Vyrnwy Frankton

Preliminary Environmental Information Report – Non-Technical Summary

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1 Introduction

1.1 The Non-Technical Summary

1.1.1 This document presents the Non-Technical Summary (NTS) of the Preliminary Environmental Information Report (PEIR) which has been produced to inform the public and relevant stakeholders on the preliminary findings of the Environmental Impact Assessment (EIA) process for the Vyrnwy Frankton Project (hereafter referred to as 'the Project').

1.2 Site and Project Description

1.2.1 The Project spans the administrative areas of Powys County Council in Wales and Shropshire Council in England. It will commence at the 132kV Grug y Mynydd Collector Substation, Powys, and will include the installation of electrical switchgear and associated equipment.

1.2.2 A 132kV Underground Cable (UGC) will extend from the Grug y Mynydd Collector Substation, through the proposed Llyn Lort Energy Park (a separate project being proposed and consented by Bute Energy Ltd) for approximately 4.8km before connecting to a new Cable Sealing End Compound (CSEC) near Cors y Carreg. The CSEC will require the installation of electrical equipment and a gantry.

1.2.3 The proposed 132kV overhead line (OHL) will then travel in a north-easterly direction for approximately 45km through the Vyrnwy Valley, supported on steel lattice towers with an average height of 28.5m. The 132kV OHL will then connect to a new Switching Station which includes installing electrical equipment and a gantry near Lower Frankton in Shropshire. This will allow for connection to the new substation near Lower Frankton, which is being proposed and consented separately by National Grid.

1.2.4 In addition, third-party utility diversions and/or modifications will be required to facilitate the construction of the Project which will cross existing 132kV and lower voltage OHLs, the Shrewsbury to Chester railway line and the Montgomery Canal.

1.2.5 The Project will require permanent utility infrastructure during the operation and maintenance phases of the Project which will include drainage and lighting

associated with the Grug y Mynydd Collector Substation, UGC, Cors Y Carreg CSEC, OHL, and Lower Frankton Switching Station. Maintenance access roads will also be required.

1.2.6 There will also be land required for mitigation, compensation and enhancement of the environment including Biodiversity Net Gain (BNG) which will also align with the requirements for Net Benefits for Biodiversity in Wales.

1.2.7 As well as the permanent infrastructure, land will be required for temporary construction activities, including access tracks and construction compounds which will provide locations for the storage of construction materials, equipment, machinery, and secure locations for site offices and staff welfare provision.

1.2.8 It is estimated that the construction phase will take approximately two years in total (from Q4 2027 to Q4 2029).

1.3 The Applicant

1.3.1 Green Generation Energy Networks Cymru is the Applicant for the Project. Their aim is to provide clean energy to various locations and support government targets for zero emissions. Additionally, the Applicant seeks to tackle energy and climate challenges while boosting rural communities with investments and job opportunities.

1.4 The Development Consent Order (DCO) Process

1.4.1 The Project constitutes a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. The Applicant must, therefore, make an application under the Planning Act 2008 for permission known as a Development Consent Order (DCO) to construct and operate the Project.

1.4.2 The application for development consent will be submitted to the Secretary of State (SoS), who will examine the application through appointed inspectors from the Planning Inspectorate, known as the Examining Authority. The Examining Authority will make a recommendation to the SoS on whether an application for development consent should be granted for the Project. The SoS will make the final decision.

1.5 Environmental Impact Assessment

1.5.1 The purpose of an EIA is to identify the potential environmental impacts from a development and then propose the means to avoid and reduce the impacts. This information is then presented in an Environmental Statement (ES) to assist in this case the Examining Authority in the decision-making process.

1.5.2 Assessments are made on the significance of an effect on a wide range of receptors, including physical, biological and human, and mitigation measures are proposed to reduce any significant effects.

1.5.3 This PEIR presents a snapshot in time of how the EIA is progressing and presents an early indication of significant effects.

