

16. Climate Change

16.1 Introduction

- 16.1.1 This section considers whether the Proposed Development has the potential to give rise to likely significant effects on climate change, in accordance with the Environmental Impact Assessment requirements applicable to Significant Infrastructure Projects under the Infrastructure (Wales) Act 2024 (Senedd Cymru, 2024), as set out in the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended) (Welsh Government, 2017).
- 16.1.2 Climate change is recognised as one of the most significant global environmental, social and economic challenges and is therefore an important consideration in project-level assessment and decision-making. A major driver of climate change is the emission of greenhouse gases, particularly those associated with the combustion of fossil fuels for electricity generation.
- 16.1.3 The Proposed Development would generate electricity from a renewable source of energy and would therefore contribute to the displacement of electricity generation from fossil fuel sources. As a result, the operation of the Proposed Development has the potential to contribute to reductions in carbon dioxide emissions at a national scale. Against this background, the Climate Change chapter considers, at scoping stage, whether the Proposed Development could give rise to likely significant effects in relation to greenhouse gas emissions and climate resilience, prior to addressing the project-specific screening and scope of assessment.
- 16.1.4 For the purposes of this scoping assessment, ‘climate change’ is considered in terms of (i) greenhouse gas emissions (construction, operation and decommissioning) and (ii) climate resilience/adaptation (the ability of the scheme design and mitigation to remain effective under future climate conditions).
- 16.1.5 The purpose of this section is to inform the scoping process by determining whether climate change requires assessment as a standalone topic within the Environmental Statement (ES), or whether it can be appropriately scoped out on the basis that no plausible pathway to likely significant adverse effects has been identified. Notwithstanding this proposed scoping position, any potential effects on carbon stores (including carbon-rich soils/peat) and any climate resilience considerations (e.g. drainage performance, flood risk and construction-phase pollution control during extreme rainfall) will be assessed, where relevant, within the hydrology, hydrogeology and flood risk topic, and the ecology and biodiversity topic, chapters and secured through embedded design and management measures. In line with established Welsh EIA practice for onshore wind developments, this scoping appraisal distinguishes between:
- climate change as a global process; and

- project-specific environmental effects (such as disturbance of carbon-rich soils and peat, or climate resilience considerations), which are more appropriately addressed within the hydrology, hydrogeology and flood risk assessment (including peat) and the ecology and biodiversity assessment, rather than through a standalone climate change chapter.

16.2 Study Area

- 16.2.1 Climate change is global in nature and does not lend itself to definition of a discrete spatial study area in EIA terms. Accordingly, no standalone study area is defined for climate change. Where climate-related pathways are relevant to other EIA topics, the spatial extent will be defined within those topic assessments (for example: the site boundary plus any off-site works for peat/soils; and the relevant surface water catchments/drainage receiving waters for water environment resilience considerations).
- 16.2.2 Project-specific considerations that may interact with climate change variables, including potential effects on carbon-rich soils/peat carbon stores, and climate resilience (e.g. drainage, flood risk and pollution control under extreme rainfall), will be considered on a site and catchment basis within the hydrology, hydrogeology and flood risk topic and the ecology and biodiversity topic chapters.

16.3 Methodology

- 16.3.1 A proportionate, scoping-level review has been undertaken to determine whether the Proposed Development could give rise to likely significant effects in relation to climate change. The methodology addresses two distinct but related aspects: (i) greenhouse gas emissions arising from the construction, operation and decommissioning of the Proposed Development, and (ii) the resilience of the Proposed Development to future climate conditions, including the ability of embedded mitigation and design measures to remain effective over the lifetime of the scheme.
- 16.3.2 The assessment of the Proposed Development's carbon balance will be undertaken within the Hydrology, hydrogeology and Floodrisk chapter of the Environmental Statement.
- 16.3.3 This approach reflects the close relationship between carbon emissions and sequestration associated with peat disturbance, hydrological change and peat management measures. The carbon balance assessment will draw on site-specific peat depth and hydrological data and will consider the potential carbon implications of peat excavation, reuse and management over the lifecycle of the Proposed Development.
- 16.3.4 The Climate Change chapter therefore relies on the findings of the Hydrology and Peat chapter for the quantification and evaluation of carbon balance effects, rather than duplicating this assessment.
- 16.3.5 The screening of greenhouse gas emissions has been undertaken on a qualitative basis, informed by the nature, scale and duration of construction activities, operational

requirements, and decommissioning works. The review considers the principal sources of emissions, including construction plant and vehicles, material use, and operational maintenance activities, and places these in the context of relevant national climate change policy objectives and targets. At scoping stage, the methodology is focused on identifying whether the magnitude of emissions is such that a detailed quantitative assessment is required within the Environmental Statement, rather than calculating carbon emissions in detail.

