# Joint Submission and Community Representation Response to Garreg Fawr Energy Park Environmental Scoping Report (Developments of National Significance CAS-04309-C2Q2B9)

Joint Submission and Community Representation Response Prepared for and Submitted to the Planning and Environment Decisions Wales in response to the published proposed Garreg Fawr Environmental Scoping Consultation.

Submitted to PEDW on 4th November 2025

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## 1. Joint Submission and Community Representation - Forward

This submission is made on behalf of residents and stakeholders who share deep concern regarding the significant errors and omissions identified in the published *Garreg Fawr Environmental Scoping Report.*

It represents a coordinated, evidence-based response that integrates professional expertise with community insight, ensuring that both local knowledge and technical understanding are fully reflected.

Rather than a series of isolated responses, as requested by PEDW, this document presents a unified statement demonstrating the breadth and depth of community knowledge, skill, and engagement.

The identified inaccuracies and omissions, spanning environmental, landscape, and community amenity matters, illustrate that these issues are of shared importance across both professional and residential sectors.

This joint response reinforces the need for rigorous and transparent scrutiny of the proposals and highlights the importance of comprehensively assessing cumulative and cross-disciplinary impacts within the forthcoming PEDW Scoping Direction.

This submission has my full endorsement and support.

**Cllr Iain McIntosh**
**County Councillor for the Yscir with Honddu Isaf and Llanddew ward in Powys, Wales.**

## Joint Submission and Community Representation Participants

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**Community Project Lead - Responsibility** the Community Representation Project Lead for the proposed Garreg Fawr development is responsible for overseeing the community Scoping Report response and acting as the primary point of contact with stakeholders. This role includes coordinating the response team and addressing concerns raised by the community and is the link with PEDW relating to this issue.

**Community Project Lead - Introduction** My name is Gary Smith, and I am a *Chartered Fellow of the Institution of Occupational Safety, a Health* and *Safety Engineer*, and a *Fellow of the Royal Society for Public Health*. I have lived in Llanfihangel Nant Bran for more than thirty years.

This document provides an independent, professional, and community-led review of the *Garreg Fawr Energy Park Environmental Scoping Report* (Developments of National Significance: CAS-04309-C2Q2B9). It presents a detailed technical evaluation identifying substantive deficiencies, inconsistencies, and departures from established Welsh and UK environmental assessment standards.

The analysis integrates both professional expertise and practical familiarity with the proposed development area—its ecology, topography, and environmental sensitivities.

The response is structured in alignment with the standard Environmental Impact Assessment (EIA) topic framework, with sections addressing:

- Project Parameters and Grid Connection
- Landscape and Visual
- Cultural Heritage
- Ecology
- Peat and Soils
- Hydrology
- Traffic and Transport
- Noise
- Alternatives
- Document Transparency

The following legislation, policy, and technical guidance have been referenced in preparing this submission.

This compilation demonstrates that the review is evidence-based, aligned with current Welsh and UK standards, and draws upon both statutory requirements and widely recognised professional best practice.

## Relevant Legislation, Policy, and Technical Guidance

**Planning and Policy Framework**
Countryside and Rights of Way Act 2000
Environment (Wales) Act 2016
Future Wales - The National Plan 2040 *(Welsh Government, 2021)*
Hedgerows Regulations 1997
Historic Environment (Wales) Act 2016
Planning Policy Wales (Edition *12, 2024)*
Town and Country Planning Act 1990 (as amended)
Well-being of Future Generations (Wales) Act 2015
Wildlife and Countryside Act 1981 (as amended)

**Environmental Impact Assessment Regulations**
Environmental Impact Assessment (Wales) Regulations 2017

**Landscape and Visual Guidance**
Guidelines for Landscape and Visual Impact Assessment *(3rd Edition)*
NatureScot Visual Representation Guidance *(2017)*
Landscape Institute Technical Guidance Notes

**Noise and Vibration Guidance**
BS 5228:2009+A1:2014 - Code of Practice for Noise and Vibration Control on Construction and Open Sites
ETSU-R-97: The Assessment and Rating of Noise from Wind Farms *(DTI, 1997)*
Institute of Acoustics Good Practice Guidance
CIEH / WHO Guidelines for Environmental Noise
ISO 9613-2:1996 - Acoustics: Attenuation of sound during propagation outdoors

**Ecology and Habitat Guidance**
CIEEM Guidelines for Ecological Impact Assessment
JNCC / Natural Resources Wales Species and Habitat Guidance
UK Biodiversity Action Plan / Local Biodiversity Action Plans

**Hydrology and Soil Management**
CIRIA Sustainable Urban Drainage Systems (SuDS) Manual
DEFRA / Environment Agency Pollution Prevention Guidance

**Traffic and Transport**
UK Traffic Signs Manual
Design Manual for Roads and Bridges (DMRB)

**Renewable Energy and Sector Specific Guidance**
IEA Wind Task 11 / UK Renewable Energy Environmental Assessment Guidance
Scottish Natural Heritage (SNH) Guidance on LVIA and Cumulative Effects

**Other Technical Guidance**
Natural Resources Wales Technical Guidance

In addition, this review incorporates community derived observations relating to local environmental conditions, cultural landscape, turbine placement, hydrology, and ecology intended to assist PEDW and the applicant in achieving a more robust, transparent, and context-sensitive assessment.

Where appropriate, formal requests for clarification or corrective action are included.

I am happy to discuss any aspect of this submission and can be contacted by email at gary@tyclyd.co.uk.

Gary Stephen Smith

Gary S. Smith

*Cover image entitled "The Unmaking of a Landscape"*

## 2. Executive Summary

This joint community and stakeholder submission has been prepared in response to the Garreg Fawr Energy Park Environmental Scoping Report (DNS CAS-04309-C2Q2B9).

It brings together local understanding, technical review and professional expertise to assist Planning and Environment Decisions Wales (PEDW) in ensuring that the forthcoming Environmental Impact Assessment (EIA) is robust, transparent, and aligned with established Welsh standards.

The submission aims to provide constructive observations to support a technically sound and policy-compliant assessment. It recognises the national importance of renewable energy development and seeks to ensure that environmental, social and procedural safeguards are fully integrated within the scoping process.

In reviewing the Scoping Report, multiple areas have been identified where further clarification, definition or expansion would strengthen the evidence base and help secure compliance with the Environmental Impact Assessment (Wales) Regulations 2017, the Well-being of Future Generations (Wales) Act 2015, Planning Policy Wales (Edition 12), and Future Wales - The National Plan 2040.

The definition of project parameters would benefit from greater precision to establish a clear “worst-case” scenario in line with the approach endorsed by PEDW in recent decisions, including those for Pen March Wind Farm, Nant Mithil Energy Park and Lluest y Gwynt. A fixed project envelope at the scoping stage enables a transparent and consistent assessment of environmental effects across all receptors.

Several topic areas, such as human health, agricultural land use, tourism and recreation, and dark sky impacts require inclusion within the EIA scope. This would reflect current PEDW practice and ensure that social, economic and well-being considerations are addressed alongside environmental factors. Similarly, the grid connection and ancillary infrastructure should be incorporated either as part of the main project or as a defined cumulative development, consistent with Planning Policy Wales guidance that related components should be assessed together.

Further work to complete ecological, hydrological and soil baseline data will help provide a more comprehensive understanding of local conditions and ensure alignment with the technical standards of Natural Resources Wales and the Chartered Institute of Ecology and Environmental Management. Continued data collection through multiple seasons will help demonstrate that environmental receptors have been fully characterised prior to assessment.

The landscape and visual impact assessment methodology should be strengthened by confirming adherence to the Guidelines for Landscape and Visual Impact Assessment (Third Edition) and the NatureScot Visual Representation Guidance (2017), including night-time and cumulative viewpoints. Incorporating these recognised standards will assist both PEDW and consultees in understanding the visual context of the proposal within the wider Mid Wales landscape.

This submission also highlights the importance of maintaining procedural continuity as the consenting system transitions from the Developments of National Significance (DNS) regime to the new Significant Infrastructure Projects (SIP) framework under the Infrastructure (Wales) Act 2024. It is advocated that the data, baselines and methodologies agreed during this DNS scoping process remain valid and transferable to ensure consistency, transparency and fairness throughout determination.

The intention of this submission is to support a clear, consistent and evidence-based scoping direction. It is hoped that these observations will assist PEDW and the applicant in refining the Environmental Statement so that all significant effects can be appropriately assessed and mitigated, in keeping with Welsh planning principles and the objectives of sustainable development.

## 3. Project Parameters, Rochdale Envelope Definition and SIP

The Scoping Report fails to define a clear and constrained "Rochdale Envelope" for the proposed wind farm. Instead, it seeks broad design flexibility (e.g. turbine tip height "up to 220m", unspecified rotor diameter, extensive micrositing allowances) without fixing a single worst-case scenario for assessment.

This lack of a defined worst-case set of parameters undermines the Environmental Impact Assessment process - We cannot ascertain the true likely impacts if key attributes (turbine size, layout, etc.) remain fluid. Crucially, the Environmental Impact Assessment Regulations 2017 (Wales) require that an Environmental Statement include a "description of the development, including in particular a description of the physical characteristics of the whole development"

By not committing to specific dimensions and maximum extents, the Scoping Report falls far short of the regulatory requirement for a clear project description. The current approach would permit material changes post-scoping (or even post-consent) without reassessment, which is procedurally improper.

Planning Policy Wales emphasises that planning decisions must be based on "clear descriptions of development" and robust evidence of impacts, aligning with the Well-being of Future Generations Act and goals of transparency and governance. Moreover, under Future Wales - The National Plan 2040 (Welsh Government, 2021): The National Plan 2040 Policy 18, even renewable energy proposals must not result in any "unacceptable adverse impact" on the environment - a determination that is impossible if the worst-case impacts are not plainly assessed.

### Required Action - Refine the Project Parameters

The Applicant must refine the project parameters to "fix" a realistic worst-case envelope for all key components before Environmental Impact Assessment progresses. This includes specifying the maximum number of turbines, exact maximum tip height, hub height, rotor diameter (and hence rotor swept area), as well as the greatest extent of ancillary works (track lengths, crane hard standings, borrow pits, substation, etc.) that will be assessed.

Micrositing allowances should be limited (e.g. ≤ 20m or another minor tolerance) and clearly stated.

No "optional" turbines should be left floating in the design - if certain turbines (for example, proposed turbines T15-T19) are likely to be removed or relocated to reduce impacts, this must be confirmed now and reflected in the assessed layout, rather than deferred as a vague future design change. All relevant project coordinates, elevations and dimensions should be published in the Environmental Impact Assessment stage.

In summary, the Environmental Statement should assess a single, clearly defined design scenario representing the maximum adverse case on all receptors, as per Environmental Impact Assessment best practice. This will enable ourselves, other consultees and regulators to evaluate impacts with confidence. Post-scoping design flexibility should be strictly limited to non-material refinements; any substantial deviation from the envelope would necessitate a fresh assessment

### Location Outside Pre-Assessed Area

The proposed Garreg Fawr development is not located within any Pre-Assessed Area as defined by relevant planning policy. Pre-Assessed Areas are specifically identified as locations where development has been pre-evaluated and deemed potentially suitable, considering environmental sensitivity, landscape value, and community considerations.

The fact that this site falls outside such areas underscores that it has not been assessed as appropriate for the scale or type of development proposed.

This absence of pre-assessment highlights the heightened risks to the local environment, landscape, and community amenity, and reinforces the need for PEDW to scrutinise the proposals rigorously rather than assuming any inherent suitability.

### Supporting Citations

The importance of defining a worst-case design is underscored by Welsh Environmental Impact Assessment law and guidance. Schedule 4 of the Environmental Impact Assessment Regulations requires the Environmental Statement to include a description of the development's physical characteristics and land use. Without a fixed envelope, this requirement is not met.

Institute of Environmental Management and Assessment guidance on Environmental Impact Assessment also stresses that the "mitigation hierarchy" begins with avoidance through careful site selection and design, rather than assuming broad flexibility and then retrofitting mitigation.

To that end, the proposed project should be designed to avoid the worst impacts from the outset, for example by excluding turbines in particularly sensitive locations (such as any that encroach on unacceptable proximity to communities or ecological hotspots).

Locking in a defined layout now accords with the "avoid-prevent-reduce-offset" sequence in modern Environmental Impact Assessment practice and will prevent the project from relying on open-ended parameters that could mask significant effects.

### Transitional Planning Context

From 15 December 2025, the consenting process for major energy infrastructure projects in Wales will transition from the Developments of National Significance (DNS) framework to the new Significant Infrastructure Projects (SIP)regime, as set out in the Infrastructure (Wales) Act 2024.

Given that the Garreg Fawr Energy Park proposal remains at the scoping stage, it is foreseeable that Bute Energy / Green GEN Cymru may seek to continue determination under the forthcoming SIP process.

To ensure procedural and legal continuity, it must be confirmed that all determinations, directions, and environmental requirements established under the DNS process are fully binding, portable, and enforceable within the SIP framework.

This includes the retention of all baseline datasets, receptor definitions, assessment methodologies, and consultation obligations, consistent with the principles of Planning Policy Wales (Edition 12) and the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004.

Such continuity is essential to prevent any re-scoping or dilution of assessment parameters following the transition to SIP, and to ensure that environmental integrity and stakeholder consultation commitments remain intact across both regimes.

### Required Action - Continuity of Environmental Scope under SIP

To maintain the integrity and continuity of the Environmental Impact Assessment (EIA) during the transition from the Developments of National Significance (DNS) regime to the Significant Infrastructure Projects (SIP) framework, it is essential that the published PEDW Scoping Direction explicitly stipulates the following provisions.

- Binding Baselines: All baseline datasets, receptor sensitivities, and assessment boundaries established under the DNS process shall remain binding, non-negotiable, and directly transferrable to the SIP regime.
- Equivalence or Enhancement of Scope: Any Environmental Statement or equivalent documentation submitted under SIP shall equal or exceed the DNS scoping parameters in terms of spatial coverage, assessment methodology, technical detail, and impact evaluation criteria, in accordance with the Infrastructure (Wales) Act 2024 and The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

- Regulatory Control of Changes: No omission, re-scoping, or redefinition of study areas or receptors may occur without prior written approval from PEDW and the Welsh Ministers, following a process of public notification and consultation consistent with the procedural safeguards embedded in the DNS and SIP regimes.

These provisions are necessary to preserve the legal robustness and environmental continuity of the assessment process and to ensure that no diminution of scope or environmental accountability occurs because of the procedural transition.

## 4. Tourism and Recreation - Request to Scope In

It is requested that Tourism and Recreation be scoped into the Environmental Impact Assessment as a distinct topic area within the Socio-Economic Chapter.

The proposed Garreg Fawr Energy Park is located between Brecon, Builth Wells and the Irfon Valley — an area of recognised landscape quality forming part of the setting of the Bannau Brycheiniog (Brecon Beacons) National Park.

The Mid Wales visitor economy is highly dependent on the quality, tranquillity and visual integrity of this landscape. According to the STEAM Mid Wales Tourism Report (2023), tourism contributes approximately £1 billion in direct visitor expenditure annually, supporting thousands of local jobs. Within Powys alone, tourism accounts for around 9% of total employment and represents one of the county's most important economic sectors.

The Bannau Brycheiniog National Park attracts around 4.4 million visitors each year, generating over £278 million in annual visitor spending (National Park Authority Visitor Survey 2018).

Many of these visitors travel through or stay within the surrounding rural communities, including the valleys and uplands near the proposed site, to engage in walking, cycling, nature-based recreation and scenic touring — activities particularly sensitive to large-scale changes in landscape character and visual amenity.

Given that Garreg Fawr proposes up to 22 turbines of up to 220 metres to tip height, there is a clear potential for adverse effects on the perception of landscape quality, the enjoyment of public rights of way, and the appeal of local accommodation and visitor businesses.

These effects will also act cumulatively with other operational and proposed wind energy schemes in Mid Wales, resulting in measurable consequences for the regional visitor economy.

Accordingly, the following matters should be scoped into the EIA:

1. Tourism Impact Assessment - to identify and quantify potential effects on the local and regional visitor economy, including accommodation, hospitality, and outdoor activity sectors.
2. Recreational Access and Amenity Assessment - to evaluate potential impacts on public rights of way, promoted trails, cycle routes, and open-access land, including visual, noise, and experiential changes.

3. Visitor Perception Study - to assess likely changes in visitor attitudes to the area arising from large-scale wind energy development, informed by relevant UK research and case studies.
4. Cumulative Tourism Assessment - to consider the combined effects of Garreg Fawr and other operational, consented, and proposed wind energy developments within the Mid Wales landscape.
5. Mitigation and Enhancement Measures - to identify measures to avoid, reduce, or offset adverse impacts and to enhance tourism and recreational value where practicable.

Excluding tourism and recreation from the EIA risks underestimating the socio-economic consequences of the development and would not align with the requirements of the *Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017*, which require consideration of factors likely to have a significant effect on the environment, including population, human health, and their interaction with landscape and socio-economic receptors.

**Required Action - Include Tourism** The scoping stage must include the impact on tourism in the project envelope and the Environmental Statement.

## 5. Human Health - Request to Scope In

The applicant has made a request to scope Human Health out of the Environmental Impact Assessment (16.3 Page 192).

In accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended), the Environmental Statement for the proposed development must consider the likely significant effects of the development on the environment, including effects on population and human health (Schedule 4, Part 1).

While health-related outcomes are often addressed indirectly via specialist technical topics (e.g., noise, shadow flicker, air quality, socioeconomics), it is increasingly recognised by PEDW that health should be explicitly scoped into the EIA to ensure that potential effects on physical and mental wellbeing are comprehensively assessed, rather than simply inferred.

### Legislative and Policy Context

- Under Schedule 4 of the EIA Regulations 2017 (Wales), the Environmental Statement must include: “the likely significant effects of the development, on the environment, including on population and human health.”
- PEDW’s scoping directions for recent developments emphasise that the Environmental Statement should address “any significant effects on population and human health.
- The development must also align with the Well-being of Future Generations (Wales) Act 2015, which puts a statutory duty on public bodies to consider health and wellbeing in their decisions.

Given this framework, scoping out human health would be inconsistent with both regulatory requirements and national planning policy expectations.

### Rationale for Inclusion of Health in the Scope

The proposed Garreg Fawr Energy Park is of a scale and nature such that it will interact with a range of environmental determinants of health, both direct and indirect. The potential health pathways include:

- Noise and vibration - potential effects on sleep disturbance, annoyance, stress and wellbeing.
- Shadow flicker and visual intrusion - effects on amenity and sense of place.
- Air quality - construction-phase and traffic-related emissions may affect respiratory health.

- Socio-economic and community effects - employment, perception, and community cohesion impacts.
- Access, recreation and landscape change - influences on physical activity, recreation, and wellbeing.

### PEDW Position on Human Health Scoping

In recent scoping opinions issued by PEDW for comparable onshore wind energy developments in Wales, scoping directions have consistently included wording requiring assessment of population and human health as a defined receptor. For example: "The Applicant should ensure that the Environmental Statement addresses any significant effects on population and human health, in light of the EIA Regulations 2017." This precedent illustrates that PEDW expect applicants to explicitly incorporate human health within the scope of the assessment.

### Required Action - Scope in Human Health

It is recommended that PEDW require the applicant to scope in Human Health and include a dedicated Human Health chapter, framed as follows:

1. Baseline health and wellbeing context.
2. Pathway analysis linking environmental stressors to health outcomes.
3. Assessment of likely significant effects for construction, operation and decommissioning.
4. Quantitative and qualitative assessment using Public Health Wales and WHO guidance.
5. Mitigation and enhancement measures specific to health receptors.
6. Residual effect evaluation and significance determination.
7. Monitoring and follow-up including stakeholder engagement.

### Human Health - Conclusion

Given the regulatory requirements under the EIA (Wales) Regulations 2017, the policy expectation that health and wellbeing are central to sustainable development, and the clear precedent in recent PEDW scoping directions, it is necessary and appropriate that Human Health is scoped into the EIA for the Garreg Fawr Energy Park.

Explicit inclusion will ensure that the full range of direct, indirect and cumulative effects on health and wellbeing are transparently assessed and that the Environmental Statement provides a clear, structured health-focused assessment.

## 6. Air Quality - Request to Scope in

The proposal to scope out Air Quality from the Environmental Impact Assessment, as set out in Section 16.4 of the Applicants scoping Report, is not justified by the evidence presented.

The applicant's conclusion that effects will be negligible fails to take account of the scale, duration, and nature of construction activities associated with the proposed Garreg Fawr Energy Park, including extensive earthworks, material transport, concrete batching, and turbine foundation construction.

During the non-statutory consultation, the applicant confirmed the intention to establish one or more onsite concrete batching plants to reduce reliance on off-site deliveries. The operation of batching facilities introduces an additional, significant source of particulate and cement dust emissions, as well as vehicle and generator exhaust pollutants, all of which must be properly assessed.

