Berwyn SPA (and therefore assumed SSSI) population estimate (19 birds; from Hereward *et al*., 2024). This added mortality within the population (Berwyn SPA/SSSI) is insufficient to prevent a continued increase in the red kite population. The cumulative collision impact is	**Minor (not Significant)**

Receptor	Type of effect	Nature of effect / effect description	Scale / Significance of effect
		considered to be of low magnitude, resulting in a **minor adverse** and **not significant** effect.	
Ornithology - Golden Plover	adverse	The collision mortality estimate for Gaerwen wind farm was an average of 1.8025 birds per year. Cumulatively with the annual estimate for the Proposed Development, this gives an estimate of 11.0955 birds per year. Assessing the potential impact of the CRM mortality estimate against an estimated national (Welsh) population of 10,000 non-breeding golden plover predicts a loss of 0.111% of the non-breeding populations. The estimated annual cumulative mortality (11.0955 birds) represents a potential 0.411% increase in annual baseline national mortality (based on an estimated baseline mortality of 27%). Such a low level of additional mortality would be undetectable at this (national) scale. A **negligible** cumulative collision impact is predicted for golden plover at the national level (with no more than a low magnitude, **minor/ negligible (adverse)** cumulative collision impact predicted at the regional level), and **no significant effect** is concluded.	**Minor/ Negligible (Not Significant)**
Ornithology - Kestrel	adverse	The collision mortality estimate for Gaerwen wind farm was an average of 0.3523 birds per year, and 0.17 birds per year for Alwen Forest. Cumulatively with the annual estimate for the Proposed Development, this gives an estimate of 2.007 birds per year. Assessing the impact of this against the most conservative of the population estimates (530 pairs; from Pritchard *et al*., 2021), indicates the mortality estimate equates to a potential loss of 0.19 % of the breeding population each year.[3] The estimated annual	**Minor/ Negligible (Not Significant)**

[3] This is a precautionary estimate given that it is young (non-breeding birds) that are likely to be most susceptible to collision, and these birds are not included in the population estimate.

Receptor	Type of effect	Nature of effect / effect description	Scale / Significance of effect
		cumulative mortality (2.007 birds) represents a potential 0.61% increase in annual baseline national mortality. Such a low level of additional mortality would be undetectable at this (national) scale. Overall, a **negligible** cumulative collision impact is predicted for kestrel at the national level (with no more than a low magnitude, resulting in a **minor/ negligible (adverse)** cumulative collision effect predicted at the regional level), and **no significant effect** is concluded.	
Landscape Character	adverse	There would be potential for some effects to landscape character, albeit primarily relating to more elevated locations. The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development further impacting the character, however, for the majority of the landscape, intervening landform and vegetation would prevent such combined visibility, with locations limited to upland areas. This would create views with turbines visible in multiple directions, impacting the landscape character of these areas to some degree, by increasing the extent to wind energy characterises the experience of that part of the landscape. However, it is these more elevated landscapes from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view. Some significant effects to landscape character may occur where both the Proposed Development and one or more of the other schemes were both visible in the landscape. These effects would generally be restricted to that part of the landscape between the Proposed Development, Gaerwen	Some localised **significant** cumulative effects on landscape character.

Receptor	Type of effect	Nature of effect / effect description	Scale / Significance of effect
		and Moel Chwa, with no significant effects beyond 10 km from the Proposed Development.	
Visual Receptors	adverse	There would be potential for some cumulative visual effects, albeit primarily relating to views from more elevated locations. The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development, however, for the majority of the landscape, intervening landform and vegetation would prevent such combined visibility, with locations generally limited to more upland areas. This would create views with turbines visible in multiple directions, however, it is these more elevated locations from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view. Some significant visual effects may occur where both the Proposed Development and one or more of the other schemes were both visible in the landscape. These effects would generally be restricted to that part of the landscape between the Proposed Development, Gaerwen and Moel Chwa, with no significant effects beyond 10 km from the Proposed Development.	Some localised **significant** cumulative effects on visual receptors.
Landscape Designations	adverse	There would be potential for some cumulative effects on the designated landscapes considered in the LVIA (National Park, National Landscape and Special Landscape Area or SLAs), albeit primarily relating to views from more elevated locations. The schemes at Gaerwen at 6 km east and Moel Chwa at 5 km north-east would be the closest to the Proposed Development and have the greater potential to be seen more prominently in views alongside the Proposed Development, however, for the majority of	Some localised **significant** cumulative effects with regard to the SLAs.

Receptor	Type of effect	Nature of effect / effect description	Scale / Significance of effect
		the landscape within each of the landscape designations, intervening landform and vegetation would prevent such combined visibility, with locations generally limited to more upland areas. This would create views with turbines visible in multiple directions, however, it is these more elevated locations from which the existing wind energy in the landscape is already visible, such that it is an existing characteristic of the view. Some significant visual effects may occur where both the Proposed Development and one or more of the other schemes were both visible in the landscape. These effects would generally be restricted to that part of the landscape between the Proposed Development, Gaerwen and Moel Chwa, therefore relating primarily to the SLAs, rather than the National Park and National Landscape.	
Atmosphere	Beneficial	All wind farm projects contribute cumulatively offsetting global emissions of greenhouse gasses from energy generation, and any other wind-based energy generation projects in Powys and Wales would be highly likely to result in total emissions savings by offsetting fossil fuel contributions to grid electricity. The Welsh government has set ambitious targets to reduce national GHG emissions to net-zero by 2050, with renewable energy being a fundamental part of this plan. The cumulative effects from these existing and potential wind farm developments will contribute towards Welsh net zero ambitions and global climate change mitigation.	**Beneficial Significant**

14.7 Difficulties and Uncertainties

14.7.1 The assessment of intra- and inter-project effects has been based on assessments undertaken in **ES Chapters 5** to **13**. The inter-project effects assessments have been based on publicly available third party information obtained from the relevant planning applications on the DNS Portal, the Register of Development Consent Order portal, Gwynedd Council and other planning portals including Denbighshire County Council, Conwy County Borough Council, Powys County Council and Wrexham County Council. For some of the identified approved developments, relevant information for this assessment has not been available. As a result, some assessment considerations have been based upon assumptions and professional judgement and some statements made would rely on the review of mitigation measures proposed at the approved developments.

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