1.5.4 The PEIR is presented in three volumes, including:

- Volume 1 – Main Report.
- Volume 2 – Figures.
- Volume 3 – Appendices.

1.5.5 This document is a non-technical summary of the PEIR.

1.6 Consultation

1.6.1 The Applicant is consulting on its proposals for the Project so that feedback from stakeholders and communities can be considered in the decisions made on the Project.

1.6.2 The Applicant submitted a request for a Scoping Opinion to the Planning Inspectorate on 23 January 2024 to seek an opinion on the scope and level of detail of the information to be included in the ES as part of the DCO application. A Scoping Opinion was provided to the Applicant on 20 May 2024 by the Planning Inspectorate on behalf of the SoS. The comments and recommendations contained within the Scoping Opinion have been incorporated into the EIA process.

1.6.3 The Applicant is delivering a two-stage consultation process.

- Stage One: A non-statutory consultation on emerging proposals. Non-statutory consultations are not legally binding, but there are agreed best practices to ensure a good quality consultation is completed.

- Stage Two: A statutory consultation on a developed design together with preliminary environmental assessments. Statutory consultations are bound by legal requirements, in this instance The Planning Act 2008.

Stage One Consultation

1.6.4 The Applicant undertook the first stage of consultation (non-statutory consultation) between 6 September and 18 October 2023. This consultation included stakeholder notification and briefings, community webinars, and public events in the communities closest to the Project. The consultation asked for feedback on the following:

- The proposed search area for the collector substation and cable sealing end compound in Powys; and
- The preferred route for the connection through Powys and Shropshire.

Stage Two Consultation

1.6.5 The second stage (statutory consultation), of which this PEIR is an important component, is taking place in Spring 2025 to obtain feedback on the following:

- The proposals for the Grug y Mynydd Collector Substation, the Cors y Carreg CSEC, and the Lower Frankton Switching Station including indicative layouts.
- The proposals for the Underground Cable Route (UGC) within the proposed Llyn Lort Energy Park.
- The proposed route for the overhead line connection including sites for the infrastructure required.
- Proposals for associated land use during construction, such as lay down areas.
- Preliminary environmental information associated with the proposals at this stage.

1.6.6 In addition to responding to Statutory Consultation feedback, the Applicant will continue to engage with the relevant consultees through meetings and targeted discussions, where appropriate, throughout the development of the ES and up to and including the application for development consent.

1.7 Scope of the Environmental Impact Assessment

1.7.1 Following the receipt of the Scoping Opinion, the following topics have been scoped into assessment for the PEIR and will also form the scope of the assessment for the ES.

1.7.2 The technical topic chapters presented in this PEIR are:

- Landscape and Visual Amenity.
- Ecology.
- Ornithology.
- Historic Environment.
- Traffic and Transport.
- Noise and Vibration.
- Water Resources.
- Ground Conditions, Geology and Hydrogeology.
- Air Quality.
- Soils and Agriculture.
- Health and Wellbeing.
- Major Accidents and Disasters.
- Greenhouse Gas Emissions.
- Socio-economics.

1.7.3 The topics relevant to the EIA process have been assessed in this PEIR (Chapter 6 to Chapter 19) and the key findings are summarised in this NTS.

2 EIA Methodology

2.1 General Impact Assessment Approach

2.1.1 The EIA process follows a receptor-based approach. Receptors are those aspects of the environment which may be sensitive to change because of the Project. The effects on receptors can be adverse (negative), neutral (neither negative nor positive) or beneficial (positive). Effects may also be permanent (irreversible) or temporary (reversible) and direct or indirect.

2.1.2 The interaction between the sensitivity or importance of a receptor and the potential scale of the impact produces the 'significance' of the environmental effect which ranges from 'negligible' to 'major'. The description of the impact assessment methodology adopted for the Project is set out in each technical chapter of the PEIR.