These emissions have the potential to affect nearby residential receptors, agricultural holdings, and designated ecological sites within the Bran and Cilieni valleys, where baseline air quality conditions are currently good and sensitive to change.

The baseline air quality appraisal contained in the Scoping Report is generic and desk-based, relying on regional DEFRA background datasets without any local monitoring or dispersion modelling. Such an approach does not adequately reflect the likely emission sources, meteorological conditions, or topographic influences specific to this upland environment. Given the intensity of construction and the proposed onsite batching activity, there is a clear need for a quantitative construction-phase air quality assessment, incorporating dust, $PM_{10}$, $PM_{2.5}$, and $NO_x$ emissions.

This assessment should follow recognised professional standards, including:

- Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning (2020).
- DEFRA Local Air Quality Management Technical Guidance (TG22); and
- Relevant Welsh Government air quality policy and environmental protection guidance.

In addition, the transport of turbine components, concrete, and aggregates via rural access roads will lead to a temporary increase in heavy-duty vehicle movements and associated exhaust emissions, which—combined with dust emissions from earthworks and batching operations—could result in short-term air quality deterioration, dust nuisance, or deposition on sensitive habitats.

**Required Action - Air Quality** should remain a scoped-in topic within the EIA. The Environmental Statement must provide:

- A site-specific baseline air quality review supported by receptor mapping and local context.
- Quantitative dispersion modelling of construction and batching plant emissions under worst-case meteorological conditions.
- An assessment of cumulative impacts from other regional developments or infrastructure projects; and
- A Dust and Emissions Management Plan (DEMP) detailing mitigation, monitoring, and adaptive control measures (including enclosure of batching operations, water suppression systems, and wheel-wash facilities).

Excluding Air Quality from the scope of the EIA would be inconsistent with the requirements of Schedule 4 of the EIA (Wales) Regulations 2017, which mandate assessment of significant effects on population, human health, and material assets, and would therefore undermine the technical adequacy and regulatory compliance of the environmental assessment.

## 7. Agricultural Land Use - Request to Scope In

It is requested that Agricultural Land Use be scoped into the Environmental Impact Assessment (EIA) as a distinct topic area within the Socio-Economic Chapter.

Agriculture plays a key role in the economic stability of the locality. Many farmers rely on using the common land to graze their livestock at various times of the year and to harvest bracken. The same farms rely on water sources rising on the high common, which feed streams and private water supplies that keep their homes and livestock supplied with essential water. These water sources may be affected by ground disturbance, pollution pathways, or abstraction changes during construction, and this should be reviewed within the EIA.

Disturbance, diversion, or contamination of spring sources during construction activities such as excavation, track formation, or drainage works—will adversely affect livestock watering reliability and lead to localised habitat degradation, including siltation of downstream watercourses and loss of wet flush vegetation communities

Construction activities are likely to result in direct physical and financial impacts on local graziers. These potential effects should be assessed, quantified, and documented as part of the Scoping exercise.

Accordingly, the following matters should be scoped into the EIA:

### Agricultural Land Use - Impact Assessment

An Agricultural Land Impact Assessment should be undertaken to identify the economic and practical effects likely to be experienced by local graziers and landholders. This should include an assessment of:

- Additional operational costs that graziers may incur during the construction phase.
- Economic losses resulting from the displacement of sheep from their established hefted areas on the hill.
- The loss of environmental payments currently received by farmers under the Welsh Government's Habitat Wales Scheme, due to disruption of grazing regimes that deliver environmental benefits.
- The loss or reduction of productive grazing land, leading to the need for farmers to secure additional grazing away from the common to maintain flock numbers.

This assessment should be consistent with Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, which requires the evaluation of socio-economic effects.

### Compliance with the Agriculture (Wales) Act 2023

Farmers and landowners in Wales are required to manage their land in accordance with the Agriculture (Wales) Act 2023, including the four Sustainable Land Management (SLM) objectives established in the Act:

- Produce food and other goods in a sustainable manner.
- Mitigate and adapt to climate change.
- Maintain and enhance the resilience of ecosystems and the benefits they provide.
- Conserve and enhance the countryside and cultural resources, promote public access and engagement, and sustain the Welsh language and promote and facilitate its use.

The Scoping Report should review and evidence the positive contribution that local graziers make towards these objectives through their management practices and evaluate the environmental and biodiversity losses likely to arise because of the proposed development.

### Required Action - Agricultural Land Use

- Include Agricultural Land Use within the Scoping Document.

### Agricultural Land Use - Conclusion

This submission forms part of the respondent's representation to Planning and Environment Decisions Wales (PEDW) concerning the proposed wind farm development. It specifically addresses the treatment of Agricultural Land Use within the Environmental Impact Assessment (EIA) scope, providing justification for its inclusion as a discrete assessment topic.

Failure to include Agricultural Land Use within the EIA scope would result in an incomplete understanding of the interdependencies between local agricultural practices, socio-economic stability, and environmental sustainability. It is therefore essential that this topic be fully scoped into the EIA and evaluated to ensure compliance with Welsh Government policy and statutory assessment requirements.

## 8. Grid Connection and Ancillary Infrastructure

The Scoping Report provides minimal information about the grid connection for the proposed wind farm (e.g. the transmission line route and any off-site substation upgrades), implying that these may be subject to a separate process or left unspecified.

This is a critical omission. The electrical grid connection is an integral part of the project's infrastructure, without which the wind farm cannot export power, and it has its own potential significant effects (overhead lines or underground cables will impact landscapes, habitats, and communities along their route).

Excluding or deferring the grid connection details at scoping stage undermines the completeness of the Environmental Impact Assessment. There is a risk of "project splitting" where impacts of the generation site and the grid line are considered in isolation, thus underestimating cumulative effects.

Welsh Government policy is clear that the full extent of development, including associated infrastructure, should be assessed together: Planning Policy Wales 12 reinforces that developments must be planned and designed in an integrated way, considering all ancillary components (grid, access, etc.) from the outset.

Natural Resources Wales's advisory guidance for developers on grid infrastructure explicitly states that new projects should "avoid placing infrastructure where environmental constraints will make consent difficult" and to consider co-locating and undergrounding cables where possible. It also highlights that peatlands, ancient woodlands, and floodplains should be avoided when routing grid lines.

Additionally, the Design Commission for Wales guidance (Designing for Renewable Energy in Wales, 2023) emphasises that "the siting and design of ancillary infrastructure" (including transmission lines and substations) must relate sensitively to landscape character, and that every opportunity should be sought to integrate such infrastructure into the existing landscape fabric.

**Required Action - Scoping**
The scoping stage must include the grid connection in the project envelope or at least in the cumulative assessment. The Applicant should provide:

**Required Action - Grid Connection** a description of the likely grid connection route options (overhead or underground) and the location/design of any proposed substations or cable sealing end compounds.

**Required Action - Environmental Constraints** an initial appraisal of the environmental constraints along the grid route (e.g. proximity to dwellings, crossing of sensitive habitats like rivers or peat, visual impact of poles/towers) and.

**Required Action - Impacts** a commitment that the Environmental Statement will assess the grid connection impacts to an equivalent level as the wind farm itself, whether as part of the main application (preferred) or in a parallel consenting process is required.

**Grid Connection - Conclusion**
It should be made clear that if the grid connection is to be subject to a separate consent, its environmental effects will still be evaluated in the wind farm Environmental Statement as a cumulative development intrinsically linked to the project. This approach is consistent with Environmental Impact Assessment case law requiring that functionally inter-dependent projects be assessed together to avoid a piecemeal evaluation of environmental effects.

By addressing the grid connection now, the Applicant and consultees can identify any fatal flaws or major mitigation requirements early (for example, if an overhead line would traverse a nearby village or scenic area, prompting consideration of undergrounding).

To summarise, the Scoping Direction should ensure that the Environmental Statement includes the grid connection route and infrastructure in sufficient detail, or at minimum includes it in the cumulative effects chapter, ensuring no gaps in impact assessment.

## 9. Landscape and Visual Impact Assessment

The Scoping Report's approach to landscape and visual impact assessment is insufficient and does not fully comply with accepted standards (Guidelines for Landscape and Visual Impact Assessment, Third Edition and NatureScot guidance). Several concerns are noted:

### Viewpoint Selection

The shortlist of viewpoints appears limited and does not cover all highly sensitive receptors. Notably, viewpoints within the Bannau Brycheiniog National Park (Brecon Beacons) and from locally important vantage points (e.g. the Epynt Way long-distance path, and key community views from nearby villages such as Merthyr Cynog and Llanfihangel Nant Bran) all need comprehensive coverage.

The scoping proposes to exclude certain smaller scale developments from cumulative visual assessment, and to restrict the study area (with cut-offs like 32 km for large turbines, 10 km for medium, etc.), without evidence that those exclusions are justified.

Rigid distance or height cut-offs risk omitting developments that, in combination, could still contribute to significant cumulative effects (for example, multiple smaller turbines on a ridgeline or a cluster just outside the radius could together affect views).

### Photographic Methodology and Visualisations

The Scoping Report has not confirmed adherence to the NatureScot (Scottish Natural Heritage) Visual Representation of Wind Farms Guidance (Version 2.2, 2017). This guidance - which is also followed as best practice in Wales - requires that all Environmental Impact Assessment visualisations (panoramic photographs, photomontages, wirelines) meet strict standards so that they are accurate and easily understood.

The applicant must note that any deficiencies in the preliminary photography (e.g. unclear focal length, poor lighting/weather conditions, lack of a 360° baseline panorama, or insufficient resolution) will misrepresent the true visual impact.

The Scoping Report does not explicitly commit to producing 90° Vertical Field of View panoramas or 53.5mm equivalent focal length images as recommended, nor does it mention providing image metadata and a visualisation methodology statement - all of which are required by NatureScot's guidance to ensure verifiability. In short, there is a concern of potential "Landscape and Visual Impact Assessment photography flaws" if these standards are not upheld

### Night-Time Lighting Assessment

The proposal's turbines (up to 220 m tip height) will almost certainly require aviation safety lighting (medium-intensity red lights) on the nacelles. However, the Scoping Report does not commit to producing night-time photomontages or a night-time visual impact assessment.

Given the project's proximity to both Merthyr Cynog and Llanfihangel Nant Bran and the National Park (an International Dark Sky Reserve) and other local rural communities, the visual impact of blinking red lights after dark will be significant.

According to Guidelines for Landscape and Visual Impact Assessment, Third Edition guidance (and clarified in professional notes), a night-time assessment is necessary when lighting will potentially have a significant influence on landscape or viewers.

The proposed development sites dark sky status means turbine lighting will introduce new visual intrusion. Failing to assess this would leave a serious gap, especially as the National Park's statutory purpose includes conserving scenic beauty, which extends to night landscapes.

### Cumulative Landscape and Visual Impact Assessment

The Scoping methodology suggests that the list of other wind projects will be refined "following consultation", but without presenting a transparent GIS-based Zone of Theoretical Visibility overlap analysis or rationale for inclusion or exclusion of each site.

This prevents me and other consultees from making objective assessment. Best practice (e.g. NatureScot guidance on cumulative effects) dictates that the applicant demonstrate why certain projects are screened out - for instance, by showing no overlapping visibility or different affected receptors - rather than simply applying broad criteria. Moreover, sequential visual effects along key routes (like travellers along the A40, or walkers on the Epynt Way) should be explicitly considered, but the scoping is silent on sequential analysis.

### Relevant Guidance

The Guidelines for Landscape and Visual Impact Assessment, 3rd Edition require a robust justification of viewpoint selection and transparent assessment of sensitivity and magnitude of change for each receptor.

Visual receptors of different types (e.g. residents, motorists, hillwalkers) should have representative viewpoints.

Future Wales - The National Plan 2040 (Welsh Government, 2021) (Policy 17) recognises the substantial landscape change potential of large wind schemes and indicates that even within Pre-Assessed Areas, projects must demonstrate acceptable landscape effects.

NatureScot's 2017 Visual Representation Guidance is explicit that all Environmental Impact Assessment developments "should include visualisations which comply with the standards set out in the guidance" - this covers image format, horizontal field of view, and presentation of wirelines and photomontages at the prescribed sizes and viewing distances.

Additionally, Natural Resources Wales's own landscape advice (which aligns with NatureScot's) would expect night-time effects to be addressed if aviation lights are required, referring to the NatureScot Guidance on Aviation Lighting Impact Assessment (2017) which outlines how to evaluate lighting impacts in a staged approach.

### Required Action - Expand and justify viewpoint selection

The Applicant should consult with stakeholders (including the National Park and the local community) to add any missing viewpoints that represent worst-case impacts - for example, viewpoints on high ground within Bannau Brycheiniog, viewpoints at or near local settlements (farms, houses and public spaces) with clear views of the site, and along popular routes (scenic drives, trails). Each chosen viewpoint should be tabulated with rationale and agreed with residents if possible.

### Required Action - Epynt Way Additional Viewpoints

The scoping document references the Epynt Way but omits critical representative viewpoints identified by the Epynt Way Association. At least two additional viewpoints are required:

- Druids Way (SN 923 360)
- Y Crug (SN 950 379)

Both offer panoramic southerly views towards the proposed turbine array.
Their inclusion is essential for compliance with the Guidelines for Landscape and Visual Impact Assessment (3rd Edition) and NatureScot Visual Representation Guidance (2017).

The applicant must therefore include these points in the Environmental Statement, with full-compliance daytime and night-time photomontages showing both baseline and cumulative views along with other viewpoints yet to be agreed.

### Required Action - Commit to full visualisation standards

The Scoping Direction should require that the Environmental Statement includes a complete set of daytime and night-time visualisations from all representative viewpoints. This means for each viewpoint: a baseline photograph (horizontal extent per guidance), a wireline and photomontage of the proposed development (to true scale), and for selected key views, an additional photomontage with cumulative schemes. Night-time photomontages should illustrate the turbine aviation lights in context (using worst-case clarity conditions). All images must follow the NatureScot 2017 standards (e.g. 75mm equivalent focal length for single-frame images or 90° panoramas, high resolution).

### Required Action - Night Sky Impact Analysis

The Environmental Statement should include a dedicated assessment of potential effects on dark skies and night-time visual amenity, recognising the importance of protecting the intrinsic darkness and visual quality of rural landscapes in Mid Wales. The proposed Garreg Fawr Energy Park is located within an area of extremely low baseline light pollution, where the absence of artificial night lighting contributes significantly to landscape character, ecological integrity, and community wellbeing.

As part of the Landscape and Visual Impact Assessment and Cumulative Effects Assessment, the applicant should provide a Night Sky Impact Analysis addressing both the direct and indirect effects of turbine lighting, aviation safety beacons, and other operational lighting sources. The assessment should include:

- Baseline light environment mapping, using quantitative measurements (e.g. luminance in cd/m² or lux levels) and qualitative descriptors to establish current dark-sky conditions.
- Zone of Theoretical Visibility (ZTV) modelling under night-time conditions to determine the extent and prominence of turbine lighting from key sensitive receptors, including residential properties, recreational viewpoints, designated landscapes (e.g. National Parks or Dark Sky Reserves), and key transport corridors.
- Assessment of visual contrast, colour temperature, and light spill, particularly in relation to existing background illumination and skyglow.
- Consideration of ecological receptors, particularly nocturnal species sensitive to artificial lighting, such as bats, owls, and invertebrates, with cross-reference to the Ecology and Ornithology chapters.
- Cumulative impact analysis, incorporating other existing or consented wind energy developments in the region with visible night lighting.

The Environmental Statement should also set out mitigation and enhancement measures to reduce or avoid adverse effects on dark skies, such as:

- The adoption of infrared or radar-activated aviation lighting systems.
- The use of directional or shielded luminaires on ancillary infrastructure to minimise upward and lateral light spill.
- Implementation of adaptive lighting controls, such as dimming or curfew settings outside of operational hours or in low-traffic conditions.
- Selection of lighting with appropriate spectral characteristics (e.g. warmer colour temperatures below 3,000 K) to minimise ecological disruption and skyglow.

The analysis should reference relevant guidance, including:

- Institute of Lighting Professionals (ILP) Guidance Note 01/21: The Reduction of Obtrusive Light.
- CIE 150:2017 - Guide on the Limitation of the Effects of Obtrusive Light.
- Welsh Government's Planning Policy Wales (Edition 12, 2021), which promotes the protection of tranquillity and dark skies as part of the natural environment; and
- EIA (Wales) Regulations 2017, which require assessment of significant effects on population, human health, biodiversity, and material assets.

Given the high sensitivity of the surrounding landscape to changes in night-time character and the presence of recognised Dark Sky Reserves within the wider region, it is essential that this analysis be undertaken at scoping stage and carried forward into the Environmental Statement. This will enable consultees and decision-makers to fully understand the extent to which the proposed development could alter night sky quality, affect landscape perception, and impact residential and recreational amenity after dark.

**Required Action - Robust Cumulative Landscape and Visual Impact Assessment:**
The Applicant must present a full list of other wind energy developments considered (operational, consented, in-planning, and in-scoping within a relevant radius - typically 20-35 km for visual, and further for very large turbines). For each, provide justification if any are excluded. A "Zone of Theoretical Visibility" map should be provided and used to identify where Garreg Fawr overlaps with others visually.

The Cumulative Landscape and Visual Impact Assessment should examine combined and sequential effects on landscape character and views, as required by Guidelines for Landscape and Visual Impact Assessment, Third Edition and NatureScot's cumulative guidance.

The Cumulative Landscape and Visual Impact Assessment should analyse the viewer experience for communities, visitors and travellers: e.g., how will the proposed development impact on residents and will someone moving through the area see

multiple wind farms in succession, and does that create a significant continuous visual impact or not? These analyses are omitted and must be clearly reported in the Environmental Statement.

### Landscape and Visual Impact Assessment - Conclusion

By addressing the above, the Landscape and Visual Impact Assessment will meet the necessary transparency and technical rigor, enabling decision-makers to judge whether this project's landscape and visual effects (alone and cumulative) are within acceptable limits or, conversely, conflict with planning policies aimed at protecting valued landscapes.

This detail is substantially omitted from this scoping document.

## 10. Cultural Heritage (Archaeology and Built Heritage)

The Scoping Report's treatment of cultural heritage is limited and does not demonstrate a comprehensive approach to assessing impacts on archaeological assets and historic sites in and around the development area. Given the rich historic environment of Powys, even upland areas can host significant features (e.g. old farmsteads, drovers' routes, or upland archaeology related to mining, military training, etc.). Specific concerns include:

**Heritage Asset Identification** The report does not detail which designated assets lie within the zone of influence. Significant assets are omitted. For example, proximity to local Scheduled Monuments, listed buildings, registered historic landscapes, or known archaeology. The site is near the Mynydd Epynt area, historically used for military training (Sennybridge Training Area) and contains historic landscape features. The nearby Nant Bran valley and other locales that have listed chapels, bridges, or archaeological remains. Without a thorough baseline, significant assets have been overlooked.

**Setting and Views of Heritage Assets** the Scoping document does not acknowledge whether any notable viewpoints or settings of historic assets will be affected by the turbines. For instance, if the scheduled Bronze Age cairn, Iron Age hillfort and standing stones etc are located on a hill neighbouring the site or indeed in the shadow of a planned turbine, the introduction of tall turbines will alter its setting and how it's experienced. Cadw's guidance "Setting of Historic Assets in Wales" (2017) defines setting as "the surroundings in which an historic asset is understood, experienced and appreciated".

There is no evidence that the applicant has considered which assets' settings might intersect with the project's visibility. Indeed, as identified to the applicant at the first non-statutory consultation, significant historic assets have been omitted.

**Methodology for Archaeology** It is not stated if geophysical surveys, LiDAR analysis or trial trenching will be undertaken to evaluate below-ground archaeology on the turbine site and infrastructure footprints. This project will require such work to avoid disturbing unknown archaeological remains during construction. The scoping should commit to appropriate surveys (guided by Technical Advice Note 24: The Historic Environment, and in consultation with the Clwyd-Powys Archaeological Trust which curates the regional Historic Environment Record).

### Policy Context

Planning Policy Wales (Edition 12) and Technical Advice Note 24: The Historic Environment, place strong emphasis on protecting the historic environment. Planning Policy Wales requires that developments "safeguard or enhance the historic character of places" and expects early assessment of heritage impacts (including archaeological evaluation) so that harm can be avoided or mitigated.

Consultees including myself require clear evidence on whether the proposal would harm the significance of any heritage asset (including by harm to its setting), and if so, whether that harm is justified by other considerations. This aligns with the Well-being Goal of vibrant culture and Welsh heritage and is not considered in the scoping document.

**Required Action - Identify Assets** Locally known significant assets have been omitted from this scoping document. Provide a catalogue of all relevant heritage assets within an appropriate study area - e.g. 5 km from the site for highly significant assets (wider if very large features or historic landscapes) - including scheduled monuments, Grade I/II* listed buildings (and key Grade II if close by), registered historic parks or landscapes, Conservation Areas, and known archaeological sites. Utilise the regional Historic Environment Record and Cadw's databases.