- 16.3.6 The assessment of climate resilience and adaptation considers the extent to which the Proposed Development may be exposed to future climate-related risks, such as changes in temperature, precipitation patterns, storm intensity and extreme weather events, over its construction, operational and decommissioning phases. The methodology reviews whether the scheme design, construction practices and embedded mitigation measures are inherently resilient to these risks, and whether their effectiveness could reasonably be expected to be affected by projected future climate conditions.
- 16.3.7 Embedded mitigation and good practice measures that form part of the Proposed Development have been assumed within the scoping methodology, including design standards, construction management controls and operational practices intended to minimise emissions and manage climate-related risks. The role of mitigation at this stage is to inform the screening judgement as to whether climate change effects could be likely and significant, rather than to define bespoke adaptation measures in detail.
- 16.3.8 Cumulative climate change effects have been considered at scoping stage by reviewing whether greenhouse gas emissions associated with the Proposed Development could materially contribute to cumulative emissions at a scale relevant to national or regional climate change objectives, and whether climate resilience risks could be exacerbated by interaction with other relevant committed developments. This cumulative review is undertaken at a strategic level, consistent with the purpose of scoping, to determine whether further assessment is required within the Environmental Statement.

16.4 Baseline Context

- 16.4.1 The baseline context for climate change is defined by the global nature of greenhouse gas emissions, and by Welsh and UK statutory commitments to reduce emissions and to ensure infrastructure is resilient to future climate conditions.
- 16.4.2 In Wales, the Environment (Wales) Act 2016 (National Assembly for Wales, 2016) and the Well-being of Future Generations (Wales) Act 2015 (National Assembly for Wales, 2015) provide overarching legislative context for decarbonisation and climate resilience. These instruments do not, in themselves, require a standalone climate change effects chapter within the ES where the scoping appraisal identifies no plausible pathway to likely significant adverse effects.

- 16.4.3 No site-specific climate receptors are defined for a standalone climate change topic. However, the Proposed Development may interact with carbon-sensitive features such as carbon-rich soils/peat carbon stores. Any potential effects on these features will be assessed within the peat and soils assessment, the ecology and biodiversity assessment and the hydrology, hydrogeology and flood risk assessment, as relevant. At scoping stage, this position is informed by the completed Phase 1 peat survey, with the survey findings used to inform design evolution and the scope of the peat and water environment assessment, which will report the peat survey methodology, results and implications for effects and mitigation.
- 16.4.4 In EIA terms, the baseline is characterised by:
- A planning and policy context in Wales that supports renewable energy delivery, while requiring identification and assessment of any likely significant environmental effects under the EIA Regulations.
 - An existing climate emergency context, including Welsh Government commitments to decarbonisation and associated policy support for renewable energy development.

Policy Context

- 16.4.5 The baseline context for climate change is defined by:
- National and international commitments to address climate change; and
 - Welsh Government policy which recognises renewable energy infrastructure as a key mechanism for climate change mitigation.
- 16.4.6 At the local level, Ceredigion County Council's adopted Local Development Plan provides the planning policy context for climate change, including objectives to support renewable energy development, reduce greenhouse gas emissions and ensure that development is resilient to the effects of climate change. In addition, the County Council has declared a climate emergency and set out commitments to reduce carbon emissions associated with its activities. These local policies and commitments provide relevant contextual background for the assessment of climate change effects, alongside national Welsh climate change legislation and policy. (Council, Ceredigion County, n.d)
- 16.4.7 At a policy level, Planning Policy Wales (Edition 12) (Welsh Government, 2024) and Future Wales: The National Plan 2040 (including Policies 17 and 18) (Welsh Government, 2021) establish support for renewable and low carbon energy development. This policy support does not remove the requirement to identify, assess and, where necessary, mitigate any likely significant environmental effects under the EIA Regulations.
- 16.4.8 The Infrastructure (Wales) Act 2024 (including section 56) (Senedd Cymru, 2024) provides the legislative framework for decision-making on Infrastructure Consent. Section 56 requires the examining authority or Welsh Ministers to have regard to any relevant