2.1.3 Where a 'significant' adverse effect is predicted on one or more receptors (usually an effect that is predicted to have a major or moderate adverse effect), mitigation measures are identified, to avoid or reduce the effect identified, or to reduce the likelihood of occurrence as far as practicable. With mitigation in place, the 'residual impact' is assessed, which is the predicted significance of the effect after the implementation measures have been applied.

2.1.4 Cumulative effects of the Project with other developments, as well as the combined effect of different types of environmental effects of the Project on the same receptors, are also considered in the PEIR.

2.2 Approach to Mitigation

2.2.1 The Applicant has ensured that the design of the Project avoids or reduces environmental effects on receptors where possible. Several measures have been incorporated into the concept design to avoid or minimise environmental impacts. These measures include those required for legal compliance and also include current industry best practice guidance which will be adopted during construction and operation of the Project. The three types of mitigation that have been incorporated into the Project and preliminary assessment include: embedded, good practice, and essential mitigation.

2.2.2 Environmental mitigation measures have been defined within each topic chapter in the PEIR. Any opportunities for environmental enhancement over

and above essential mitigation measures (if required) and BNG will be described within the ES.

2.2.3 The construction mitigation measures recommended during the EIA process will be reported in an Outline Construction Environmental Management Plan (OCEMP) which will accompany the ES and the DCO application.

2.3 Next Steps

2.3.1 Following on from the PEIR and NTS, the final assessment will be presented within the ES submitted with the DCO application.

3 Consideration of Alternatives

3.1.1 An ES should document the reasonable alternatives considered as part of the Project's development and an indication of the main reasons for selecting the option chosen.

3.1.2 As part of the iterative design process, a number of options were identified for the Project, which took into consideration technical and environmental constraints (see PEIR Volume 1: Chapter 3).

3.1.3 A summary of the key findings from this iterative process is outlined below in Table 1.

Table 1 – Alternatives Considered

Scenario	Description	Findings
'Do Nothing' Scenario	A 'do nothing' scenario will not take forward any development proposals associated with the Project.	There will be no new electrical infrastructure between the proposed Energy Parks and the National Electricity Transmission System (NETS). As such, a do nothing option is not a credible solution and is not considered further.
Strategic Option Development	The Applicant's Phase Two Grid Connection Strategy assessed and considered ten potential connection options, within three geographical regions. In each geographical zone, potential 'new substation' locations were identified based on either the shortest route length and/or the ability to avoid nationally designated sites.	The North Zone, Option 4 (Lower Frankton – New substation) was the preferred option as the grid connection option for the Mid Wales Energy Parks. This option was selected as it was the best performing with regard to environmental considerations and the need to deliver an economic and efficient solution.
Underground cables and overhead lines	The Applicant has considered an entirely underground solution for the connection instead of an overhead line.	An entirely underground solution for the connection was deemed economically unviable, increasing the time taken to complete the Project, and increasing the ecological impacts during the construction phase. This will mean that the Applicant will not be complying with its obligations as a licence holder to be economic and efficient. However, the Applicant understands that in certain circumstances, it may be necessary to underground a section of the Project, although, this must be consistent with a balance between technical and economic viability, deliverability and environmental considerations