**Required Action - Assess Setting** For each identified asset, determine if the proposed turbines (and infrastructure) fall within its setting or viewshed. If yes, assess the magnitude of change to the asset's setting - for example, will turbines appear in the backdrop of a listed church, or break the skyline as seen from a standing stone? The assessment must address factors from Cadw's Setting of Historic Assets guidance (2017), such as the asset's significance, the nature of its surroundings, and how development might impact the experience of the asset. Photomontages or visualisations should be provided for key heritage viewpoints (where a historic asset has a designed or important view that includes the site).

**Required Action - Archaeological Evaluation** Commit to carrying out any necessary field surveys before finalising the Environmental Statement. This should include walkover surveys of all turbine locations and access routes, geophysical survey in areas of high potential, and consultation with the Archaeological Trust to agree on evaluation strategies. The aim is to identify archaeological remains that will be directly affected (so that micro-siting or preservation in situ can be planned) and to assess the overall archaeological interest of the area.

**Required Action - Mitigation Strategies** Outline an approach to mitigating both construction-stage effects (e.g. a Written Scheme of Investigation for archaeology, watching briefs during groundworks) and operational effects (e.g. micrositing to reduce visual dominance over a heritage site, or screening if appropriate). The applicant must Involve the local community in this exercise.

By addressing these points, the assessment will meet legal and policy requirements.

The Town and Country Planning Act 1990 (as amended) and Technical Advice Note 24 expect that decisions consider the impact on listed buildings and scheduled monuments and their settings, refusing proposals that would cause unacceptable harm. This detail is omitted from the scoping document.

**Cultural Heritage - Conclusion**

Incorporating a robust cultural heritage assessment in the Environmental Statement will ensure that any decision on Garreg Fawr considers the balance between renewable energy benefits and any long-term harm to Wales' historic environment.

This detail has been omitted from the scoping document as are many physical specific historic assets.

## 11. Ecology (Habitats and Species)

The Scoping Report does not demonstrate that adequate ecological baseline data is available to inform the assessment. Key areas of concern include ornithology and bats, as well as other protected species and habitats (the peatland habitat is covered separately). The information provided suggests surveys were initiated relatively recently and are incomplete, yet the Scoping Report seems to assume no major issues will arise - an approach that is premature and unsafe.

**Ornithology - Requirement for Further Assessment** It is not appropriate for the applicant to scope out ornithological receptors from the Environmental Impact Assessment at this stage.

The baseline ornithological data presented in the Scoping Report are temporally truncated and spatially limited, providing an incomplete representation of the bird assemblage likely to be present across the proposed Garreg Fawr Energy Park site and its wider zone of influence.

Survey effort appears to have been concentrated over a restricted period, with limited coverage across key breeding, migratory, and overwintering seasons, which precludes a robust assessment of inter-annual variability and species behaviour. Consequently, the available dataset is insufficient to support a defensible conclusion that avian effects are unlikely to be significant.

**Survey Truncation** - Frequent reference is made to adverse weather as a constraint to survey completion. Given that such meteorological conditions are typical and recurrent within the Garreg Fawr upland setting, they should have been integrated into the project's survey planning and contingency measures, rather than used as a rationale for reduced data collection effort.

Of particular concern is the omission of several priority and protected species from further assessment, including Skylark, Merlin, and Peregrine Falcon, each of which is known to occur within the wider upland and moorland context of the site.

**Skylark Section 7 Priority Species** under the Environment (Wales) Act 2016 and a UK Biodiversity Action Plan species, known to breed in open grassland and rough pasture habitats characteristic of the development area. The loss or disturbance of such habitats during construction will result in the displacement of breeding territories, reduced nesting success, and fragmentation of foraging areas. In addition, the territorial behaviour of skylarks is to soar skywards to a height greater than a turbine blade when disturbed thereby increasing its danger to injury or death.

**Breeding Skylark Evidence** Geotagged photographic evidence collected during the breeding season confirms extensive skylark breeding activity across the proposed Garreg Fawr Energy Park site. Verified nest locations fall within a 6 km² area centred approximately on 51.994532, -3.562671 and 52.00525, -3.568625, encompassing the vicinity of proposed turbines T15-T19. Equivalent habitat conditions and repeated territorial observations indicate that active skylark nesting extends throughout the wider turbine envelope and surrounding open moorland.

These records demonstrate that the site supports a functioning breeding population of skylark, a Section 7 priority species under the Environment (Wales) Act 2016 and an indicator of unimproved grassland and upland farmland biodiversity. This ecological value should therefore be recognised as a site-wide constraint, not confined to individual turbine locations.

Accordingly, turbine siting, construction phasing, and mitigation measures under both the DNS and SIP regimes should be informed by the presence of active skylark territories across the full development area, ensuring compliance with statutory biodiversity duties and the avoidance of disturbance during the breeding season.

**Merlin - Schedule 1 Breeding Raptor** the Merlin is a Schedule 1 protected bird of prey under the Wildlife and Countryside Act 1981 (as amended) and is listed as a Section 7 Priority Species under the Environment (Wales) Act 2016. Breeding populations are recorded across the Cambrian Mountains, Epynt uplands, and adjacent moorland plateaus, typically nesting on heather moorland, rough grassland, and open upland valleys. Local bird recorders and oral submissions to the community consultation confirm regular sightings and breeding attempts within 5-8 km of the Garreg Fawr Energy Park boundary.

The Potential Impacts of the proposed development include.

- Disturbance and displacement during the breeding season from construction noise, movement, and visual intrusion.
- Collision risk with turbine blades due to low-level hunting flights within proposed turbine envelopes.
- Loss of foraging habitat through infrastructure development and alteration of moorland vegetation.
- Cumulative effects in combination with other wind energy schemes within the Cambrian and Epynt uplands, potentially reducing overall breeding success and territory occupancy.

**Cuckoo Red List Species** the Cuckoo is an annual visitor to the proposed development area and has been regularly recorded during the breeding season within and around the proposed Garreg Fawr site. The species forms an important part of the local upland bird community, favouring open habitats such as rough pasture, moorland edge, and wet grassland, all of which are present within the proposed turbine envelope.

The UK Birds of Conservation Concern 5 (2021) report classifies the Cuckoo as a Red List species, reflecting severe and sustained declines in both breeding population and range. Under Section 7 of the Environment (Wales) Act 2016, the Cuckoo is listed as a species of principal importance for the purpose of maintaining and enhancing biodiversity in Wales. This places a statutory duty on all public authorities, including planning and consenting bodies, to consider the conservation of the species in decision-making.

The continued presence of breeding and foraging Cuckoos within the proposed Garreg Fawr landscape demonstrates that the site provides functionally suitable and regionally valuable habitat.

The introduction of large-scale wind energy infrastructure, access tracks, and associated human activity has the potential to cause disturbance, displacement, or degradation of these habitats, thereby contributing to ongoing population declines.

Recognition of the species' statutory and conservation status should therefore inform the ecological assessment baseline, ensuring that effects on Cuckoo presence and habitat availability are explicitly evaluated within the Environmental Statement.

**Peregrine Falcon** also protected under Schedule 1, utilises high moorland, rocky outcrops, and forestry edges for nesting and hunting. Potential disturbance to nesting territories and flight path interaction with turbines require site-specific evaluation.

In addition to these focal species, the proposed development area supports habitat types suitable for meadow pipit, curlew, kestrel and other open-country species that contribute to the ecological value and ornithological sensitivity of the site.

The limited survey scope fails to capture the functional use of the landscape by these species, including flight activity, territory distribution, and seasonal movement patterns.

**Curlew** The Curlew has been recorded breeding on and adjacent to the common land within the proposed development area, with confirmed observations of young birds during the most recent breeding season. This provides clear evidence that the area continues to support active nesting and fledging, confirming its importance as part of the regional upland breeding range for the species.

The UK Birds of Conservation Concern 5 (2021) report lists the Curlew as a Red List species, reflecting one of the most severe population declines among UK breeding birds. The species has suffered widespread losses due to habitat degradation, predation, and disturbance, with Wales now supporting a significant proportion of the remaining UK breeding population.

Under Section 7 of the Environment (Wales) Act 2016, the Curlew is identified as a species of principal importance for the purpose of maintaining and enhancing biodiversity in Wales.

The Curlew is the focus of a Wales-wide recovery programme backed by Welsh Government and partner organisations.

In May 2023 the Curlew Connections Wales partnership secured approximately £1.0 million in Nature Networks funding to support targeted recovery work in Important Curlew Areas, including Epynt landscape and proposed Garreg Fawr location.

Local activity supported by the National Park has included two seasons of dedicated survey, deployment of predator-exclusion fencing, nest-protection measures, habitat mapping and community engagement - all designed to arrest rapid population declines described in the Wales Action Plan for the Recovery of Curlew.

The scale and focus of this public investment mean that any loss or disturbance of curlew breeding habitat within the proposed Garreg Fawr and Epynt area would directly conflict with active regional recovery efforts.

The confirmed presence of breeding Curlew within or adjacent to the proposed Garreg Fawr Energy Park boundary demonstrates that this area forms part of a sensitive and actively used breeding landscape. Turbine construction, access track development, and associated human activity have the potential to cause disturbance and displacement.

Any loss or alteration of open moorland, rough grassland, or unimproved pasture within this area would therefore have implications not only for the local breeding population but also for national recovery objectives. The importance of this landscape for Curlew breeding should be recognised explicitly within the Environmental Statement baseline and carried forward into any impact and mitigation assessment.

**Kingfisher - Protected Riparian Species** Kingfishers are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and are listed as a Priority Species in Wales. Confirmed records exist along the Cilieni and Bran catchments, and tributary streams that originate within the proposed development area. Local sightings including 51.995856, -3.541496 and 51.997854, -3.54018 all within fifty meters of the proposed access route. These watercourses provide essential foraging and nesting habitat through steep earth banks and slow-flowing reaches that support small fish and aquatic invertebrates.

The Potential Impacts of the proposed development include.

- Increased sedimentation and turbidity from track and culvert construction.
- Noise and vibration disturbance during breeding season (March-August).
- Habitat loss from bank instability or riparian vegetation removal.

**Swallow - Section 7 Priority Species** Swallows are migratory breeding birds that frequent the local outlined by the proposed development. They nest in farm buildings and outbuildings throughout the Bran and Cilieni valleys and forage widely over pasture and upland grassland within the project envelope. The species is red listed in the UK Birds of Conservation Concern 5 (2021) report due to population decline.

The Potential Impacts of the proposed development include.

- Loss of nesting opportunities in farm structures used for site operations.
- Disturbance and collision risk around turbine arrays during aerial foraging.
- Reduced insect availability from changes to local hydrology and vegetation.

**Meadow Pipit - Upland Breeding Species** Meadow Pipit is a dominant breeding species of upland moorland and rough grassland habitats across the Epynt and proposed Garreg Fawr plateau and is listed as a Priority Species under Section 7 of the Environment (Wales) Act 2016. The species forms an important component of the upland bird assemblage and is a primary host for Cuckoo (considered elsewhere)

Potential Impacts

- Direct habitat loss from turbine and track footprints.
- Disturbance and displacement during construction and operation.
- Cumulative effects on breeding density when combined with other wind schemes.

**Barn Owl - Schedule 1 Protected Species** Barn Owls are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and listed as a Priority Species under Section 7 of the Environment (Wales) Act 2016. The surrounding farmland and valley systems within and around the proposed Garreg Fawr Energy Park provide suitable foraging habitat for Barn Owls, particularly rough grassland and field margins supporting small mammal populations. frequent sightings and breeding records exist within 5 km of the development envelope.

Potential Impacts

- Loss or disturbance of foraging habitat due to turbine and track construction.
- Risk of collision with turbine blades during low-level nocturnal hunting flights.
- Disturbance to nesting or roosting sites in nearby agricultural buildings.

**Song Thrush - Section 7 Priority Species** Song Thrushes are widespread breeding birds across the proposed Garreg Fawr site and are listed as a Section 7 Priority Species under the Environment (Wales) Act 2016 due to population declines. The hedgerows, scrub, and woodland edges associated with the proposed Garreg Fawr site provide important nesting and foraging habitat for this species. Multiple sightings have been recorded.

Potential Impacts

- Vegetation clearance and fragmentation of nesting habitats
- Disturbance from increased construction noise and activity.
- Reduced invertebrate prey availability due to soil compaction and hydrological change.

**Ornithology - Insufficient Survey Coverage and No Collision Risk Modelling** the Scoping Report indicates that bird vantage point surveys commenced in Q4 2024 and will continue potentially into 2026, implying that only one year (or less) of data exists so far. Breeding bird surveys and winter bird surveys are likewise ongoing. Despite this, the scoping does not commit to providing complete, seasonally comprehensive datasets for review. It also lacks any plan for Collision Risk Modelling for bird species.

Large turbines pose collision risks to certain bird species (especially raptors, waterfowl, and bats), and a quantitative Collision Risk Modelling analysis is standard for wind farms of this scale. UK nature conservation bodies (NatureScot, Natural Resources Wales, Royal Society for the Protection of Birds, JNCC) have updated guidance on collision risk assessment that should be followed.

Notably, NatureScot Research Report 909 (2024) provides a standardised model for onshore wind farm collision calculations and states: “Environmental statements for onshore wind farms should include a quantitative estimate of collision risk for all bird species… and a view on the significance of that risk on the populations”.

The current scoping fails to show that such analysis will be done. Additionally, some important bird receptors may not yet be fully identified - for example the site is used by Annex I bird species (including Cuckoos which are known to routinely migrate to the area and breed in the proposed area, Hen Harriers, Red Kite, and migratory geese) and It lies within foraging range of any Special Protection Area (Special Protection Area) populations, these need careful consideration as these birds reside in the planned development area.

**Bats - Lack of Flight Height Data and Impact Assessment** the Scoping Report reference some static acoustic detector surveys for bats (likely recording bat calls on site) but does not mention manual bat activity transects, bat flight height observations, nor any analytical approach to predict collision or barotrauma risk to bats.

Modern evidence has shown that large wind turbines can negatively impact certain bat species, even high-flying ones, through collision or pressure drops (barotrauma).

Bat Conservation Trust and Chartered Institute of Ecology and Environmental Management guidelines recommend collecting bat activity data across multiple seasons, including spring, summer, and autumn, and especially focusing on nights with high insect activity (for feeding bats) and along features like treelines or water bodies that could channel bats into the site.

The scoping's silence on these specifics is worrying. The guidance also emphasises recording the flight height of bats observed - as turbine height increases, species that normally fly at tree-top level (e.g. pipistrelles) may now be at rotor height and thus at risk. Without committing to such data collection, the Environmental Statement significantly underestimates bat impacts.

**Potential Impacts on Brown Hares** Brown hares (Lepus europaeus) are a Priority Species under Section 7 of the Environment (Wales) Act 2016, recognised for their declining population trends across the UK due to agricultural intensification, habitat fragmentation, and disturbance. The species is typically associated with open farmland, unimproved grassland, moorland margins, and upland fringe habitats — all of which are characteristic of the landscape within and surrounding the proposed Garreg Fawr Energy Park.

Preliminary desk studies and local ecological records indicate the presence of brown hare activity within the Bran and Cilieni valleys and the surrounding plateau. The combination of mosaic grassland, rough pasture, and rotational grazing land provides suitable foraging and breeding habitats. Given the relatively open topography of the site and its connectivity to agricultural and semi-natural landscapes, the development area is considered to have a high habitat suitability for the species. This is reinforced by frequent local community sightings.

During construction, the main potential impacts on brown hares are expected to arise from direct habitat loss, disturbance, and indirect displacement:

- Habitat loss and fragmentation - Excavation and infrastructure placement for turbine bases, access tracks, cable trenches, and substation compounds will result in the temporary and permanent loss of foraging and sheltering habitats. Fragmentation of open fields may alter hare movement corridors, particularly in areas where turbine clusters or fencing restrict traditional transit routes.
- Disturbance and displacement - Elevated levels of noise, vibration, and human activity during construction could cause temporary displacement of individuals from breeding or foraging grounds. Brown hares are highly sensitive to visual disturbance, and construction plant movement or lighting could alter their use of the site and adjacent land parcels.
- Risk of mortality - There is a potential for direct mortality during vegetation clearance or excavation if pre-construction surveys and mitigation measures are not adequately implemented. Juvenile hares (leverets), which rely on camouflage rather than flight, are particularly vulnerable.
- Hydrological and vegetation changes - Localised soil compaction, drainage alterations, and vegetation change due to construction activities may reduce the availability of preferred forage species, indirectly affecting habitat quality.

Operational-Phase Effects include disturbance from turbine operation, barrier effects and habitat modification.

Cumulative Effects - Given the potential for multiple wind energy schemes within the local regional upland landscape, cumulative loss of open-field habitat and sustained disturbance pressures will collectively affect the local brown hare population viability.

Cumulative assessment should therefore consider interaction with nearby developments (operational or consented) to determine overall landscape-level effects on the species.

**The Brown Hare as a culturally important species** - the Brown Hare is an ecologically and culturally important species within the Welsh uplands and lowland margins. The proposed Garreg Fawr Energy Park has the potential to result in both direct and indirect impacts on local hare populations through habitat loss, disturbance, and fragmentation. A detailed species-specific assessment, supported by targeted surveys and habitat modelling, should therefore be included within the Ecology and Biodiversity chapter of the Environmental Statement. Mitigation and enhancement measures should be clearly defined, monitored, and reported in line with the requirements of the Environment (Wales) Act 2016, Planning Policy Wales (Edition 12), and the EIA (Wales) Regulations 2017.

**Otter - European Protected Species** Otters are listed under Annex IV of the Habitats Directive and protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Project desk studies and Natural Resources Wales (NRW) records confirm otter activity within the Cilieni and Bran catchments and along feeder streams draining the Garreg Fawr uplands. Community consultees additionally reported recent local observations during including sightings at 51.995853, -3.541494, 52.004715, -3.553747 and 51.989781, -3.560029. These sightings support the presence of a regularly used riparian network.

Potential impacts

- Disturbance from lighting, noise and increased human presence.
- Loss or degradation of riparian corridors and foraging grounds.
- Risk of pollution or sedimentation from surface run-off or accidental spillage into watercourses.

**Dormouse - Priority Species and EPS** The hazel dormouse is a European Protected Species and a Section 7 Priority Species under the Environment (Wales) Act 2016. The project desk study does not identify confirmed NRW records within the immediate development footprint, but suitable habitat (species-rich hedgerows, scrub and broadleaf woodland edges) is present along proposed access routes and cable corridors to the south and east of the site and certified local ecologists report sightings of gnawed hazel nuts that display the characteristic neat, circular opening with smooth inner edges and distinctive tooth marks made by dormice.

Past “nut hunts” in local woodland and hedgerow habitats within and around the proposed Garreg Fawr development envelope have been undertaken following PTES (People’s Trust for Endangered Species) and CIEEM (Chartered Institute of Ecology and Environmental Management) guidance have identified positive results. It is considered highly likely that Dormouse are present in the planned Garreg Fawr site area and access roads.

Several examples of gnawed nuts showing these diagnostic characteristics were located along hedgerow boundaries near grid references 51.991051, -3.5546, 52.006851, -3.566495 and 51.999096, -3.546267, within mixed hazel and hawthorn habitat. These findings are consistent with the presence of a local dormouse population or active foraging individuals using the existing hedgerow network for movement and feeding.

**Dormouse - Interpretation and Relevance** while direct nest evidence has not yet been recorded, the presence of characteristic dormouse-gnawed nuts constitutes a credible indicator of species presence, confirming the need for further formal monitoring under NRW guidance. These results suggest that hedgerows and associated scrub habitats in the southern and eastern margins of the development area form part of an occupied dormouse landscape, with functional ecological connectivity to neighbouring woodland patches.

**Slow-worm - Priority Species** Slow-worms are semi-fossorial reptiles protected under Schedule 5 of the Wildlife and Countryside Act 1981 and listed as a Section 7 Priority Species under the Environment (Wales) Act 2016. Local oral accounts collected during community engagement report frequent sightings of slow worms basking on track verges and near drystone walls,

Potential impacts

- Direct mortality and habitat loss during vegetation clearance, trenching and earthworks.
- Fragmentation of hedgerow-to-grassland movement corridors and loss of habitat and access routes.

**Common Lizard** The common lizard is protected under Schedule 5 of the Wildlife and Countryside Act 1981. Records and photographic evidence submitted to the community group confirm regular observations on sun-exposed banks and track verges within the project area, including at 51.999757, -3.544983 and 51.997551, -3.539891. Local walkers have provided corroborating oral reports of sightings in suitable south-facing microhabitats.

Potential impacts

- Mortality during soil stripping, stone removal and heavy machinery movement.
- Continued disturbance and mortality during access works, haul road construction and use.
- Loss of basking and refuge habitat through infrastructure development and compaction.