Infrastructure Policy Statement designated under section 127 (where applicable), the National Development Framework for Wales (Future Wales: The National Plan 2040) (Welsh Government, 2021) and any relevant marine plan, and to determine applications in accordance with the relevant policy statement/framework/plan unless relevant considerations indicate otherwise. The procedural framework for examination and decision-making is set out in the Infrastructure Consent (Examination and Decision) (Procedure) (Wales) Regulations 2025 (Welsh Government, 2025). This policy and legislative context does not alter the need for a proportionate EIA scoping approach that focuses on plausible pathways to likely significant adverse effects

16.4.9 The legislative and policy framework relevant to climate change includes:

- Planning Policy Wales (PPW) (Welsh Government, 2024), which recognises the need to address the climate emergency and supports renewable energy development;
- Future Wales: The National Plan 2040 (Welsh Government, 2021), including:
- Policy 17 (Renewable and Low Carbon Energy and Associated Infrastructure) (Welsh Government, 2021); and
- Policy 18 (Strategic Energy Planning) (Welsh Government, 2021);
- Section 56 of the Infrastructure (Wales) Act 2024 (Senedd Cymru, 2024); and
- Ceredigion Replacement Local Development Plan (LDP 2 2018 0- 02033) (Council, Ceredigion County, n.d).
- Environment (Wales) Act 2016 (National Assembly for Wales, 2016)
- Well being of Future Generations (Wales) Act 2015 (National Assembly for Wales, 2015)

16.4.10 These documents establish strong national and local policy support for renewable energy development as a means of reducing greenhouse gas emissions and contributing to decarbonisation targets.

Existing conditions

16.4.11 The baseline context for climate change is defined by:

- the global nature of climate change processes; and
- the UK and Welsh Government's statutory commitments to reduce greenhouse gas emissions.

16.4.12 No site-specific baseline receptors are identified for climate change as a standalone topic, as:

- climate is not a receptor in the conventional EIA sense; and

- potential effects are either negligible or addressed through other technical disciplines.

16.5 Embedded mitigation and design assumptions

16.5.1 The Proposed Development incorporates embedded design measures and assumptions that inherently limit potential climate change effects, including:

- no permanent on-site combustion plant is anticipated (noting that any temporary generators required during construction/commissioning or for emergency use would be controlled through the Outline CEMP and would not be expected to give rise to likely significant effects);
- absence of permanent on-site combustion plant;
- design and construction in accordance with established engineering standards; and
- Drainage and flood risk assessments will be undertaken in accordance with Welsh Government policy, the Statutory SuDS Standards for Wales, and Natural Resources Wales guidance. Surface water drainage systems will be designed with an appropriate climate change allowance according to the expected lifetime of the scheme. Exceedance routing will be considered for more extreme events above the design standard. Fluvial flood risk assessments, where required, will utilise NRW flood mapping, including the effects of climate change.

16.5.2 These measures represent the anticipated design basis at scoping stage and will be secured through the final scheme design and associated outline management documentation (including the Outline Construction Environmental Management Plan (CEMP) and drainage/water management and peat/soil management commitments, as applicable).

16.5.3 Climate resilience will be embedded within the scheme design and demonstrated through relevant topic-specific deliverables (including the drainage strategy and water environment assessment, any flood risk assessment where required, and the peat stability risk assessment), with construction-phase controls secured through the Outline CEMP, rather than through a standalone climate change assessment.

16.6 Potential Effects

Construction and Decommissioning

16.6.1 Greenhouse gas emissions would arise during construction and decommissioning from construction plant, vehicles and material transport. These emissions would be temporary, short-term, predictable and typical of large-scale onshore wind developments. In addition to combustion emissions, any potential effects on carbon stores associated with disturbance of carbon-rich soils/peat (where applicable) will be assessed within the peat and soils assessment and the hydrology, hydrogeology and flood risk assessment, rather than through a standalone climate change chapter.