Scenario	Description	Findings
Supporting Structures	The Applicant has considered the different structures available to support OHL conductors (wires) that can operate at 132kV.	The Applicant has determined that L7 steel lattice towers strike the right balance in terms of deliverability, economic viability, efficiency and likely environmental impacts when compared to L8 towers or wood poles. L8 towers are typically used for 275kV or 400kV lines which makes them unsuitable for the proposed 132kV connection. The L7 steel lattice towers will also provide sufficient flexibility to deliver green energy to Wales in the short and longer term.
Corridor Identification and Selection	The selection of the preferred corridor consisted of several steps including identification of study area, Mapping and Routeing Considerations, Identification of Corridors, and Appraisal of Corridors.	Based on the balance of all the criteria, Corridor Option one was selected as it was the shortest corridor, it is the preferred option in relation to landscape and visual amenity and cultural heritage, and it contains the smallest area of Best and Most Versatile agricultural land common land, open green space and committed development.
Route Option Identification and Selection	Once the preferred corridor had been identified, potential routes were identified to link the proposed the proposed Cors y Carreg Cable Sealing End Compound (CSEC) location, adjacent to the Llyn Lort Energy Park, with the proposed substation siting area in Shropshire. As with the corridor options, the	The route from the proposed Llyn Lort Energy Park to the Shropshire substation was split into five sections. Each of the five sections had three route options, though these route options overlapped for part of the route in some areas. The preferred route was selected for the 2023 non-statutory consultation.

Scenario	Description	Findings
	purpose of identifying route options is to compare the alternative route options to identify a preferred route.	
Changes outside the 2023 Preferred Corridor	There are four main changes to the 2023 preferred corridor which were requested through consultation feedback.	The new preferred route alignments have considered both technical and environmental constraints. The new overall preference compared to the 2023 preferred route is shown in PEIR Volume 2: Figure 3.1.
2025 statutory consultation	Following feedback from the 2023 non-statutory consultation, the Project has been further refined to develop the 2025 preferred draft alignment for this statutory consultation	The 2025 preferred draft alignment is shown in PEIR Volume 2: Figure 3.1.

4 Landscape and Visual Amenity

4.1 Introduction

4.1.1 The preliminary Landscape and Visual Amenity assessment has gathered information through a desk-based study and surveys and identifies the likely significant effects of the Project on landscape character, sensitive views and those who experience the views.

4.1.2 The Landscape Character Assessment has identified that the study area crosses three National Landscape Character Areas (NLCAs) in Wales and two National Character Areas (NCAs) in England, with the regional assessment identifying 27 character areas crossed by the study area throughout Powys and Shropshire.

4.1.3 Approximately 6km of the Project is located within the 'Candidate Area' of the proposed new National Park put forward by Natural Resource Wales.

4.1.4 The visual receptors within the study area that may experience significant effects arising from the Project include:

- Residents within nearby settlements.
- People engaged in outdoor recreation.
- Tourist destinations and recreation areas.
- Campsites, caravan parks and other holiday accommodation; and
- People travelling along the road and rail network.

4.1.5 The indicative preliminary viewpoints that represent these visual receptors are outlined in PEIR Volume 1: Chapter 6 and in PEIR Volume 2: Figure 6.6.

4.2 Construction

4.2.1 During the construction phase, impacts from the Project will be primarily associated with:

- Vegetation clearance.
- The installation of approximately 4.8km of UGC using a combination of open cut and trenchless crossing techniques.
- Construction of temporary construction compounds.
- Movement of associated construction vehicles.
- Provision of watercourse crossings.

- Protection of users of existing highways.
- Excavation and construction of towers foundations.
- Delivery, assembly, and erection of towers.
- Pylon conductor ‘stringing’ and commissioning of the OHL.
- Removal of temporary infrastructure and reinstatement, including landscape works.
- Lighting during construction if work extends into hours of darkness.

4.2.2 PEIR Volume 1: Chapter 6 outlines the preliminary assessment of potential impacts on landscape and visual amenity associated with the construction phase.

4.3 Operation

4.3.1 During the operation phase, impacts from the Project will be primarily associated with the long-term presence of:

- A new 132kV Collector Substation at Grug y Mynydd, with dimensions of 250m x 150m and a maximum height of 13m.
- A new 132kV OHL supported by L7(c) towers which vary in height between 23-36m.
- A new CSEC at Cros y Carreg, with dimensions of 80m x 50m and a maximum height of 13m.
- A new Switching Station at Lower Frankton with dimensions of 250m x 150m and a maximum height of 13m.
- Wayleaves/clearances through woodland and tree belts associated with the Ohl and UGC.