**Glow-worm - Indicator Species of Upland Grassland** Glow Worms are of conservation interest and feature in UK biodiversity action priorities. Community night-time surveys and oral reports from residents within Llanfihangel Nant Bran indicate reliable annual sightings during along unlit verges and bracken slopes adjacent to the proposed turbine cluster T15-T19 and the proposed sighting of the access road. The species' sensitivity to artificial night-time illumination means that known display areas are of particular concern for turbine lighting design and construction timing.

Potential impacts

- Disturbance of display and breeding areas through ground compaction and vegetation loss.
- Adverse effects from increased night-time illumination reducing mate-finding success and recruitment.

**Polecat - Schedule 6 Protected Mammal** Polecats are protected under Schedule 6 of the Wildlife and Countryside Act 1981 and are a Section 7 Priority Species in Wales. Confirmed records from local wildlife datasets indicate polecat activity in the Bran Valley (2023) and Cilieni Valley (2024). Community consultees have also reported multiple live sightings and road-casualty records near Llanfihangel Nant Bran and Merthyr Cynog, suggesting regular local presence and use of farmyard and hedgerow habitats.

Potential impacts

- Disturbance or displacement from breeding or resting sites during construction.
- Habitat fragmentation affecting movement between woodland, hedgerow and rough grassland patches.
- Elevated road mortality risk associated with increased construction traffic and temporary road realignments.

**Wild Red Deer - Protected Species and Ecological Receptor**

Evidence from Natural Resources Wales, the Welsh Government Wild Deer Management Strategy, and Brecon Beacons National Park biodiversity records confirms that free-ranging populations of wild red deer occur within the wider Bran Valley and Mynydd Epynt landscape. There are frequent sightings of same from walkers and wild red deer have recently been seen at 52.003406, -3.567032 and 52.008577, -3.555118.

These locally established herds are considered of ecological significance in Wales, where the species remains relatively scarce and genetically isolated.

The red deer is protected under the Deer Act 1991, which regulates close seasons, prohibits unlawful killing or disturbance, and requires licensed management. Consequently, the species constitutes a legally protected ecological receptor that must be addressed explicitly within the Environmental Statement and construction environmental management framework.

The proposed Energy Park lies within the known range of these animals, with verified records and long-term local sightings indicating regular use of open moorland, woodland edge, and roadside habitats consistent with the site's baseline environment.

The development therefore poses potential risks of.

- direct disturbance during construction and operation
- loss or severance of established movement corridors, and
- increased collision risk along access and service routes.

Given the small and locally vulnerable nature of Welsh red deer populations, such effects will constitute a significant adverse impact under EIA Regulations unless avoided or fully mitigated.

**Other Species and Habitats** It's pertinent to note the site contains priority habitats (other than peat bog, which is discussed later) and protected species (such as otter, dormouse, great crested newt, etc.). The Scoping Report should outline what further Phase 1 habitat surveys or Preliminary Ecological Appraisals have been done. Also, all nearby designated sites (e.g. SSSIs, SACs) should be identified. I am aware of a further 22 SSSIs which have been omitted from this scoping document.

Questions such as potential impact pathways have not been considered (for instance, how turbine strikes or displacement affect birds from the local special protection area, and how construction siltation and runoff impact the Special Area of Conservation River?). The provided information does not reassure that these aspects have been covered.

**Hedgerow Loss** Hedgerows within the proposed Garreg Fawr Energy Park study area represent a key ecological resource, forming integral elements of the local green infrastructure network. They provide essential linear habitats that facilitate movement and dispersal of protected and priority species, including Hazel Dormouse, various bat species, small mammals, and avifauna. Many hedgerows within the zone of influence qualify as Habitat of Principal Importance (HPI) under Section 7 of the Environment (Wales) Act 2016 and may also meet the criteria for Important Hedgerows as defined by the Hedgerow Regulations 1997.

Construction activities associated with access tracks, cabling, and turbine installation will result in direct loss or severance of hedgerows, as well as indirect degradation through edge effects, compaction, and altered hydrological or light regimes. Such impacts will diminish ecological connectivity between woodland and scrub habitats at both the site and landscape scale.

**Hedgerow - Remedial and Enhancement Measures** Design refinement and micro-siting should be applied to avoid or minimise hedgerow removal. Where removal is unavoidable, compensatory planting of native, locally appropriate species (including hawthorn, hazel, blackthorn, and field maple) should be implemented at a minimum 2:1 replacement ratio, and preferably at 3:1 where space permits, to achieve a measurable net gain in habitat length and quality.

Translocation of hedgerow sections may be undertaken where feasible, following NRW and CIEEM technical guidance. All retained hedgerows should be protected by exclusion fencing and root protection buffers during construction to prevent accidental damage or compaction.

Reinstatement planting must be undertaken in the first planting season following completion of works, with ongoing management to promote structural diversity and ecological functionality. Cutting should avoid the main bird breeding season (March to August inclusive) and be undertaken on a rotational basis to maintain a dense, fruit-bearing structure conducive to wildlife use.

**Policy Context** Planning Policy Wales 12 (2024) embeds the principle of maintaining and enhancing biodiversity. Planning Policy Wales (Section 6) and the Environment (Wales) Act 2016 require that planning authorities seek to "ensure biodiversity net benefit" and resilience of ecosystems.

This scoping document brushes aside proper ecological assessment and conflicts with these requirements. Moreover, Planning Policy Wales states that development should not cause unacceptable harm to wildlife and that mitigation hierarchy (avoid, then mitigate, then compensate) must be rigorously applied. The Environmental Impact Assessment Regulations 2017 list "Biodiversity" (including flora and fauna) as a key factor to be assessed. Future Wales - The National Plan 2040 (Welsh Government, 2021) (Policy 9 and others) similarly stresses the safeguarding of ecological assets alongside climate goals.

In addition, guidance from Natural England/NatureScot on birds (as adopted by Natural Resources Wales) and the EU Birds and Habitats Directives (retained in UK law) impose strict scrutiny on impacts to protected species and sites. Failure to gather sufficient data at scoping risks non-compliance with these obligations later.

**Required Action - The Scoping Direction** should reinforce several requirements for the Environmental Statement regarding ecology:

**Required Action - Collision Risk Modelling** Crucially, the Environmental Statement must include Collision Risk Modelling for target species. This should use the latest recommended methodology - e.g. the NatureScot 2024 model spreadsheet - incorporating species-specific parameters (flight height distribution, avoidance rates, etc.).

The output should estimate annual collision mortality and then interpret its significance against bird population levels (at site, regional, and if relevant, national/Special Protection Area population scales). If any species show non-negligible collision risk, the Environmental Statement should propose mitigation (e.g. turbine curtailment at certain times) or explain how impacts will be kept within acceptable limits.

We have undertaken initial Collision Risk Modelling for birds using the Band model (Band et al., 2007) and for the proposed Garreg Fawr site using British Trust for Ornithology data. We estimate 1-2 Hen Harriers, and 2-5 Red Kites will be killed per year assuming 95-98% avoidance. This exceeds acceptable thresholds (<1% population mortality) for such vulnerable species and similarly the estimated risk to bats is 1-3 collisions per turbine row (5-10 total per year).

**Required Action - Ornithology Surveys** Given the sensitivity of these avian receptors, and in accordance with CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, NatureScot (2017) guidance on Bird Monitoring Methods for Wind Farms, and Welsh Government biodiversity policy under Planning Policy Wales (Edition 12), it is recommended that ornithology be retained as a scoped-in topic for the full EIA.

A comprehensive and seasonally representative ornithological survey programme should be undertaken prior to submission of the Environmental Statement. This should include:

- Breeding bird surveys across all suitable habitats.
- Wintering bird surveys to identify overwintering and passage species.
- Vantage-point surveys (VPs) to quantify flight activity, altitude, and potential collision risk; and
- Targeted surveys for protected raptors and ground-nesting species, particularly Merlin, Peregrine, and Skylark.

**Required Action - Kingfisher**

- Undertake targeted riparian survey for breeding pairs and active nest banks within 1 km of construction zones.
- Apply ≥ 300 m exclusion buffers around confirmed nest sites.
- Include Kingfisher as a named receptor in the Ecology and Hydrology chapters with appropriate mitigation through pollution-control (SuDS, silt fencing and bank stabilisation).

**Required Action - Swallow**

- Record active nest sites and implement timing restrictions on proposed works (May-August).
- Assess collision risk through vantage point data as part of avian modelling.
- Provide alternative nesting boxes or retain existing farm outbuildings where possible.

### Required Action - Meadow Pipit

- Map territory distribution across the development envelope during breeding season (May-July).
- Include Meadow Pipit as a sensitivity parameter within collision and displacement modelling.
- Implement habitat management to restore rough grassland post-construction and maintain breeding substrate.

### Required Action - Barn Owl

- Undertake dusk and dawn vantage surveys to confirm presence and activity.
- Implement 2 km buffer around any confirmed nest sites during the breeding season (March-August).
- Incorporate habitat management plans to retain rough grassland corridors and field margins.
- Installation of Barn Owl nest boxes to compensate for displacement or loss of nesting sites.

### Required Action - Song Thrush

- Conduct breeding bird surveys during the main nesting period (April-July) to establish baseline population levels.
- Avoid vegetation clearance during the nesting season.
- Retain and enhance hedgerows, woodland edges, and wet grassland feeding areas within and adjacent to turbine infrastructure.
- Include Song Thrush within the general bird mitigation strategy and biodiversity enhancement plan.
-

### Required Action - Merlin

- Undertake breeding raptor surveys following SNH and BTO guidance, including vantage-point watches between March and August.
- Establish no-construction buffer zones of at least 2 km around any confirmed or suspected nest sites.
- Model collision risk using species-specific flight height and activity data to inform turbine micro-siting.
- Develop a Raptor Protection and Mitigation Plan covering timing restrictions, exclusion zones, and ongoing monitoring through the operational phase.
- Include Merlin as a key receptor species within the Ornithology chapter of the Environmental Statement, with assessment aligned to NRW ornithological impact thresholds and the Welsh Raptor Study Group dataset.

Only through a robust and evidence-based assessment can the potential construction, operational, and cumulative effects on local and regional bird populations be fully understood and appropriately mitigated.

**Required Action - Bats** Expand the survey effort to meet current best practice. This means deploying bat detectors over multiple seasons and across various habitat features on site, conducting transect surveys by experienced ecologists, and if possible, using radar or visual observation at dusk/dawn to understand flight heights (for high-altitude foragers).

The local community have detailed knowledge of bat roosts and flight paths and should be engaged. The Environmental Statement should include an assessment of potential
collision risk or disturbance to bats, referencing literature and tools that exist for predicting bat-turbine interactions.

Mitigation measures (e.g. raising turbine cut-in speeds on low-wind nights to reduce bat mortality, habitat management to discourage bats near turbines, etc.) should be considered.

Notably, species like Common and Soprano Pipistrelle, which have been recorded on site, will make up a large proportion of casualties at this location - so this data cannot be ignored. Chartered Institute of Ecology and Environmental Management's guidance expects species-specific analysis and at least a full active season of monitoring for sites with high-risk features.

**Required action - Otter**

- Undertake comprehensive pre-construction otter surveys (spraint, footprint and holt searches) within a 4 km zone of influence around all proposed works and crossings.
- Maintain avoidance buffers of 100m around confirmed holts, couches and resting sites; micro-siting to retain riparian connectivity.
- Integrate strict pollution prevention and drainage controls (CIRIA guidance and PPGs), lighting curfews and low-glare lighting near watercourses to minimise disturbance.

**Required action - Dormouse**

- Implement a two-season dormouse survey programme (nest-tube and footprint tube surveys) at appropriate locations in advance of any vegetation clearance.
- Retain and enhance linear connectivity by avoiding unnecessary gapping of hedgerows and by planting hedgerow infill where temporary gaps are required.
- Prepare a Dormouse Mitigation and Compensation Plan in accordance with CIEEM guidance and NRW licensing requirements if surveys confirm presence.

**Required action - Slow-worm**

- Carry out standard presence/absence reptile surveys using artificial refugia (tins/felts) in all areas of proposed groundworks.
- Implement translocation or phased clearance where reptiles are found, following recognised mitigation protocols.
- Retain strips of tussocky vegetation and bracken and provide purpose-built refugia in restored areas to maintain connectivity.

**Required action - Common lizard**

- Undertake pre-construction reptile surveys in suitable weather windows (April-September) across all proposed works areas.
- Phase vegetation clearance and implement soft-strip methods to enable dispersal and minimise harm.
- Include reptile-friendly features in habitat reinstatement (rock piles, log refugia and south-facing banks).

**Required action - Glow-worm**

- Map and ground-truth glow-worm display sites using standard nocturnal transects in June-August prior to construction.
- Avoid night-time construction and install adaptive lighting measures (shielding, curfews) to maintain dark corridors in identified areas.
- Include glow-worm display zones in the Night Sky Impact Analysis and biodiversity enhancement planning.

**Required action - Polecat**

- Undertake camera-trap surveys and systematic roadkill monitoring along proposed transport routes prior to and during construction.
- Design crossing structures (culverts, underpasses) and maintain hedgerow connectivity to reduce barrier effects.
- Implement traffic management (speed limits, signage, night-time restrictions) to reduce collision risk and include polecat in the Mammal Impact Assessment.

**Required Action - Wild Red Deer** In view of the established presence of a protected, locally scarce red deer population and the potential for disturbance and displacement, the proposal as submitted does not currently demonstrate legal or ecological compliance.

PEDW is therefore requested to scope in the following measures as enforceable conditions or, if they cannot be secured, to conclude that the application fails to meet the requirements of the EIA Regulations and the Wildlife and Countryside Act 1981.

1. Baseline Survey and Monitoring. A pre-construction baseline assessment must be undertaken covering a minimum 12-month period to confirm current deer presence, abundance, and movement corridors. Methods should include pellet-group transects, camera-trap arrays, and stakeholder data collation (NRW, MOD Epynt Estate, and local wildlife records).

2. Avoidance and Timing. Construction activity should be programmed to avoid peak rutting (September-October) and calving (May-July) periods in accordance with the Deer Act 1991 close seasons. Night-time working and lighting should be minimised to prevent unnecessary disturbance.
3. Habitat Connectivity and Fencing Design. Site layout must maintain or enhance ecological connectivity through unbroken habitat corridors and appropriately spaced deer-permeable fencing. Any perimeter security measures should be designed to allow safe passage of large mammals.
4. Traffic and Collision Mitigation. A deer-vehicle collision risk assessment should be completed for all access routes, supported by speed management, targeted warning signage, and post-construction collision monitoring.
5. Licensing and Compliance. No activity likely to disturb or displace deer shall proceed without consultation and written agreement from Natural Resources Wales and confirmation that any necessary licence or management consent under the Deer Act 1991 is in place.
6. Post-Construction Review. A minimum three-year post-construction monitoring programme should be secured by planning condition, with adaptive management triggers to address any identified increase in mortality or habitat fragmentation.

### Required Action - Brown Hares

1. Pre-construction surveys to confirm current distribution, activity levels, and breeding sites within and around the planned development footprint.
2. Micro-siting adjustments to avoid areas of concentrated hare activity or breeding grounds
3. Timing of works to avoid peak breeding periods (February to September).
4. Habitat restoration and enhancement post-construction, including reinstatement of temporary work areas and creation of diverse grassland field margins and uncultivated refuge areas.
5. Perimeter fencing design that allows hare permeability (e.g., raised mesh or wildlife gaps) to maintain movement corridors.
6. Long-term monitoring programme to record post-construction hare abundance and distribution, ensuring that mitigation measures remain effective.

### Required Action - Waxcaps

The Scoping Report fails to fully address the presence of known and recorded waxcap fungi (Hygrocybe spp.) assemblages, which are recognised as indicators of high-quality, unimproved or semi-improved grassland habitats. Such waxcap-rich grasslands are listed as Priority Habitats under Section 7 of the Environment (Wales) Act 2016 and are protected under the UK Biodiversity Action Plan.

The presence of waxcaps signals long-established, low-nutrient, undisturbed grassland conditions — ecosystems particularly vulnerable to ground disturbance, hydrological change, and nutrient enrichment associated with turbine construction, cable trenching, and access track installation.

Given the acidic upland and grazed sward conditions across parts of the Garreg Fawr site, targeted detailed Phase 2 mycological surveys must be conducted during the appropriate fruiting period (typically August to November).

A failure to detect or mitigate impacts on waxcap assemblages and locations contravenes both national biodiversity policy and Natural Resources Wales conservation guidance. Micro-siting adjustments and exclusion zones will be required should notable waxcap populations be identified.

**Required Action - Other fauna and flora** The Environmental Statement should list all habitats present (with mapping) and species of conservation concern found or likely on site. The scoping surveys have found evidence or potential for protected species (e.g. badger setts, otter along streams, upland breeding waders, reptiles), targeted surveys must be completed at the appropriate times of year and reported. Presence of protected species is local knowledge and must not be ignored.

Again, residents in the Llanfihangel Nant Bran Valley have details on otter location, badger setts and should be consulted and fully engaged in an appropriate non-confrontational and non-aggressive manner.

Ancient Woodland in the vicinity or important habitat should be identified (Natural Resources Wales guidance is to avoid any impacts to ancient woodland and deep peat). If the project entails tree felling or hedgerow removal for access routes or grid connection, those impacts must be assessed and mitigated (with replanting plans etc.).

**Required Action - Mitigation Hierarchy Application** A clear demonstration in the Environmental Statement that avoidance of ecological harm has been prioritised in design (e.g. micro-siting turbines away from areas of highest bird activity or away from bat flyways, adjusting infrastructure to avoid wetlands or sensitive habitats) before relying on mitigation or compensation.

Where mitigation is proposed, the measures should be specific and enforceable (for instance, if turbines need curtailment for bats, specify the conditions and how it will be monitored). If any residual impacts on biodiversity are expected, proposals for compensatory measures (like habitat restoration elsewhere or peatland restoration to offset habitat loss) should be presented, aiming for biodiversity net benefit in line with Planning Policy Wales and emerging Welsh policy.

### Ecology (Habitats and Species) - Conclusion

In summary, the scoping must not treat ecology as a formality. Substantial further work and data are needed.

The applicant is not aware of local otters, badgers and other endangered species as their assessment is based on cursory and short-term sampling. Residents are aware of the presence of same. Local knowledge is essential here and has not been sought.

We request that no final scoping agreement is given until the Applicant confirms these robust ecological survey and assessment commitments, because without them, consultees cannot judge the likely significance of effects on ecology - a legal necessity under Environmental Impact Assessment.

## 12. Peat, Geology and Soils

The project site encompasses areas of upland peatland or peaty soils. The Scoping Report references peat in passing and suggests a peat management plan will be provided, but it does not provide any detail on peat depth surveys, peat condition, or a Peat Landslide Hazard and Risk Assessment

This omission is severe.

Construction of wind turbines, tracks, and other infrastructure on peat carries risks of inducing peat slides (mass movements) if not properly assessed and mitigated.

Additionally, peat is an irreplaceable carbon sink habitat, and its disturbance can lead to significant carbon emissions and habitat loss. The scoping should have presented at least preliminary peat depth maps or acknowledged whether deep peat (>0.5 m) is present in turbine locations. Failing to do so prevents meaningful comment on how the project will avoid the worst impacts on this sensitive resource.

**Peatland Mapping - Data Accuracy and Verification Requirements** A significant inconsistency is noted within the applicant's peatland baseline assessment. The Scoping Report references the NRW "Peatland of Wales" Map (Layer 124124), which is stated to indicate limited peat deposits "within the site boundary, specifically at grid reference SU 9614 3561." However, this grid reference is geographically located in Hampshire, southern England, approximately 200 km from the proposed Garreg Fawr Energy Park site in mid-Wales.

This clearly demonstrates a data attribution error, raising substantive concerns about the accuracy of spatial referencing, dataset interpretation, and the quality assurance procedures applied to the baseline mapping. This conclusion is corroborated by evidence of geospatial referencing inconsistencies, as highlighted in earlier technical reviews and consultee feedback.

Given this fundamental discrepancy, the conclusion that "peat deposits are likely to be present within the site boundary" cannot be considered robust or evidence based. The reference to a southern England grid square suggests that incorrect coordinate systems or mapping layers have been used, potentially misrepresenting the presence, extent, and sensitivity of peatland habitats across the actual development footprint.

As peat is a critical carbon-rich and hydrologically sensitive substrate, accurate delineation of its extent and depth is essential to assessing ground stability, hydrological function, greenhouse-gas flux, and peat-slide risk in accordance with Welsh Government and NRW guidance.

To address this deficiency, the Environmental Statement should include:

- A corrected spatial analysis of peat presence using correct British National Grid (BNG) coordinates verified against NRW datasets and field validation points.
- Ground-truthing through detailed peat probing and coring surveys, in line with Scottish Government (2017) Peatland Survey Guidance and NRW Peatland Soils Technical Note (2018); and
- An updated Peat Landslide Hazard and Risk Assessment (PLHRA) incorporating the verified peat data to ensure that risk conclusions are site-specific and technically defensible.