- 16.6.2 Greenhouse gas emissions associated with the construction, operation and decommissioning of the Proposed Development have been considered at scoping stage on a qualitative basis. Such emissions are not anticipated to give rise to likely significant adverse effects in EIA terms because they are temporary or intermittent in nature, do not result in a discrete effect on a sensitive local receptor, and would represent a very small contribution when considered in the context of national and Welsh greenhouse gas emission inventories.
- 16.6.3 At this stage, the quantification of emissions is not considered proportionate, as construction methodologies, plant requirements, material quantities and decommissioning approaches are not yet sufficiently defined to support meaningful or reliable numerical assessment. Relevant emission sources and construction practices will be managed through embedded design measures and standard controls, including those set out within the Outline Construction Environmental Management Plan, and through topic-specific measures relating to traffic, peat and soils, and the water environment where applicable.

Operation

- 16.6.4 There would be no direct greenhouse gas emissions from electricity generation during operation. Any indirect greenhouse gas emissions associated with routine maintenance activities (e.g. staff travel and servicing) are anticipated to be very small and not likely to be significant in EIA terms.

16.7 Scoping Assessment

- 16.7.1 A review of potential climate-related pathways has been undertaken with reference to the EIA Regulations and established Welsh practice for onshore wind developments.
- 16.7.2 Construction and decommissioning greenhouse gas emissions are temporary, limited in scale and reversible. Operational emissions are negligible.
- 16.7.3 Lifecycle greenhouse gas assessments, carbon payback calculations and broader cumulative climate change considerations are not proposed to be assessed as standalone topics within the Environmental Statement, as there is no plausible pathway by which greenhouse gas emissions associated with the Proposed Development could give rise to likely significant adverse effects on climate change in EIA terms.
- 16.7.4 At scoping stage, these matters have been considered through the qualitative climate change screening set out in this chapter, which focuses on identifying potential sources of emissions, their scale and duration, and their relevance in the context of national and Welsh greenhouse gas inventories. Any project-specific effects on carbon stores (including carbon-rich soils and peat) and any climate resilience or adaptation considerations will be assessed, where relevant, within the appropriate technical topics (including peat and soils, and hydrology, hydrogeology and flood risk), rather than through a separate climate change assessment within the Environmental Statement.

- 16.7.5 Climate resilience is addressed through embedded design and other topic-specific assessments, and no standalone climate receptor or pathway for significant effects has been identified.
- 16.7.6 On this basis, climate change is proposed to be **Scoped Out** of the EIA as a standalone topic.
- 16.7.7 A summary of the climate change matters we intend to scope out of this assessment are provided in Table 16.1 below.

Table 16.1 - Matters to be scoped out of the assessment

Matters to be scoped out of the assessment	
Matter	Rationale
Standalone Climate Change ES Chapter	No plausible pathway to likely significant adverse effects identified
Greenhouse Gas Lifecycle Assessment	Not required by EIA Regulations and not proportionate
Carbon Payback Calculations	Policy and energy balance consideration, not an EIA effect
Standalone Climate Change Resilience Assessment	Addressed through design and other topic chapters
Cumulative Climate Change Effects	Climate change effects are considered at a global/inventory level. Given the temporary nature of construction and decommissioning combustion emissions and the absence of direct operational emissions from electricity generation, the Proposed Development is not expected to make a material contribution to cumulative climate change effects in EIA terms. Potential cumulative interactions relating to peat/carbon-rich soil carbon stores (where relevant) will be considered within the peat and soils topic and the hydrology, hydrogeology and flood risk topic.

16.8 Summary of Scoping position

- 16.8.1 On the basis of the information available at scoping stage, the Proposed Development is not expected to give rise to likely significant adverse effects on climate change.
- 16.8.2 Climate change is therefore proposed to be scoped out of the EIA as a standalone topic. Potential greenhouse gas emissions during construction, operation and decommissioning are not anticipated to give rise to likely significant adverse effects in EIA terms. Any potential project-specific effects relating to peat/carbon-rich soil carbon stores and climate resilience will be assessed proportionately within the relevant EIA topics (including peat

and soils, and hydrology, hydrogeology and flood risk), with controls secured through embedded design and outline management measures.

16.9 References

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