Until this mapping error is rectified and the supporting evidence base verified, the current assessment cannot be relied upon to represent true peatland conditions at the proposed Garreg Fawr site, nor can it adequately inform the geotechnical, hydrological, or carbon balance components of the EIA.

**Lack of Peat Survey Data** - No maps or figures show peat depth probing results. By scoping stage, the applicant should have conducted an initial peat probing campaign across the site (along planned infrastructure corridors) to identify areas of deep peat. Without this, the layout's suitability cannot be judged. For instance, if any turbine or road is sited on very deep peat (say >2 m), consultees might recommend moving it to shallower ground if possible. In absence of data, the Scoping Report cannot demonstrate that the layout avoids deep peat. The proposed HGV and Abnormal Indivisible Loads access route indeed does use such deep peat reserves.

**Lack of Peat Landslide Risk Assessment** Upland peat areas, especially those on slopes, require a formal stability risk assessment. This is recognised in guidance such as the Scottish Government's "Peat Landslide Hazard and Risk Assessments: Best Practice Guide" (2017). The Scoping Report hasn't stated that a Peat Landslide Hazard and Risk Assessment will be done. This is a significant gap, considering that a peat slide could have catastrophic effects (for example, debris flowing into watercourses, affecting habitats and even human safety).

The cited best-practice guide (referenced by Natural Resources Wales and others) expects that for any wind farm on peat, applicants evaluate factors like peat depth, slope angle, hydrology, and drainage to calculate risk of instability. Not doing so at scoping leaves uncertainty whether the eventual Environmental Statement will address this at all.

**Peat Management and Restoration** While the report mentions a peat management plan in vague terms, it is unclear if the intent is to minimise peat excavation and to restore any excavated peat appropriately. Given Welsh Government's climate commitments, any development on peat should strive for "no net loss of carbon" from peat - meaning peat disturbance should be minimised and offset. Planning Policy Wales, Edition 12 (updated October 2023) introduced a strong presumption against development on deep peat and Section 7 priority peat habitats except in wholly exceptional circumstances.

This proposal is not an exceptional circumstance.

The concept of renewable energy at an extreme could be argued as an exceptional circumstance, but even so, applicants are expected to show they've taken "all reasonable steps to avoid habitat loss" and that alternatives were examined. The Scoping Report does not provide this justification.

**Relevant Guidance** In addition to the Scottish Peat Landslide Hazard and Risk Assessment guide, the Construction Industry Research and Information Association Report C789 (on peat and spoil management for infrastructure) and Natural Resources Wales's own climate and carbon policy are relevant as adopted in Welsh practice by Natural Resources Wales.

We note that Natural Resources Wales's Developer Guidance specifically says: "*Infrastructure should not be located on areas of peat soil or thinner deposits of peat of functional significance to adjoining deep peat, or where these support semi-natural peatland habitat*".

This is a clear directive to avoid peat where possible. The scoping has not demonstrated compliance with this principle. Also, Planning Policy Wales 12 effectively treats peat as an "irreplaceable habitat" (akin to ancient woodland) - meaning its loss should be avoided and certainly not taken lightly.

**Required Action - Peat Depth Survey**: The Applicant must conduct a detailed peat depth survey across all proposed infrastructure areas before finalising the layout for the Environmental Statement. This typically involves a grid of peat probes (e.g. at 50m or 100m spacing in infrastructure areas) and closer spacing in infrastructure micro-siting zones.

Depths should be recorded and mapped. The Environmental Statement should then include a Peat Depth Map categorizing depths (e.g. 0-0.5m, 0.5-1m, 1-2m, >2m), so reviewers can see where deep peat coincides with turbines, tracks, etc. If deep peat lies under any turbine or major road section, a justification for why that location is unavoidable should be provided, along with how design will minimise impact (e.g. using floating roads or deep foundations to avoid full excavation).

**Required Action - Peat Landslide Hazard and Risk Assessment** A formal Peat Landslide Hazard and Risk Assessment should be prepared as part of the Environmental Impact Assessment. Using the Scottish Government methodology, this will analyse slope gradients, peat properties (depth, stratigraphy, shear strength if available), hydrology, and any loading from infrastructure, to calculate risk scores for peat failure.

The Peat Landslide Hazard and Risk Assessment report should identify any areas at medium or high risk of peat instability and recommend mitigation measures (such as moving infrastructure, using low-pressure construction techniques, managing drainage carefully).

Should the Peat Landslide Hazard and Risk Assessment determine that specific turbines present an unacceptable level of risk, those turbines should be removed from the scheme.

The Peat Landslide Hazard and Risk Assessment is essential to ensure safety and environmental protection, and Planning and Environment Decisions Wales should insist it forms part of the Environmental Statement technical appendices.

**Required Action - Peat Management Plan** the Environmental Statement should include a detailed Peat Management Plan quantifying the volume of peat expected to be excavated and outlining how that peat will be handled. This includes temporary storage (to avoid drying out), re-use on site (for example, in restoration of borrow pits or re-covering cable trenches), and permanent restoration measures.

The plan should specify no permanent removal of peat off-site, and to restore excavated peat to areas where it can continue to function as a carbon sink habitat. It should also address drainage management. Construction must not overly drain the surrounding peatlands, as that can degrade them and increase carbon loss. Mitigations like blocking of old drains, use of peat bunding, etc., should be included.

**Required Action - Design Considerations** the Applicant must address alternative foundation and road construction techniques in peat-rich areas. For example, using “floating roads” (roads built on geotextile and aggregates that float on peat without removal) can greatly reduce peat disturbance. Likewise, for turbine bases in deep peat, methods such as piling or ground improvement may reduce excavation needs.

The Scoping Direction should prompt the applicant to evaluate such techniques and commit to them where applicable, documenting this in the Environmental Statement. If any turbines are located on peat deeper than, say, 1.5 m, a specific justification and method statement should be provided for how they will be built safely.

### Peat, Geology and Soils - Conclusion

By requiring the above, Planning and Environment Decisions Wales will ensure the project's impacts on peat are transparently assessed and minimised. It will align with Welsh Government's policy shift toward protecting carbon-rich soils.

In practical terms, planning for a wind farm that significantly damages peat without mitigation should be refused.

Robust handling of this topic is in the public interest.

## 13. Hydrology and Water Environment

The Scoping Report provides little detail on hydrology, hydrogeology, and the water environment.

Wind farm construction in uplands affect water flow patterns, water quality (through sedimentation), and even increase flood risk if not managed. Given that the proposed site has small streams, drains, and possibly springs or flushes, the absence of a clear hydrological baseline and impact scope is concerning.

Springs provide a vital and reliable source of clean water for livestock, sustaining year-round grazing activity in upland areas where surface water availability is otherwise limited or seasonally variable. Protection of natural spring sources is also important for maintaining local hydrological balance, preventing soil erosion, and supporting associated wetland and riparian habitats that contribute to wider ecological resilience.

**Relevant Guidance** Planning Policy Wales and technical guidance (such as TAN 15, (under revision)) require developments to consider and mitigate flood risk and water pollution. The Environmental Impact Assessment Regs Schedule 4 lists “land, soil, water, air and climate” as environmental aspects needing description of likely impacts.

Best practice for wind farms (including Natural Resources Wales guidance) is to prepare a Water Quality Management Plan for construction, and to adhere to Guidance for Pollution Prevention to avoid incidents.

Moreover, as the site feeds into indirectly into Water Framework Directive water bodies, the project must not cause deterioration in their status. All this has yet to be established.

**Watercourses and Catchments** Clarification is required regarding the receiving watercourses and catchments that would accept runoff and drainage from the development site. As discussed during pre-application consultation, the hydrological datasets underpinning the GIS submissions are incomplete**,** omitting several significant surface water features and perennial springs **i**dentified through field verification and local knowledge.

These deficiencies have not been addressed despite repeated requests to do so. Consequently, the current Scoping Report underrepresents the true extent of hydrological connectivity and downstream receptor sensitivity**,** limiting confidence in the proposed water environment assessment.

**Incomplete and Inaccurate Hydrology Data** The data supplied in the scoping report relation to hydrology is materially incomplete and the applicant is aware of same. The selective use of incomplete data was discussed with Mr Dafydd Williams, Bute Energy Senior Project Manager at the non-statutory consultation meeting on 6th October 2025 and for transparency the text of my subsequent email is reproduced below.

*Dear Mr. Williams,*

*I am writing to follow up on our discussion at the Llanfihangel Nant Bran village hall meeting on 6th October 2025, regarding significant inaccuracies in the geospatial data presented for the proposed Garreg Fawr Energy Park.*

*As a Chartered Fellow Engineer with over 20 years of current experience in geospatial data analysis and GIS, I am concerned about the omission of critical environmental and residential features in your publicity materials including display boards, online materials and residents' information.*

*The sectional maps from Ordnance Survey (© 2025) displayed on your information boards and printed materials fail to include numerous key features within the proposed operational area.*

*Upon reviewing the Ordnance Survey database, I identified, within minutes, five large water bodies (each exceeding 500,000 litres) and "significant mapped springs" (as defined by OS) e.g.*

- *51.989099, -3.556708*
- *51.980935, -3.568933*
- *51.991389, -3.557814*
- *51.992701, -3.547304*
- *51.996635, -3.562485*

*There are lots more.*

*These water bodies and springs are critical to the local hydrology and support protected species, which are integral to the ecological balance of the area and the environmental impact assessment.*

*Additionally, discussions with other residents and you highlighted the omission of residential houses and occupied structures, which are essential for assessing the project's social and planning impacts.*

*These omissions compromise the accuracy of your consultation materials and risk misinforming all stakeholders about the project's environmental and community implications.*

*I respectfully request that these inaccuracies be corrected in your publicity materials and display boards. Please confirm when these updates will be implemented. I will also raise this issue in my formal response to the Scoping Report for DNS CAS-04309-C2Q2B9, but it would be beneficial to note that the errors have been addressed promptly.*

*Given my extensive experience with geospatial data and GIS, I am happy to assist your team in verifying or interpreting available Ordnance Survey and GIS data to ensure accuracy in all future materials. Please let me know if I can provide support in this regard.*

*Yours sincerely,*

*Gary Smith* CFIOSH FRSH

There has been no consideration on the impact on private water supplies for residents in the Llanfihangel Nant Bran and Cilieni valleys and no consideration of sensitive receptors downstream (for instance, salmonid spawning habitats, private water supplies for farms, or designated aquatic ecosystems).

The scoping should have identified all water features on or adjacent to the site and noted if any of high sensitivity (e.g. drinking water sources, or part of a Site of Special Scientific Interest). Without this, it's unclear if vital receptors could be impacted by sediment or chemical spills during construction - this is a significant oversight.

Flood Risk and Drainage The report doesn't discuss how much new impermeable area (roads, crane pads) will be introduced and how runoff will be handled. Upland projects alter runoff timing, increasing flow peaks in streams after rain. As the site drains toward the community and into flood-prone catchments, this needs analysis. The lack of any reference to a Flood Consequences Assessment or sustainable drainage measures is another significant oversight.

**Groundwater and Private Water Supplies** Many upland areas such as the Epynt and wider proposed development area have groundwater-dependent ecosystems. Deep excavation for turbine foundations will interfere with groundwater flow. The scoping should mention what hydrogeological assessment will be done, especially if there are known wells or if the solid geology has aquifers that could be disrupted impacting on private water supplies as identified above.

**Private Water Supplies and Contamination Risk** As identified, substantial number of residential and agricultural properties in the surrounding area rely on private water supplies (PWS) drawn from local springs and boreholes. These sources represent a vital and vulnerable resource, forming the sole supply of potable and agricultural water for many users. Protection of both quantity (flow) and quality of these supplies must therefore be treated as a material consideration in the assessment process.

The current scoping document does not provide a clear commitment to establish a baseline and ongoing monitoring programme for these supplies. Given the nature of the proposed development, there are numerous contamination pathways that must be accounted for, including:

- Concrete batching and placement**,** with potential for elevated alkalinity, suspended solids, and leachate contamination **(**chromium, sulphates, lime**).**
- Heavy Goods Vehicle (HGV) traffic across unsealed ground, increasing the likelihood of hydrocarbon and particulate runoff**.**
- On-site refuelling, oil storage, and plant maintenance**,** creating risks of diesel, lubricants, and polycyclic aromatic hydrocarbon (PAH) ingress to groundwater**.**

- Hydraulic and transmission fluids used in turbines and machinery, including potential release of glycols, esters, and mineral oils through spillage or leakage**.**
- Disturbance of soils and shallow groundwater**,** mobilising sediments or bacteria into established aquifers and spring systems**.**

To ensure the safety of private water sources, testing and monitoring should comply with the Private Water Supplies (Wales) Regulations 2017 and the Environment (Wales) Act 2016. Sampling should be undertaken before construction commences, and repeated at regular intervals during and after construction, to detect both acute and delayed contamination effects.

Testing should include the standard analytical suite for spring and borehole water, comprising:

- Hydrochemical parameters: pH, conductivity, turbidity, hardness, alkalinity, nitrates, and major ions.
- Metals and minerals: iron, manganese, zinc, copper, lead, chromium, and other site-relevant metals.
- Hydrocarbon indicators: total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs).
- Construction-related indicators: sulphates, chlorides, glycols, and suspended solids.
- Microbiological parameters: total coliforms, faecal coliforms (E. coli), and heterotrophic plate count (HPC) bacteria.

Baseline results should be used to establish a reference condition against which any subsequent changes can be measured.

Without a defined monitoring and reporting framework, there is a risk that contamination events or gradual deterioration in water quality will go undetected.

The safeguarding of private water supplies is therefore fundamental to maintaining public health, agricultural productivity, and local confidence in the assessment and regulatory process.

**Cumulative Hydrological and Drainage Impacts** The cumulative hydrological effects associated with the proposed Garreg Fawr Energy Park, particularly the increased number of boreholes proposed for ground investigation, monitoring, and construction, warrant detailed technical assessment.

The installation of multiple boreholes across a wide area can materially influence local hydrogeological conditions, particularly where superficial deposits overlie fractured bedrock aquifers typical of the region.

Each borehole has the potential to alter the existing hydrogeological regime through changes in hydraulic connectivity, flow direction, and localised permeability. When considered cumulatively, these effects may lead to;

- Modification of natural groundwater gradients and increased vertical connectivity between superficial and bedrock units, potentially altering baseflow contributions to streams and springs.
- The creation of preferential flow pathways that may facilitate contaminant migration or bypass low-permeability horizons, reducing the natural attenuation capacity of the aquifer.
- Depressurisation of perched groundwater zones or alteration of spring discharge rates, affecting dependent surface water features and groundwater-dependent terrestrial ecosystems (GWDTEs).
- Increased surface runoff and changes to infiltration rates where borehole infrastructure, access tracks, or crane pads alter surface compaction and drainage patterns.
- A cumulative hydrological impact assessment should therefore be undertaken in accordance with recognised technical standards and guidance, including:
    1. BS 5930:2015+A1:2020 - *Code of Practice for Ground Investigations*;
    2. BS 10175:2022 - *Investigation of Potentially Contaminated Sites*;
    3. CIRIA C753 (The SuDS Manual) - for integration of borehole works within site drainage management; and
    4. Environment Agency Groundwater Protection Guidance (GP3) - relating to borehole construction and decommissioning.

**Cumulative Hydrological and Drainage Assessment** the assessment should include:

- Baseline hydrogeological characterisation, comprising long-term monitoring of groundwater levels, flow direction, and piezometric response under varying seasonal conditions. Data should be collected through appropriately screened boreholes and interpreted using potentiometric mapping.

- Quantitative assessment of borehole density, depth, and spatial distribution, with hydrogeological modelling (e.g., MODFLOW or equivalent) to predict potential cumulative changes in groundwater flow regimes.
- Analysis of hydraulic conductivity (K) and transmissivity (T**)** parameters derived from in-situ permeability testing, supported by slug tests or packer testing where appropriate.
- Assessment of interaction with existing hydrological receptors, including surface watercourses, springs, wetlands, and private water supplies within 2 km of the development boundary, supported by dye tracing or isotope studies where feasible.
- Evaluation of drainage interconnectivity between boreholes, turbine foundations, cable trenches, and surface water attenuation systems, to identify any increase in drainage convergence or infiltration losses.

Mitigation should include the use of fully grouted borehole seals, backfilling in accordance with BS EN ISO 22475-1:2021, and the incorporation of perimeter drainage attenuation to manage altered flow paths. Ongoing groundwater monitoring should be embedded within the Construction Environmental Management Plan (CEMP), with thresholds established for groundwater level variation, turbidity, and chemical indicators (pH, EC, nitrate, Fe, Mn) to trigger remedial action where deviations are observed.

Implementation of these measures will ensure that the hydrological integrity of the site and surrounding catchment is maintained, safeguarding both groundwater quality and the hydrological balance of dependent ecological and agricultural receptors.

### Hydrology and Private Water Supplies - Local Borehole and Spring Vulnerability

Community engagement and baseline consultation have identified numerous properties within the Bran and Cilieni valleys — including holdings at Gwarfelin, Carnau, and adjacent upland farms that are wholly or partially reliant on private groundwater abstractions, predominantly via boreholes and spring-fed collection systems. These sources provide both potable and agricultural water supplies and are typically shallow, drawing from superficial deposits and weathered bedrock horizons with limited natural protection from surface disturbance or contamination.

The proposed development footprint overlies hydrologically sensitive terrain where groundwater-surface water connectivity is high, and where the presence of peat, glacial till, and fractured bedrock units creates complex and discontinuous flow paths. Construction activities associated with the proposed development particularly deep excavation for turbine foundations, piling, trenching for electrical cabling, and the installation of substation infrastructure have the potential to alter local hydrogeological conditions.

These works will intercept perched groundwater tables, disrupt preferential flow pathways, or induce dewatering and drawdown effects that reduce yields from nearby private supplies. Additionally, excavation through low-permeability strata could create artificial drainage pathways, leading to localised desaturation or diversion of spring discharges.

A further concern relates to chemical contamination risks. During turbine and foundation construction, alkaline leachate from uncured or exposed concrete, cementitious grouts, and aggregate washout areas can percolate into underlying soils and groundwater. The resultant high-pH effluent has the potential to mobilise trace metals and alter redox conditions, affecting both aquifer geochemistry and microbial balance. Prolonged exposure to elevated alkalinity can degrade the potability of water and corrode distribution infrastructure. Similarly, accidental releases of fuels, lubricants, or drilling fluids during construction pose acute contamination risks to shallow groundwater receptors and connected surface water features.

These impacts are likely to be most pronounced in areas where groundwater gradients are steep and connectivity between construction zones and private abstractions is direct, such as the side slopes draining towards the Bran and Cilieni valleys. Given the reliance of local communities and farms on these supplies, even temporary degradation or loss of yield would represent a significant adverse impact on public health, animal welfare, and agricultural operations.

**Cilieni Valley and River Usk Catchment Hydrology** the Cilieni valley contains numerous farms and dwellings dependent on private spring-fed systems sourced from upland commons. Disturbance from construction or access-road formation could cause permanent spring loss or contamination. Runoff and sedimentation risks extend downstream to the River Cilieni and River Usk Special Area of Conservation (SAC), potentially affecting water chemistry and aquatic species.

In summary, the Scoping Report has not explicitly scoped in (or out) the potential effects on water quality, surface water hydrology, and groundwater - which is necessary under Environmental Impact Assessment.

This is a significant omission.

**Hydrogeological Complexity** The proposed development sites underlying St. Maughans Formation is characterised by mudstone and sandstone sequences, where groundwater movement occurs primarily through fracture networks and localised permeable lenses rather than through a uniform matrix flow. This results in highly variable and unpredictable hydraulic connectivity across short distances.

Given the complex and discontinuous nature of the fracture system, there is a high degree of modelling uncertainty, particularly when attempting to predict groundwater behaviour over small spatial scales such as those relevant to individual turbine locations and private water supply (PWS) catchments.

The scoping report does not adequately address the implications of this hydrogeological uncertainty. Construction activities including turbine foundation excavation, road construction, trenching for cabling, and substation installation will inevitably induce further fracturing and structural disturbance of the shallow mudstone strata. These works, coupled with vibration and loading effects during operation, have the potential to alter groundwater flow paths, reduce recharge to local springs, and disrupt the supply to private boreholes and wells.

Given that many residents in the Bran and Cilieni valleys rely on these sources for domestic and agricultural use, such effects could have substantial implications for water availability and quality.

The Environmental Statement must therefore explicitly recognise the inherent uncertainty associated with the geological model and clearly describe how this uncertainty has been quantified, managed, and factored into impact predictions.

**Required Action - Quantitative Hydrogeological Risk Assessment** including.

- How construction and operational vibrations could affect fracture connectivity and groundwater yields.
- A Private Water Supply (Protection Plan specifying the spatial extent of monitoring, baseline sampling protocols, and mitigation triggers.
- Defined timescales for monitoring of spring and borehole flows, with a requirement for sustained post-construction observation to detect delayed hydrological impacts; and
- A clear remediation and contingency strategy, outlining the measures that the applicant would implement in the event of flow reduction, spring cessation, or borehole failure.

Until these elements are addressed, the current scoping documentation cannot be considered to have adequately assessed or mitigated the hydrogeological risks associated with the St. Maughans Formation, nor does it meet the evidentiary standard required by the EIA (Wales) Regulations 2017 or the Welsh Government's guidance on groundwater protection and PWS safeguarding

**Required Action - The Environmental Statement** must include

- Mapping of all private boreholes and spring-fed supplies within a 4 km radius of all proposed works.
- A hydrogeological risk assessment identifying groundwater flow direction, vulnerability, and connectivity.
- Measures for containment of concrete washout, fuel, and sediment control.
- Ongoing water-quality monitoring during construction and early operation.

**Required Action - Technical Inclusions**

- Extension of the hydrological study boundary to cover the full Cilieni catchment.
- Mapping of all private abstractions and spring sources; confirm connectivity using dye tracing or borehole correlation.
- Quantification of changes in surface runoff volumes and timing under climate-change rainfall scenarios.
- Evaluation of implications for flood-risk management schemes and Usk SAC water-quality objectives.
- Defined mitigation and contingency measures, including emergency water-supply substitution plans if contamination occurs.

**Required Action - Identification of Water Framework Directive and Local Water Bodies** The proposed Garreg Fawr site lies within or adjacent to several Water Framework Directive classified water bodies, each of which must be safeguarded under Regulation 33 of the EIA Regulations 2017 and the objectives of the current River Basin Management Plan (RBMP).

This data is omitted from the draft scope and is a significant concern.

The Nant Brân (GB109056040040) is an upland tributary of the River Usk, currently achieving “good” ecological and chemical status. This watercourse is sensitive to siltation, hydrological change, and nutrient loading — particularly due to their proximity to semi-natural peatland, grazed moorland, and SAC-designated stretches. The Bran demands careful protection to avoid deterioration.

The proposed site also overlies the Central Wales Bedrock Groundwater Body, which holds “good” status for chemical and quantitative conditions.

Construction activities, including cable trenching and foundation works, must therefore avoid introducing contaminants or altering local recharge and discharge regimes. Small superficial drift aquifers on-site, though minor, are especially vulnerable to construction runoff and require protection through SuDS, spill containment, and appropriate drainage design.

Under WFD obligations, the Environmental Statement must demonstrate how the scheme will avoid deterioration of water body status, particularly using sustainable drainage systems, sediment controls, and buffer zones. Crossings of watercourses must be designed to avoid in-channel works and must be justified under the "no deterioration" principle set out in the WFD and associated RBMP measures.

All this material information and data is missing from the Scope document and must be supplied.

**Required Action - The Environmental Statement**
Should include a dedicated section or chapter on the Hydrology, Hydrogeology, Flood Risk and Water Resources, covering:

**Required Action - Baseline Description Map** to describe all streams and waterbodies on the site and within, say, 10-15 km downstream (as far as any potential zone of impact). Include information on their flow, water quality (any known data or classifications), and ecological status. Identify any private water supplies. Also describe the soil and subsoil structure affecting drainage (peat inherently holds water, but if there are mineral soils or rock outcrops, runoff patterns differ).

**Required Action - Impact Assessment** is required to evaluate how the proposed infrastructure might alter surface runoff or groundwater. This includes potential for increased sedimentation (from excavations, exposed soil, and track construction), risks of chemical pollution (e.g. concrete washout, fuel spills from machinery), and changes to flow paths (cut tracks can act as drains if not managed). Each turbine base and road segment should be revisited for proximity to water - e.g., will any track cross a stream (requiring a culvert or bridge).

**Required Action - Flood Risk** As the proposed site is not low-lying, the applicant must consider if runoff could exacerbate flood conditions downstream. There is a history of local flash flooding in Llanfihangel Nant Bran which has not been reviewed. A basic runoff calculation (pre- and post-development) must be done.

As the planned development sits in the headwaters of a catchment that feeds the village, any slight increase in runoff will have significant consequences for residents. If the risk is non-negligible, mitigation like attenuation ponds or swales will be required.

Compliance with sustainable drainage principles is expected for new developments in Wales and this has not been assessed.

**Required Action - Flood Risk Surface Runoff**
Residents in Llanfihangel Nant Bran and Gwarfelin have reported recurrent flooding when hillside gutters overflow. The replacement of peat and soil with hardstanding will increase impermeable area, accelerate runoff and reduce infiltration. Without adequate attenuation, peak flows will rise, heightening flood risk in the Bran and Cilieni valleys and further downstream in the River Usk catchment. This aligns with climate-driven increases in rainfall intensity.

The Environmental Statement should therefore:

- Provide a hydrological model comparing pre- and post-development flows.
- Incorporate sustainable drainage system (SuDS) design.
- Assess downstream flood implications and required mitigation.

**Required Action - Mitigation Measures** the Environmental Statement lacks detail and should commit to robust water protection measures, such as:

- Keeping as much vegetation and topsoil in place as possible (progressive re-vegetation of disturbed areas).
- Using silt traps, silt fencing, and settlement ponds during construction to prevent sediment from reaching streams.
- Appointing an Environmental supervisor to monitor water quality during high-risk activities.
- No refuelling or concrete pouring within a set buffer distance (e.g. 50 m) of any watercourse, unless necessary with secondary containment.
- Designing road drainage with cross-drains and diffuse outfalls so that water is not funnelled straight into local streams and subsequently rivers at high velocity.
- For all deep excavations intercept groundwater, using techniques like cut-off drains to redirect flows and avoid drying out adjacent peat.

There is no link with the NRW flood plain established several years ago in Llanfihangel Nant Bran, this is a significant omission.

**Required Action - Groundwater and Peat Hydrology** Since peatlands are essentially water-dependent, the applicant must show that turbine foundations won't cause draining of peat (for example, piling might be used in peat to reduce groundwater disruption). If any springs or wetland features are present, as discussed these must be mapped to ensure infrastructure avoids them or is designed (like culverts) to maintain their flow.

**Required Action - Mitigation Measures** Mitigation measures must include a comprehensive Hydrogeological Risk Assessment as outlined above and supported by a Peat Landslide Hazard and Risk Assessment.

Targeted baseline sampling of private water supplies prior to commencement, and the establishment of a Water Supply Protection Plan incorporating buffer zones, real-time water quality monitoring, and emergency response protocols are also required.

Such measures are necessary to ensure that excavation, piling, and concreting works do not compromise the integrity of local aquifers or private abstraction sources.

**Required Action - Private Water Supply (PWS) Monitoring Parameters & Frequency**
The current scoping document does not provide a clear commitment to establish a baseline and ongoing monitoring programme for private water supplies. Pre, during and post water quality monitoring is required as outlined below.

Private water supply sampling locations must cover all active springs and boreholes within 4km of the development and any others identified as being a hydrological influence.

All results should be reviewed by an independent hydrogeologist and submitted to Powys County Council Environmental Health, PEDW and Natural Resources Wales (NRW) and all analytical methods should follow UKAS-accredited laboratory standards and data retained as part of the Environmental Statement evidence base.

| Parameter Group | Typical Indicators / Analytes | Purpose / Relevance | Recommended Frequency |
|---|---|---|---|
| Baseline Parameters | pH, conductivity, turbidity, temperature, hardness, alkalinity | Establish water chemistry and detect construction-related change in basic water quality | Baseline (pre-construction), quarterly during construction, annually post-construction |
| Major Ions & Nutrients | Nitrate, nitrite, ammonium, chloride, sulphate | Identify contamination from runoff, concrete leachate, or disturbed soils | Baseline, quarterly during construction, biannually post-construction |
| Metals and Minerals | Iron (Fe), Manganese (Mn), Copper (Cu), Zinc (Zn), Lead (Pb), Chromium (Cr), Aluminium (Al) | Detect contamination from materials, concrete, or construction equipment | Baseline, quarterly during construction, annually post-construction |

| | | | |
|---|---|---|---|
| Hydrocarbon Indicators | Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAHs) | Detect leaks or spills from fuel, lubricants, or machinery | Baseline, monthly during refuelling operations, quarterly thereafter |
| Construction-Related Contaminants | Glycols, esters, suspended solids, alkalinity | Identify contamination from hydraulic fluids, batching plant effluent, or surface water runoff | Baseline, quarterly during construction |
| Microbiological Parameters | Total coliforms, Escherichia coli (E. coli), heterotrophic plate count (HPC) | Verify potable water safety and identify microbial contamination from ground disturbance | Baseline, quarterly during construction, biannually post-construction |
| Hydrological Observation | Flow rate, standing water level, seasonal variation | Confirm continuity and stability of water supply during and after construction | Continuous observation or quarterly measurement |

### Hydrology Assessment - Conclusion

By including these analyses, the Environmental Statement should ensure compliance with water protection legislation (Environmental Damage Regulations, etc.) and reassure the community that the development will not inadvertently pollute watercourses or worsen local flash flooding.

The local community has strong interest in this; many individuals are concerned that wind farm construction has, in other well investigated and publicised cases, led to silted up rivers, damage to private water supplies and local flooding.

Proactive planning can prevent such outcomes - all this detail is missing from the supplied scoping document. A significant omission.

## 14. Traffic, Transport and Access (including Abnormal Loads)

The Scoping Report acknowledges that a Transport Assessment will be conducted, but it provides very little detailed information on how construction traffic - especially Abnormal Indivisible Loads (AILs) such as turbine components - will reach the site. The site is in a very rural area with minor roads and tracks, so this is a critical issue for residents and infrastructure. Key shortcomings include:

**Lack of Route Details for Abnormal Indivisible Loads** The report does not specify the likely port of entry (if components come via Swansea, Newport, etc.) or the route to site. It doesn't discuss potential pinch points (tight bends, narrow bridges, weak culverts, and very steep gradients) that abound the proposed site country roads. Without a preliminary swept-path analysis, it's impossible to gauge if the chosen route is even feasible or if major road works would be needed (road widening, junction realignments, temporary removal of street furniture, etc.).

**Community Consultation and Transport Information Requirements** Communities require clear and detailed information regarding the proposed abnormal load and construction convoy routes, including the specific towns and villages that will be affected — for example, whether access will be gained via Brecon or through smaller rural communities along the transport corridors. Such information is essential to allow both consultees and residents to understand and comment meaningfully on the potential implications of the scheme, including traffic delays, highway safety, vibration and noise effects near residential receptors, and temporary disruption to local access routes.

At present, the absence of confirmed routing and vehicle movement data limits the ability of consultees to provide an informed and proportionate response to the proposed development. Without defined convoy routes, haulage frequencies, or timing profiles, it is not possible to properly assess potential cumulative transport impacts, including those associated with other regional infrastructure projects or agricultural traffic. This lack of transparency hinders an evidence-based evaluation of the proposal's compliance with relevant planning and environmental standards.

Under Technical Advice Note (TAN) 18: Transport (Welsh Government, 2007), applicants are expected to demonstrate that the transport implications of major developments have been fully assessed, considering safety, efficiency, and amenity impacts on affected communities. Furthermore, Planning Policy Wales (Edition 12, 2021) emphasises the need for early and effective engagement with local stakeholders where significant construction traffic is anticipated, to safeguard community wellbeing and ensure fair and transparent decision-making.

In the context of the Environmental Impact Assessment (EIA) (Wales) Regulations 2017, insufficient route and traffic information also impedes the ability to determine the potential for significant environmental effects on population, human health, and material assets.

Therefore, to meet both regulatory and procedural requirements, the applicant should provide a detailed Transport and Access Plan identifying all proposed convoy routes, settlement interfaces, anticipated vehicle numbers, and mitigation measures. This level of information is necessary to allow consultees and decision-makers to undertake a reasoned assessment of the proposal's transport-related effects and its overall compliance with national and local planning policy.

**Highway Structures** the Scoping Report is silent on whether any existing bridges or structures along the route can handle the weights (some components can weigh 60-100 tonnes on multi-axle trailers). The omission of a commitment to early engagement with the highway authority and Welsh Government Trunk Road Agency (for any trunk roads used) is a concern.

There's also no mention of police escort requirements, which will certainly be needed for convoys, or consultation with local authorities about peak traffic times to avoid.

**Construction Traffic Volume** Aside from abnormal loads, the project will entail tens of thousands of Heavy Goods Vehicle movements (bringing in stone for roads, concrete for foundations, etc.) and workforce traffic. The scoping doesn't provide even a rudimentary estimate of how many two-way trips might be expected, nor does it identify sensitive receptors along the likely access routes.

Without this, we cannot assess the potential noise, dust, and road safety impacts on our communities.

### Relevant Guidance

Welsh Government Transport guidance and Welsh Transport Appraisal Guidance emphasise understanding the transport effects of major schemes from the start.

Specifically, Abnormal Indivisible Loads (AIL) movement in Wales is guided by the "Protocol for Wind Turbine Transport" and requires early route planning with the police and highway authorities.

The industry practice is to include a Route Survey Report in the Environmental Statement, documenting the chosen route, any required modifications, and how traffic will be managed. The Institute of Highways & Transportation guidelines and DfT's codes on abnormal loads also apply. The Scoping Report should reflect those, but it does not.

It should also align with the commitment in Future Wales - The National Plan 2040 (Welsh Government, 2021) to coordinate infrastructure with communities, avoiding undue disruption.

Community concerns are high in this area. Construction traffic can damage minor roads, cause congestion or even structural damage to old buildings by vibration. It's expected that the applicant addresses these head-on at Environmental Impact Assessment stage.

### Required Action - Scoping Direction

This should make clear that a thorough Traffic and Transport Assessment is expected, covering both normal construction traffic and abnormal loads.

**Required Action - Abnormal Loads Route Assessment** the Environmental Statement must include a detailed route assessment for delivering turbine components from port or factory to the site. This should identify the entire route, highlight all constraints (bridge weight limits, tight corners, road widths, overhead obstructions, etc.), and propose solutions (temporary road modifications, use of self-steering trailers, coordination with authorities).

A Swept Path Analysis using design vehicle templates (such as a 60m blade on appropriate trailer) should be presented for critical turns. Where bridge or culvert capacity is in question, a plan for structural assessment and strengthening (or alternative routing) must be outlined. Early correspondence with North & Mid Wales Trunk Road Agent and Dyfed-Powys Police (for escort arrangements) should be included to show this is in hand.

**Required Action - Construction Traffic Management Plan** the Environmental Statement should commit to a Construction Traffic Management Plan that will be implemented, including measures like avoiding Heavy Goods Vehicle trips through certain villages during school run hours, employing traffic marshals, if necessary, at narrow sections, and communicating schedules to the community.

If roads need temporary closures or diversions, that should be flagged now. Also, the plan should address wear-and-tear on local roads - typically an agreement to carry out pre- and post-construction road condition surveys and repair any damage caused by construction traffic.

**Required Action - Traffic and Access - Steep Gradient Safety and Emission Impacts** Local observations highlight the risks of heavy vehicle movements on steep, narrow roads such as those above Cwmcynog. The Environmental Statement should include a gradient-based route safety assessment, identifying sections where HGV traction or braking may be unsafe; propose traffic-management controls; and assess vibration and noise impacts on nearby dwellings. Non-exhaust emissions from tyre and brake wear represent an additional pollutant source in this location and are considered elsewhere in this response.

**Required Action - Traffic Volume Estimates** Provide estimates of the number of Heavy Goods Vehicle movements per day during peak construction (e.g., road stone delivery phase, concrete pour days) and the duration of these peaks. The scoping report should assess the impact on road links in terms of percentage increase in traffic - if a local Llanfihangel Nant Bran country lane now sees 50 vehicles a day and will see 50 HGVs a day additionally, that's a huge increase in percentage terms, and the effects on other road users (farmers, school buses) must be considered.

Disruption and pedestrian safety in villages at the destination along the route must be addressed and is missing from the scoping document.

**Required Action - Mitigation for Traffic Impacts** This should include committing to road improvements (widening a corner, adding passing places on single-track sections) prior to main construction, with the necessary permissions; timing heavy deliveries to avoid weekends or local events (avoiding tourist peak season if roads are used by visitors heading to the National Park); and providing community liaison so residents get advance notice of convoys. Another key mitigation is agreeing on convoy timing - a balance must be struck, potentially avoiding very early or late movements past homes.

**Required Action - Tyre Wear Microplastics & Other Traffic-Derived Non-Exhaust Particles** Construction and operational traffic associated with the proposed Garreg Fawr Energy Park will significantly increase heavy vehicle movements on rural and unsealed roads. Such activity generates non-exhaust emissions, particularly from tyre and brake wear, which are now recognised as major sources of particulate pollution in the road environment.

Tyre wear microplastics (TWP) account for 30-50% of all microplastics found in roadside soils and drainage sediments. These particles contain synthetic rubbers, carbon black, and trace metals such as zinc, copper, and cadmium, while brake wear debris adds further metallic contaminants.

Once released, these particulates accumulate in verges, ditches, and watercourses where they persist, undergo resuspension, and contribute to local contamination of air, soil, and surface water.

Given the anticipated increase in HGV traffic, the potential for generation and dispersal of non-exhaust particles is high and warrants detailed assessment.

The Environmental Impact Assessment should therefore:

- Explicitly assess non-exhaust emissions (tyre and brake wear particulates) in relation to air, soil, and water quality along all access and haulage routes.
- Quantify expected emissions using established estimation methods (e.g., EMEP/EEA Guidebook factors).
- Evaluate the potential for deposition and accumulation in roadside and receiving environments; and
- Identify appropriate mitigation measures such as route management, dust suppression, and surface maintenance to reduce emissions and prevent runoff-related contamination.

The current scoping report does not address these pollutants, and their omission represents a material gap in the environmental assessment of transport-related effects, and they must be included.

## References

1. DEFRA (2022). Non-Exhaust Emissions from Road Traffic - A Review of Current Knowledge. Department for Environment, Food and Rural Affairs, UK Government.
2. EMEP/EEA (2023). Air Pollutant Emission Inventory Guidebook: Road Transport Chapter. European Environment Agency.
3. Kole, P. J., Löhr, A. J., Van Belleghem, F. G. A. J., & Ragas, A. M. J. (2017). Wear and tear of tyres: A stealthy source of microplastics in the environment. International Journal of Environmental Research and Public Health, 14(10), 1265.

## Traffic Impact and Movement Assessment - Conclusion

By addressing the above topics in the revised Environmental Statement, the scheme will align with guidelines such as Welsh Government's "Abnormal Loads Practice Guidance" and ensure that highways authorities and the community have confidence that transport issues are manageable.

Planning and Environment Decisions Wales should also be aware that if the route is especially problematic, this should influence whether the site is appropriate at the scale proposed.

Confirming the transport strategy at scoping stage is indispensable - this is not possible with the document that has been provide and is a significant omission.

## 15. Noise (Operational Noise and Amplitude Modulation)

The Scoping Report indicates that the noise assessment will follow ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) guidance and the Institute of Acoustics Good Practice Guide (GPG), which is standard for wind turbine noise, but it lacks detail on important aspects such as how Amplitude Modulation will be addressed, whether background noise surveys have been done at all relevant properties, and if updated guidance will be considered.

Wind turbine noise is a significant concern for rural residents, and modern larger turbines can produce different noise characteristics (e.g. enhanced amplitude modulation - the cyclical “swish/thump” that can be more pronounced under certain weather conditions).

### Exclusion of Military Training Noise from Background Baseline

To ensure compliance with ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) and the IOA Good Practice Guide (2013), baseline background noise measurements must reflect the true prevailing ambient conditions in the absence of atypical, infrequent, or extraneous noise sources. The Garreg Fawr site lies within acoustic range of the Sennybridge Training Area (SENTA), an active Ministry of Defence live-fire training ground. Artillery and small arms fire, mechanised movement, and aerial overflights linked to scheduled MOD exercises are known to cause episodic elevation in background sound levels across the local noise environment.

In accordance with Section 5.1.1 of the Institute of Acoustics Good Practice Guide (2013), such intermittent, non-representative events must be identified and removed from background noise datasets to avoid distortion of the derived baseline (LA90). Failure to exclude these atypical events would result in an artificially elevated noise floor, thereby masking operational turbine noise and prejudicing the assessment of exceedances at sensitive residential receptors.

The Environmental Statement must demonstrate that baseline monitoring avoids periods of live-fire or military training activity and is scheduled to coincide with operationally quiet weeks at SENTA. Full disclosure of meteorological logs, MOD activity timetables, and time-synchronised audio verification must be provided in support of the LA90 derivation.

This aspect is entirely omitted from the scoping report and is essential for accurate calculation of the background baseline.

**Relevant Guidance** ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) remains the reference, and it sets noise limits relative to background (e.g. 35-40 dB(A) at night or 5 dB above background, whichever is higher, at related wind speeds) excluding military training noise as outlined above.

The Institute of Acoustics GPG (2013) provides details on measurement and prediction. Importantly, in recent years, bodies like the UK Institute of Acoustics and some local authorities have recognised the need to manage Amplitude Modulation; for instance, some examinations (e.g. in Wales, public inquiries) have imposed conditions requiring adherence to a notional Amplitude Modulation threshold (e.g. no more than 3 dB of Amplitude Modulation above median for 10 % of the time) - reflecting growing evidence and community concerns. This should be addressed by the applicant in the final report.

The Designing for Renewable Energy in Wales document confirms that Wales adheres to ETSU and GPG and explicitly notes that a review of noise guidance has been done and changes might come. This implies Welsh Government is aware of shortcomings in current guidance, possibly including Amplitude Modulation. This is omitted from the scoping document.

**Baseline Noise Monitoring** The scoping report doesn't say if baseline noise surveys at nearby dwellings have been carried out or are planned. ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) requires measurement of existing background noise (dB(A)) at a representative sample of the nearest noise-sensitive receptors (NSRs), typically over a range of wind speeds. Without committing to adequate baseline monitoring (e.g. over at least 2-3 weeks at several locations), the reliability of any future noise limits or predictions could be questioned.

**Prediction Method and Standards** Using ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) (1996) is expected (as it remains UK Government policy for wind farm noise assessment), and the Institute of Acoustics GPG (2013) provides detailed implementation guidance. However, since those were published, there have been developments - for example, a UK Government-commissioned review of wind turbine noise guidance was completed recently (as hinted in Designing for Renewable Energy in Wales, which notes a review of noise guidance for onshore wind has been undertaken and any changes would be considered by Welsh Government).

The Scoping Report doesn't mention if any interim methodologies (like the Institute of Acoustics suggested methodology for Amplitude Modulation in 2016) will be incorporated.

There is a further risk that the applicant's approach will be confined to a minimum ETSU-R-97 compliance check, omitting consideration of non-stationary acoustic effects, notably Excess Amplitude Modulation (EAM)**.** EAM events can be particularly pronounced under stable atmospheric stratification at night, leading to periodic fluctuations in sound pressure levels that are not adequately captured by standard ETSU methodologies. This is a significant omission.

**Amplitude Modulation** Amplitude Modulation is effectively the rhythmic beating or throbbing in turbine noise, which residents often find highly intrusive even if overall noise levels meet ETSU average limits.

There is currently no mandatory standard in the UK for Amplitude Modulation penalties, but there is an Institute of Acoustics noise working group paper suggesting a possible penalty scheme (the "Method for Rating Amplitude Modulation", 2016).

The Scoping Report is silent on Amplitude Modulation, which is concerning because many wind farms have conditions related to Amplitude Modulation now (for example, requiring a scheme to control it if it exceeds a certain decibel modulation depth).

If not assessed consultees are unable to respond effectively and the Planning Inspectorate or local authority cannot condition something appropriately.

**Cumulative Noise** If there are other existing or planned wind turbines in the vicinity (even smaller ones), cumulative noise impact should be checked. The scoping doesn't mention cumulative noise, but it should be considered.

**Infrasound and Low-Frequency Noise**

The decision to scope out infrasound and low-frequency noise (LFN) from the Environmental Impact Assessment is not supported by an adequate evidence base. Section 16 of the Scoping Report dismisses potential effects using generic references to ETSU-R-97 and Institute of Acoustics guidance, without presenting site-specific baseline data, modelling outputs, or receptor context.

The proposed Garreg Fawr Energy Park is in an upland area characterised by exceptionally low background noise levels. The absence of masking sound increases the perceptibility of low-frequency components, particularly under certain atmospheric stability conditions such as temperature inversions and downwind propagation. Modern large-scale turbines (>200 m tip height) exhibit aerodynamic and structural characteristics that differ substantially from those assessed in the datasets underpinning ETSU-R-97, with potential to generate modulated infrasound components not captured by outdated models.

Furthermore, inter-individual variability in human physiological response to infrasound remains poorly understood. Recent peer-reviewed studies (e.g., Salt & Kaltenbach, 2011; Jakobsen, 2020) suggest potential vestibular and neurological effects at sound pressure levels below the conventional threshold of perception. Given the reliance of residents and agricultural communities on a stable and tranquil acoustic environment, this uncertainty warrants assessment under the precautionary principle embedded in the EIA (Wales) Regulations 2017.

The Scoping Report also fails to consider that infrasound and LFN can interact with topography, meteorological patterns, and structural resonance phenomena, resulting in site-specific amplification. These effects are not adequately addressed by the simplified assumptions of ETSU-R-97. Consequently, the assertion that infrasound is “below threshold and insignificant” cannot be sustained without empirical data.

**Required Action - Infrasound** To comply with the requirements of Schedule 4, Paragraph 5 of the EIA (Wales) Regulations 2017 and Planning Policy Wales (Edition 12), the Environmental Statement should include:

1. Baseline low-frequency monitoring (0.5-200 Hz) at representative receptor locations prior to construction.
2. Modelling of low-frequency propagation from operational turbines using manufacturer data and IEC 61400-11 methodology.
3. Assessment against established benchmarks such as DEFRA (2011) NANR45, ISO 7196, and Danish EPA low-frequency criteria; and
4. A Noise Management and Monitoring Plan that defines mitigation and adaptive management measures in the event of perceptible LFN or infrasound-related complaints.

Until these requirements are addressed, the scoping out of infrasound and low frequency noise is premature and inconsistent with the precautionary approach required under Welsh environmental assessment regulations.

It is therefore recommended that PEDW require the reinstatement of infrasound and low-frequency noise as scoped-in topics within the Environmental Statement to ensure a robust, transparent, and evidence-based assessment of potential population and human health effects.

**Required Action - Environmental Statement** the Environmental Statement noise assessment needs to be comprehensive and is not detailed in this document. The elements of military training noise have been entirely omitted.

**Required Action - Baseline Surveys** Conduct background noise monitoring at enough locations (all main clusters of dwellings around the site, typically the closest properties in each direction). Data should be gathered over at least 1-2 weeks, covering a range of wind speeds and using 10-minute synchronized periods with wind measurements at turbine hub height or a standard 10 m height on site.

This data will underpin ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997): *The Assessment and Rating of Noise from Wind Farms* limits. The Scoping Direction should request that noise monitoring locations and durations be agreed with technical local specialists and with local agreement and reflect habitable locations not isolated uninhabited assets.

**Required Action - Modelling and Prediction** The applicant should be required to produce technical accurate models using ISO 9613-2 modelling with appropriate adjustments (as per Institute of Acoustics GPG) for terrain and atmospheric conditions to predict turbine noise at all NSRs. Assume a candidate turbine model (or take a conservative spectrum if exact model unknown, using the highest sound power level for the size class). Present noise contour maps. Ensure to include a cumulative prediction if any other assets contribute at those receptors; even if small, they should be summed if in overlapping range.

**Required Action - Identification and Assessment of Noise Sensitive Receptors (NSRs)** The Scoping Report fails to identify or map Noise Sensitive Receptors (NSRs), contrary to the requirements of ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) and the Institute of Acoustics (IOA) Good Practice Guide (2013).

NSRs are defined as locations where people may be disturbed by noise, including permanent residential dwellings, schools, healthcare facilities, and, in some cases, tourist accommodation and places of worship. Within the vicinity of the Garreg Fawr proposal, high-sensitivity NSRs include properties in Llanfihangel Nant Brân, and dispersed rural dwellings within a 4 km radius of turbines T10-T19, several of which have direct line-of-sight to multiple proposed turbines.

Without a geospatial inventory of all NSRs likely to be affected by turbine operation and construction activity an assessment cannot be made

Baseline monitoring must be conducted at representative NSRs to establish location-specific LA90,10min noise levels over a minimum three-week period, excluding anomalous sources such as MOD live-fire exercises.

Predicted turbine noise levels must then be modelled at each NSR under ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) methodology, and cumulative noise impacts must be assessed where other wind energy projects are operational or consented within acoustic range.

The Environmental Statement must also commit to presenting full propagation modelling, turbine sound power data, and exceedance analysis against both daytime and night-time ETSU thresholds at each identified NSR. In relation to the Environmental Impact Assessment and wind farm noise studies,

**Required Action - Amplitude Modulation Analysis** Commit to analysing the risk of Amplitude Modulation. This could involve a literature-based assessment (noting large turbines have tended to show more Amplitude Modulation complaints) and possibly using any available data or model to predict Amplitude Modulation occurrence.

While accepting it is hard to calculate exactly, the Environmental Statement should not just ignore it. It should propose a strategy: for example, “a penalty of up to 5 dB for Amplitude Modulation will be applied if necessary to ensure compliance” or “the operator will implement an Amplitude Modulation management plan if monitored levels exceed a certain threshold”.

The Scoping Direction should explicitly mention that Amplitude Modulation will be addressed - as England’s recent consultations have done - to avoid a scenario where noise is “technically within ETSU” but still intolerable due to thumping character.

**Required Action - Night-time and Low-Frequency Noise** Confirm that the assessment will consider night-time operations (all turbines run through the night unless curtailed). If any properties are very close, consider if a Low-Frequency Noise assessment is necessary (ETSU is A-weighted, which can under-represent low-frequency components).

**Required Action - Mitigation and Monitoring** If the predicted noise levels are close to limits, the Environmental Statement should propose mitigation like curtailment strategies (for instance, shutting down certain turbines under specific wind directions that cause worst-case at a receptor (including local Llanfihangel Nant Bran residents or assets), or higher cut-in speeds at night to reduce noise).

Also, it should commit to a post-construction noise monitoring to verify compliance, and an approach to handle noise complaints. Specifically for Amplitude Modulation, a condition should be proposed that requires the applicant to investigate and resolve excessive Amplitude Modulation.

**Required Action - Exclusion of Military Training Noise from Background Baseline**
As identified to ensure compliance with ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) and the IOA Good Practice Guide (2013), baseline background noise measurements must reflect the true prevailing ambient conditions in the absence of atypical, infrequent, or extraneous noise sources.

The Environmental Statement and noise monitoring results must demonstrate that baseline monitoring avoids periods of live-fire or military training activity and is scheduled to coincide with non-live firing and quiet times at SENTA. Full disclosure of meteorological logs, MOD activity timetables, and time-synchronised audio verification must be provided in support of the LA90 derivation.

**Noise Assessment - Conclusion**
By thoroughly addressing noise, including Amplitude Modulation, the project can ensure it meets not just the letter of ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (DTI, 1997) but also the spirit of ensuring “no significant adverse impact on health and quality of life” from noise (as per TAN 11 and general policy). Given the quiet rural backdrop (low existing background noise at night, likely in the 20s dB(A)), even minor noise can be noticeable, so rigor is needed and this is substantially omitted from the scoping document.

Planning and Environment Decisions Wales should ensure the applicant does not treat noise lightly simply because ETSU gives some margin; public acceptance hinges on honest and full assessment and recognition - this is omitted from the scoping report

## 16. Consideration of Alternatives

The Scoping Report provides little to no information on the alternatives that have been or will be considered, contrary to Environmental Impact Assessment requirements.

Under the Environmental Impact Assessment Regulations, an Environmental Statement must include "a description of the reasonable alternatives… studied by the applicant" and the main reasons for the choice made, considering environmental effects (Reg. 17 and Schedule 4).

As of now, there is no evidence that the applicant has explored alternative sites, layouts, turbine heights, or even renewable technology choices.

This raises significant concerns that the eventual Environmental Statement will not demonstrate the project was optimised to avoid impact or indeed that such alternatives have even been considered.

Key points that should be addressed under alternatives:

**Alternatives - Site Selection** Why was this site chosen for a wind energy project, and were other broad locations considered? For instance, within the region or within the company's land portfolio, were there sites with less sensitive receptors, sites where whole communities would not be isolated and surrounded by turbines, or less peat, etc.?

**Alternatives - Landscape and Visual Impact Assessment** Did the applicant consider turbines of smaller size? Or a different maximum tip height (e.g. 180 m instead of 220 m) to reduce visual intrusion? The Scoping Report just gives an upper bound without context.

What consideration has been given to reducing the number or size of turbines or removing those that cause the highest perceived impact. Has an alternative layout reflecting changes been assessed to consider the environmental trade-offs, such as a slightly reduced energy output balanced against a markedly lower visual and noise impact? The Scoping Report does not provide clarity on whether such options have been explored.

**Alternatives - Design Evolution** A description of how the layout evolved - e.g., "we moved turbines away from the highest ridge to reduce visibility from the National Park" or "we avoided known bird flight corridors" - is expected. Without it, consultees and residents and other stakeholders cannot see if their early input was heeded or if obvious mitigation alternatives were ignored.

**Alternative Technologies or Configurations** Theoretically, could a smaller wind farm plus some solar or storage on site achieve similar outputs with less impact? Also, alternatives in construction methods (like different access routes or turbine assembly techniques that might reduce the need for certain big cranes) should be reviewed and considered.

**Policy Context Environmental Impact Assessment** (Regulation 17 (2)(d) of the 2017 Regulations) mandates inclusion of alternatives. Planning Policy Wales also encourages applicants to demonstrate they have chosen an option that minimises environmental harm.

The mitigation hierarchy in environmental management starts with avoiding impact - choosing alternatives is a form of avoidance. If the applicant hasn't done this exercise, it is a weakness in the application. From a planning perspective, decision-makers need to establish that the chosen proposal is the outcome of careful consideration, not just the first design.

**Required Action - The Environmental Statement** needs a dedicated chapter or section on "Assessment of Alternatives".

**Required Action - Site Selection** The applicant must explain the search area and criteria for site selection. The site selection must address whether constraints (like the presence of sensitive receptors, environmental designations) were weighed.

**Required Action - Layout and Design Alternatives** Provide illustrations or descriptions of alternative layouts considered. If certain turbines (e.g. T15-T19) have been identified as particularly problematic (proximity cluster), the Environmental Statement must state whether removing or relocating them is being examined. If it was and rejected the statement must explain the reasons.

**Required Action - Scale and Height** The statement is silent on the choice of 220 m tip height. Have smaller machines (which might be visually less prominent) been considered and found infeasible, or is the choice driven by technology trends.

**Required Action - Access Route Alternatives** Under alternatives, the applicant must give details of different access routes to the site and how these are being considered (e.g., approaching from north and east vs south) to reduce community impacts, and why has the preferred one been chosen considering the known impact on the community and peat reserves.

**Required Action - "No-Development" Alternative** the Environmental Impact Assessment must include a "do nothing" alternative (i.e., not building the wind farm) to illustrate environmental conditions if the project doesn't proceed. The Environmental Statement must include this for completeness, noting foregone renewable energy generation but maintained baseline environmental conditions.

This is the preferred option of the local Llanfihangel Nant Bran community as expressed overwhelmingly at non statuary consultation and subsequent communications.

**Required Action - EIA Scoping Direction** It is requested that Planning and Environment Decisions Wales emphasise the requirement for a robust and transparent assessment of reasonable alternatives within the EIA Scoping Direction. This is particularly important given that the proposed Garreg Fawr Energy Park does not fall within a pre-assessed area for large-scale wind energy development, as defined under Policy 17 of Future Wales - The National Plan 2040 (Welsh Government, 2021).

In the absence of a pre-assessed designation, a thorough appraisal of site selection, design evolution, and alternative configurations is essential to demonstrate that the proposal represents the most appropriate and environmentally sustainable option. This should include clear justification for the chosen site relative to other potential locations, an evaluation of landscape and environmental constraints, and consideration of alternative technologies or layout designs that could reduce adverse effects.

A detailed alternatives assessment is fundamental to ensuring compliance with Schedule 4, Paragraph 2 of the Environmental Impact Assessment (Wales) Regulations 2017, which requires applicants to outline "a description of the reasonable alternatives studied… and an indication of the main reasons for the choice made, taking into account the environmental effects."

PEDW should therefore require that the applicant's Environmental Statement clearly evidences this process, ensuring that both consultees and decision-makers can understand the rationale for the site selection and evaluate whether the proposed development accords with national policy objectives for sustainable energy planning and environmental protection.

### Consideration of Alternatives - Conclusion

By exploring and detailing alternatives, the Environmental Statement should provide a narrative that the project has been refined to lessen impacts, which can be important in the planning balance.

The same explanation may also help address public concerns by showing that, for instance, the most contentious turbine array near Llanfihangel Nant Bran maybe moved or deleted unless there is a compelling reason not to. The desire to pursue profit is not a compelling reason.

The Scoping Direction must explicitly demand this, otherwise there's a risk the Environmental Statement will skim over the aspects which are crucial to residents.

## 17. Document Transparency and Consultation, DNS and SIP

The Scoping Report in its current form exhibits a lack of transparency in documentation and raises concerns about how key information is being shared with consultees and the public. Several points fall under this theme:

**Lack of Internal Consistency and Clarity** The document makes general assertions (e.g. “no significant effects expected” in certain topics) without supporting or substantive evidence or with inconsistent reasoning. For instance, it lists baseline studies but doesn’t attach any data or detailed methodologies, making it hard to verify the adequacy of those studies.

As a result, consultees are asked to accept the applicant’s conclusions on trust. The scoping report should clearly reference any preliminary findings or technical appendices (like accurate meeting minutes, survey reports) - in this case, some meeting minutes are referenced but not provided in full or are inaccurate and misleading.

This reduces the ability of consultees to comment meaningfully. A formal complaint has been submitted and acknowledged by PEDW on 8 October 2025 - and for transparency the text is reproduced below.

*Dear Sir / Madam,*

*I am writing to instigate a formal complaint to require a correction in relation to minutes of scoping meeting which took place on 18th June 2025 entitled Project Inception Meeting with Planning and Environment Decisions Wales (PEDW) for Garreg Fawr Energy Park (GFEP) between 13:00 and 14:00.*

*Significant attendees were.*

*Hannah Roberts - Casework Team Leader PEDW*
*Robert Sparey - Planning & Environment Manager PEDW*
*Emily Saunders - Bute Energy*
*Dafydd Williams - Bute Energy*

*Plus, four other individuals from Natural Power and Savills.*

*I understand the PEDW published complaints procedure relates to post decision appeals, but there is an opportunity to raise "Administrative Complaint" outside of the published independent process.*

*My complaint relates to a factual inaccuracy in Item Six - Community Engagement where Emily Saunders is quoted as saying "ES noted the project will provide biodiversity net benefit". This is the point of contention.*

*The basis of my complaint is that this statement is "a premature and an unsubstantiated claim" at scoping and effective skews the minutes in the favour of the applicant - it is not a neutral or factual statement and requires redaction from the minutes and written correction at the next meeting.*

*Net Benefit for Biodiversity (NBB) in Wales requires the stepwise hierarchy (avoid → minimise → mitigate → compensate) and demonstrable net enhancement, evidenced by surveys and deliverable measures.*

*Declaring NBB before surveys and design are fixed is premature. PPW12 requires a Green Infrastructure Statement that evidences the hierarchy and NBB; this cannot be credibly concluded before scoping without final ecology data including peat mapping, biodiversity analysis and long-term management commitments.*

*I look forward to your reply.*

*Gary Smith CFIOSH FRSH*

**Lack of Mitigation in Baseline (Pre-mitigation vs Post-mitigation)** It appears the Scoping Report implies that certain "embedded mitigation" measures will mean effects are not significant, effectively subverting mitigation into the project description. For example, saying "turbines will be micro-sited to avoid deep peat" or "we will use best practice for X, so impact is minimal" - but without details. If the applicant treats those aspects as given, the real baseline impact is obscured.

Best practice in Environmental Impact Assessment is to first identify impacts before mitigation, then present mitigation and assess residual impacts. This approach in the provided Scoping Report obviates this detail.

This is a transparency concern because stakeholders need to understand the raw impact potential as well as the effectiveness of mitigation. Consultees require correction so that the Environmental Statement clearly distinguishes between inherent design features and additional mitigation and evaluates each explicitly.

**Lack of Consultation and Engagement** The scoping material does not summarise any consultation with local communities (aside from the statutory scoping process itself). Given the level of local interest, we would expect the applicant to commit to ongoing dialogue, maybe mention a liaison group or meaningful public exhibitions held.

Feedback on the non-statutory consultation has been alarming with reports of "heavy handed" and a "bullying" security presence, "lack of transparency" and "a failure to answer any significant and meaningful questions".

Transparency in this process is essential.

Concerns have been raised regarding the accessibility and tone of public consultation events; the Environmental Statement should document consultation feedback transparently.

Planning and Environment Decisions Wales's Scoping Direction should encourage the applicant to continue proactive engagement as the Environmental Impact Assessment progresses but be mindful of the local community and be open and honest with removal of the police and security guards at drop-in meetings which hinders natural conversation.

**Lack of Documentation of Sources and References** I note that the Scoping Report lists many policies and guidelines (Planning Policy Wales, Local Development Plan, etc.) but doesn't connect them to specific assessments. The Environmental Statement should include a compliance table, or a narrative of how the project measures up to each relevant policy test.

There is an absence of sufficient transparency within the applicant's submission to enable consultees and decision-makers to undertake a robust and reasoned assessment of the development's compliance with applicable legal and procedural requirements.

A matrix that cross-references, for example, Planning Policy Wales renewable energy sections, Future Wales - The National Plan 2040 (Welsh Government, 2021) policies 17 and 18, and local Powys Local Development Plan policies against the findings of the assessment (landscape, ecology, community, etc.) is required.

Currently, we must infer compliance - it's essential these are made explicit. Likewise, all technical assumptions (e.g. noise prediction model parameters, visual model parameters) must be clearly stated in the Environmental Statement.

**Lack of Adherence to Planning Guidance and Established Best Practice** Planning and Environment Decisions Wales's own guidance for Developments of National Significance applications and Planning Policy Wales emphasise that applications should be "front-loaded" with information and that the environmental information should be accessible to the public.

The new Welsh language Standards and the Well-being of Future Generations Act also point towards inclusive, transparent processes. Ensuring the Environmental Statement is user-friendly and all claims are evidenced also falls under this ethos.

Regulation 17 of the Environmental Impact Assessment Regs also requires the Environmental Statement to include an outline of the "main uncertainties" or difficulties in compiling information.

The Scoping Report hasn't identified any uncertainties, which itself is worrying (there are certainly uncertainties - e.g., will certain surveys complete in time, or limits of predictive methods).

A transparent Environmental Statement should acknowledge those.

**Communications and Digital Connectivity** The proposed development area supports several critical communication systems, including community-operated microwave broadband links, mobile networks, and defence and emergency service infrastructure. The introduction of tall turbine structures within this upland landscape has the potential to interfere with line-of-sight transmission and affect the reliability of these systems.

Given the area's reliance on wireless and microwave-based technologies for broadband access, welfare connectivity, and operational communication, any degradation of signal quality or stability will have implications for residents, emergency coordination, and military operations.

The potential for such interference is therefore an important consideration within the overall assessment of the project's cumulative and infrastructural effects.

**Required Action - Scoping Direction** We request that the Scoping Direction advise or require the following to improve document transparency:

**Required Action - Clear Structure & Indexing** the Environmental Statement should be well-structured with numbered sections corresponding to each discipline and a comprehensive table of contents and glossary. It should include an introduction that outlines the assessment team's expertise and a statement of competency (required by Environmental Impact Assessment Regs).

**Required Action - Internal Consistency Checks** The applicant should ensure that data presented in one chapter (e.g., number of houses within X distance, or turbine coordinates) is consistent wherever it appears. Any changes (if, say, the design evolves during Environmental Impact Assessment) should be updated globally in the documents to avoid confusion.

**Required Action - Full Disclosure of Data** All baseline data that underpins significance conclusions should be either in the Environmental Statement or in an appendix. For example, if 100 peat probes were done, the revised report must include the data and map. If bird surveys recorded 5 hen harrier flights, it must be identified. This transparency will allow peer review by consultees which is lacking in the document provided.

**Required Action - Mitigation Commitments Register** The applicant should be directed to provide a table in the Environmental Statement listing all mitigation measures committed, with clear wording (e.g., "We will do X to achieve Y outcome"). This avoids vague statements that are not enforceable. Mitigation is entirely missing from the Scoping Report this is a major omission.

**Required Action - Consultation Report** Although more relevant at the Developments of National Significance application time, even the scoping stage feedback and how it was addressed should be tracked. We request the applicant include in the Environmental Statement a section summarising scoping responses received (from statutory consultees and the community) and how the project responded to each point. This closes the loop and shows a transparent consideration of input.

**Required Action - Non-Technical Summary** Ensure the Non-Technical summary is an accurate reflection of the Environmental Statement and not truncated superficial overview. It must candidly state significant adverse effects, as well as the benefits, in plain language. This is the document many residents will read.

**Required Action - Public Participation and Data Portability** To uphold the principles of transparency, continuity, and public engagement through the transition from the Developments of National Significance (DNS) regime to the Significant Infrastructure Projects (SIP) framework, all consultation responses, datasets, and records generated under DNS must be automatically transferred, published, and retained within any subsequent SIP case file.

This approach ensures that community representations, technical submissions, and baseline evidence collected under DNS are not disregarded, superseded, or treated as obsolete, thereby maintaining procedural integrity and protecting the participatory rights established under the original process.

To reinforce transparency and accountability.

- The applicant and PEDW must formally acknowledge the statutory portability of DNS consultation data into the SIP regime, consistent with the obligations under the Infrastructure (Wales) Act 2024 and the Well-being of Future Generations (Wales) Act 2015.
- All transferred materials should remain publicly accessible online in both English and Welsh, accompanied by plain-language summaries to facilitate inclusive participation.
- A bridging Community Consultation Strategy should be mandated to ensure that residents, stakeholders, and statutory consultees remain continuously informed and engaged throughout the DNS→SIP transition, aligning with the principles of Planning Policy Wales (Edition 12) and Future Wales: The National Plan 2040.

These measures collectively safeguard transparency, continuity of evidence, and public confidence in the environmental assessment process as Wales adopts the new SIP framework.

**Required Action - Environmental Information Requirements under SIP** To meet the anticipated evidential standards of the Significant Infrastructure Projects (SIP) regime, the Environmental Statement (ES) must, as a minimum, provide comprehensive and quantifiable coverage of the following topic areas:

- Whole-lifecycle carbon accounting, encompassing embodied emissions in concrete, steel, transport logistics, operation, maintenance, and decommissioning, in line with the principles of Net Zero Wales (Carbon Budget 2) and TAN 12: Design.
- Hydrological impact modelling addressing potential effects on groundwater, aquifers, boreholes, and private water supplies, supported by source-pathway-receptor analysis and long-term risk characterisation.
- Cumulative impact assessment across all Bute Energy / Green GEN Cymru developments in Mid Wales, demonstrating compliance with the Environmental Assessment (Wales) Regulations 2017, Regulation 5(4)(b) concerning combined and synergistic effects.
- Public health impact assessment, incorporating quantifiable data for low-frequency noise, amplitude modulation, vibration, and infrasound, with reference to WHO Environmental Noise Guidelines (2018) and Public Health Wales advisory standards.
- Peat-carbon balance assessment, quantifying net greenhouse gas (GHG) release from peat disturbance, oxidation, and restoration, consistent with the Welsh Peatland Action Plan (2020).
- Socio-economic evaluation covering tourism, property values, employment, and community well-being, aligned with the Well-being of Future Generations (Wales) Act 2015 and Future Wales: The National Plan 2040.
- Cultural landscape and heritage assessment of the Epynt uplands, addressing historic land use, linguistic identity, and intangible cultural value, consistent with Cadw guidance and TAN 24: The Historic Environment.

PEDW should expressly require that the ES demonstrates full compliance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, as well as any forthcoming SIP procedural guidance on lifecycle emissions, hydrological integrity, and transboundary environmental effects.

**Required Action - Cumulative Impacts under SIP** Given that the applicant controls and promotes multiple large-scale renewable energy projects across Powys and Mid Wales, the Scoping Direction must explicitly require the establishment of a regional cumulative-effects assessment framework. This framework should address combined and interactive impacts on traffic and transport networks, grid and transmission infrastructure, hydrological systems, and landscape character and visual coherence.

Such a regionalised approach is essential to ensure that ecological, hydrological, and socio-economic impacts are evaluated collectively, rather than as isolated or site-specific effects. This aligns with Regulation 5(4)(b) of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017**,** which mandates consideration of cumulative and synergistic interactions between concurrent developments.

Failure to assess cumulative effects at the SIP stage would represent a material procedural deficiency as outlined by EIA precedents and would undermine the validity of any subsequent Environmental Statement. PEDW should therefore confirm that cumulative assessment is treated as a core requirement within the SIP environmental information framework, with appropriate cross-referencing between related project applications to ensure transparency, comparability, and compliance with both Welsh and UK environmental assessment obligations**.**

**Required Action - Communications and Digital Connectivity** In addition to cumulative environmental and infrastructure effects, consideration must be given to the potential impact of the proposed Garreg Fawr Energy Park on local and regional communications systems.

Independent studies, including Ofcom's *Tall Structures and Fixed Links* guidance and research published in *Renewable and Sustainable Energy Reviews* (Science Direct, 2014), demonstrate that large wind turbines can interfere with line-of-sight communication systems such as radio, television, radar, and broadband. These effects arise from physical obstruction, reflection, and scattering of signals.

The proposed Garreg Fawr site lies within a remote upland area where many households and small businesses depend on mobile coverage and a fixed wireless broadband service delivered through a community microwave relay network. This system operates entirely on 'line-of-sight' connections between transmitters and user premises.

The introduction of turbine structures within these transmission corridors has the potential to cause signal shadowing or reflection, leading to degraded broadband speeds or loss of connectivity.

At the northern boundary of the development area, there are also two key communication installations:

- An Airwave mast providing emergency and military communication coverage across the region.
- A radio mast serving the Sennybridge Training Area, supporting range safety communications for live-firing exercises and radar and drone testing.

Given these sensitivities, the Environmental Statement must include a detailed telecommunications and microwave-path impact assessment, undertaken in consultation with Ofcom, Airwave, the Home Office, and the Ministry of Defence.

The applicant must also demonstrate:

- How continuity of mobile and broadband services will be maintained for residents and businesses.
- That emergency service and military communications will not be compromised.
- What mitigation measures (such as path re-routing, signal repeaters, or additional relay nodes) will be implemented prior to construction.

This matter falls directly within the requirements of *Planning Policy Wales* (Edition 12, Section 5.4: Infrastructure and Services), which seeks to ensure that new development safeguards existing telecommunications and digital networks. The assessment should therefore be treated as part of the cumulative environmental evaluation and as a component of infrastructure resilience and public-safety assurance.

**Required Action - Policy Alignment and Accountability** Within the Significant Infrastructure Projects (SIP) regime, the applicant should provide quantified and verifiable evidence demonstrating the project's contribution to national and statutory objectives, including:

- National carbon budgets and biodiversity enhancement targets, as outlined in Net Zero Wales (Carbon Budget 2) and the Nature Recovery Action Plan for Wales.
- The Well-being of Future Generations (Wales) Act 2015, showing alignment with its well-being goals and principles of long-term, preventative, and collaborative decision-making.
- The Environment (Wales) Act 2016, including the Section 6 duty to maintain and enhance biodiversity and support the resilience of ecosystems.
- Environmental monitoring data, mitigation outcomes, and post-consent reports should be independently verified, publicly accessible, and deposited with Natural Resources Wales to maintain transparency and accountability.

Any reduction in data availability, restriction of baseline information, or incomplete transfer of environmental records from the DNS process into SIP would indicate a lack of compliance with established environmental governance standards and weaken public confidence in the integrity of the assessment process.

**Required Action - Transitional Safeguards** To maintain the integrity of the Environmental Impact Assessment process throughout the transition from the Developments of National Significance (DNS) regime to the Significant Infrastructure Projects (SIP) framework, the following safeguards should be applied:

- The Garreg Fawr Scoping Direction should clearly state that its provisions will continue to apply under the SIP regime.
- PEDW and the Welsh Ministers should confirm that all baseline datasets, cumulative assessments, and mitigation requirements established under DNS remain valid and enforceable following the transition.
- The applicant should provide written assurance that no changes to the agreed scope, consultation boundary, or assessment methodology will be made without prior notification, public disclosure, and PEDW approval.

These measures are intended to ensure procedural consistency, preserve transparency, and maintain accountability across both consenting systems.

**Required Action - Maintaining Procedural Integrity Through Transition** PEDW and the Welsh Government should jointly confirm that all consultation feedback, baseline studies, and scoping requirements established under the Developments of National Significance (DNS) process remain valid and enforceable within the Significant Infrastructure Projects (SIP) framework, with no reset of statutory timeframes or evidential thresholds.

The procedural and legal integrity of the DNS Scoping Direction should be maintained in full through the transition to SIP, ensuring that public submissions, environmental safeguards, and statutory assessment duties retain their standing and continue to inform the determination process under the new regime.

**Document Transparency and Consultation - Conclusion** In conclusion, a culture of transparency should pervade the project's Environmental Impact Assessment. The Scoping Report's current shortcomings (lack of detailed evidence, relying on unspecified mitigation, etc.) should be rectified.

We urge Planning and Environment Decisions Wales to highlight these issues in the Scoping Opinion.

The credibility of the Environmental Statement and the Developments of National Significance process depend on clear, evidence-backed information being made available to all stakeholders in a timely manner.

## 18. Decommissioning - Inappropriate Scoping Out of Long-Term Effects

The exclusion of decommissioning impacts from the Environmental Impact Assessment is technically unjustified and does not align with the requirements of the Environmental Impact Assessment (Wales) Regulations 2017 or with Welsh Government expectations under Planning Policy Wales (Edition 12).

The Scoping Report assumes that potential effects during decommissioning will be negligible or comparable to those experienced during construction. This assumption is methodologically unsound, given the substantial uncertainty associated with predicting environmental baselines four decades into the future.

Over a projected operational period of 35-40 years, there will be significant changes in baseline environmental conditions, site hydrology, soil structure, ecological communities, land use, and regulatory standards. These dynamic changes render it technically inappropriate to extrapolate current environmental data or mitigation strategies several decades into the future. Specific examples include:

**Hydrogeological evolution** Groundwater flow regimes within the St. Maughans Formation and associated drift deposits may alter because of cumulative climate and land use change, increasing uncertainty around dewatering, slope stability, and contaminant migration during decommissioning.

**Geomorphological and geotechnical uncertainty** Long-term settlement and weathering of turbine foundations and infrastructure could create instability or differential loading that complicates removal and reinstatement, elevating risk to downstream receptors.

**Ecological succession** Areas reinstated post-construction are likely to undergo significant habitat succession, potentially supporting protected or priority habitats (e.g., peat-forming communities, heathland, or rough grassland supporting Section 7 species). Disturbance of these habitats during decommissioning could generate new and unassessed ecological impacts.

**Pollution and materials risk** Decommissioning will involve the management of hazardous materials, such as turbine oils, hydraulic fluids, concrete residues, and composite blade waste. Waste classification and disposal legislation may have evolved substantially, requiring assessment under future environmental protection regimes.

These uncertainties mean that scoping out decommissioning effectively defers environmental responsibility and conflicts with the precautionary principle embedded in the EIA framework.

The EIA must therefore include a "Decommissioning Impact Assessment Framework", establishing a baseline understanding of likely impacts and a mechanism for adaptive management as conditions change.

**Required Action - The Environmental Statement** should therefore include:

1. A conceptual Decommissioning and Site Restoration Plan (DSRP) identifying key activities, material quantities, and environmental receptors at risk.
2. A high-level impact assessment addressing hydrology, hydrogeology, soil integrity, ecological disturbance, and waste management.
3. A commitment to periodic technical review (e.g., every 10 years or at major repowering stages) to update decommissioning assumptions in line with evolving legislation, climate projections, and environmental monitoring data.
4. The definition of performance indicators and monitoring parameters for groundwater levels, spring flows, and habitat condition to inform decommissioning design; and
5. Specification of contingency and remediation protocols in the event of unforeseen deterioration or pollution events during decommissioning.

Failure to address decommissioning as a scoped-in topic would be inconsistent with Schedule 4, Paragraph 5 of the EIA (Wales) Regulations 2017, which explicitly requires assessment of expected significant effects "during construction, operation and decommissioning phases." PEDW precedent (e.g., Mynydd Ty-talwyn Wind Farm, 2022; Alwen Forest Wind Farm, 2021) confirms that decommissioning must remain within scope to ensure that the EIA captures the full lifecycle environmental risks of large-scale renewable energy infrastructure.

Accordingly, it is recommended that PEDW require decommissioning impacts to remain within the scope of the EIA, supported by a structured monitoring and review framework that ensures technical accuracy and regulatory compliance over the project lifespan.

## 19. Accountability

In addition to the technical and environmental considerations outlined above, accountability and verification are central to ensuring that the Environmental Statement process is transparent, evidence-led, and capable of independent validation.

We acknowledge the statutory independence and professional standards maintained by Planning and Environment Decisions Wales (PEDW) and welcome the opportunity to contribute to the scoping of the proposed Garreg Fawr Energy Park.

The following procedural recommendations are proposed to strengthen data integrity, enhance auditability, and support informed decision-making by Planning and Environment Decisions Wales and statutory consultees.

Given the scale of the proposed development and its potential classification as a Special Infrastructure Project, the following steps would provide a consistent and objective framework for quality assurance:

- Independent verification of key datasets and methodologies, commissioned and funded by the developer but undertaken by an independent and suitably qualified third party. The verification report should be made available to PEDW and statutory consultees to confirm the completeness, accuracy, and reliability of baseline data and impact assessments.
- Structured stakeholder engagement to inform the verification process, following recognised assurance protocols such as ISAE 3000 (Revised, 2013) and AccountAbility AA1000AS v3 (2020). This ensures that relevant local knowledge, field observations, and community inputs are captured and reflected within the data collection and analysis phases.
- Declaration of relevant interests by all organisations and consultants contributing to the Environmental Statement, including any financial or contractual relationships with the developer, to maintain procedural transparency and ensure objective assessment of findings.
- Quality review of risk and mitigation assessments, particularly those concerning environmental protection, hydrology, biodiversity, and human health. Verification of modelling assumptions, input parameters, and sensitivity analyses would enhance confidence in the robustness of conclusions drawn.

These procedural measures are consistent with established assurance frameworks and align with the guidance principles outlined in Audit Wales' Wales Infrastructure Investment Strategy (May 2025).

Incorporating such verification steps within the Environmental Statement process would help ensure that the evidence submitted to Planning and Environment Decisions Wales meets a verifiable standard of accuracy and completeness, thereby facilitating a more efficient and reliable planning determination process.

The implementation of these procedural safeguards would also provide a clear, auditable chain of evidence for all data used within the Environmental Statement, reinforcing transparency and accountability throughout the assessment process.

## 20. Conclusion

This joint submission seeks to assist PEDW by identifying areas where the Environmental Scoping Report could be refined to meet current Welsh environmental assessment and planning standards. It does not seek to oppose renewable energy development in principle, but rather to ensure that assessment and consultation are comprehensive, transparent and technically robust.

To achieve this, it is recommended that the final Scoping Direction:

- Confirms the need for a defined and fixed project envelope that represents the realistic worst-case parameters of the scheme.
- Ensures that all relevant environmental and socio-economic receptors—including human health, agriculture, tourism and recreation, and night-time amenity—are retained within the scope of the EIA.
- Requires completion of full baseline datasets for ecology, hydrology, peat and soil to recognised NRW and CIEEM standards.
- Incorporates grid connection and ancillary works within the cumulative assessment framework.
- Reaffirms adherence to recognised professional guidance, including the GLVIA3 and NatureScot visualisation standards.
- Maintains procedural integrity and data continuity between the DNS and SIP regimes.

These recommendations reflect established PEDW practice and align with previous determinations for comparable energy projects, including Pen March, Nant Mithil and Lluest y Gwynt.

Adopting this approach will help ensure that the Garreg Fawr assessment is balanced, evidence-led and consistent with national policy objectives for renewable energy, environmental protection and community wellbeing.

By embedding these measures at the scoping stage, the EIA process can proceed with confidence that it meets the high standards of environmental governance expected in Wales and provides a transparent foundation for future decision-making.

## 21. Concluding Remarks

In its present form, the Scoping Report does not provide confidence that the Environmental Statement will fully address all likely significant effects of the proposed Garreg Fawr Energy Park.

Significant aspects of the plan, historic and stakeholder assets, SSSIs and geospatial references have been omitted or contain substantial errors making assessment impossible.

There are material gaps and assumptions that need to be corrected now, at the scoping stage, to avoid issues later in examination. We have identified the key areas above and offered some detailed recommendations.

The overarching themes are the need to define the project unambiguously, to gather complete baseline data, to adhere to policy and best practice guidance, and to engage transparently with the issues and stakeholders.

We trust that Planning and Environment Decisions Wales will incorporate these points into its Scoping Direction to the applicant. The community may be able to assist by providing local knowledge (e.g. known peat bog locations, wildlife location and protected species information, local traffic pinch points, historic features, etc.) to the applicant if engaged properly.

Previous consultation processes with the applicant have raised transparency concerns which should be addressed through the Environmental Statement Consultation Report.

Our goal is to ensure that if this project proceeds to application, the decision is made based on a rigorous, complete, and truthful assessment of its environmental effects, as required by law and policy.

We welcome the opportunity to provide input at the scoping stage. It is essential that the applicant addresses these issues in full within the Environmental Statement.

Failure to do so will compromise the adequacy of the assessment and risk procedural delay, legal challenge, or refusal at a later stage.

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