4.3.2 PEIR Volume 1: Chapter 6 outlines the preliminary assessment of potential impacts on landscape and visual amenity associated with the operation phase.

4.4 Mitigation

4.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid landscape and visual amenity environment receptors.

4.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

4.4.3 In consultation with stakeholders, essential mitigation measures will be developed where practicable to help offset the effects of the Project.

4.5 Further Assessment

4.5.1 The preliminary landscape and visual amenity assessment will be further developed leading up to the application for development consent. This includes ongoing stakeholder engagement and surveys of the identified landscape character areas, visual receptors and winter and summer photography.

5 Ecology

5.1 Introduction

5.1.1 The preliminary Ecology assessment has gathered information through desk-based study and surveys.

5.1.2 International and national sites designated for nature conservation purposes such as Special Areas of Conservation (SAC), Ramsar Sites, and Sites of Special Scientific Interest (SSSIs) have been identified within the relevant study area.

5.1.3 Habitats of importance consisting of hedgerows and woodland have been identified.

5.1.4 Signs of activity from species including badgers, bats, otters, and reptiles have been recorded. Surveys are currently being carried out to confirm the status of these species and other species groups, and the results will be reported fully in the ES.

5.2 Construction

5.2.1 During the construction phase, the Project is expected to have no significant impact on nationally designated sites, including areas designated for bats. The majority of the Project crosses farmland with low ecological value. Protected species surveys are yet to be undertaken, however, given the nature of the works, the results of the data search and the ability to potentially micro-site towers to avoid direct effects, the impact on protected species is likely to be not significant.

5.2.2 PEIR Volume 1: Chapter 7 outlines the preliminary assessment of potential impacts on ecology associated with the construction phase.

5.3 Operation

5.3.1 During the operation phase, potential impacts include operational management of the Project area which involves maintenance of wayleave vegetation under the conductor lines and where they pass through or above woody vegetation,

displacement of species and collision risk. However, the effects are likely to be not significant.

5.3.2 PEIR Volume 1: Chapter 7 outlines the preliminary assessment of potential impacts on ecology associated with the operation phase.

5.4 Mitigation

5.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid ecological environment receptors.

5.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

5.4.3 Essential mitigation plans include habitat restoration in affected areas. Compensation measures may involve creating or enhancing habitats off-site if the impact cannot be avoided. Any BNG requirements will be set out in the BNG report, the Outline Habitat Management Plan (OHMP) and other over-arching management plans, as required. The Project has committed to deliver at least a 10% net gain, aligning with upcoming NSIP BNG requirements due to come into force in late November 2025, whilst also meeting Welsh net benefit for biodiversity standards.

5.5 Further Assessment

5.5.1 This assessment will be enhanced during the transition from PEIR to ES as habitat and protected species surveys progress, along with ongoing collaboration with statutory consultees and stakeholders.

6 Ornithology

6.1 Introduction

6.1.1 The preliminary Ornithology assessment has gathered information through desk-based study and surveys.

6.1.2 The Project does not include any statutory sites designated for their ornithological interest and none are present within 10km.

6.1.3 Flight activity surveys have recorded flights by 18 target species within 500m of the Project. For all but two species, the number of recorded flights was low. However, red kite and lesser black-backed gull were recorded relatively frequently.

6.2 Construction

6.2.1 During the construction phase, work can indirectly lead to habitat loss and displacement of birds from foraging and nesting areas. However, effects on the regional populations of red kites, peregrine falcons, and lesser black-backed gulls is likely to be not significant.

6.2.2 PEIR Volume 1: Chapter 8 outlines the preliminary assessment of potential impacts on ornithology associated with the construction phase.

6.3 Operation

6.3.1 During the operation phase, displacement and collision risks have been identified for bird species such as the red kite and lesser black-backed gull. However, the effects are likely to be not significant.

6.3.2 PEIR Volume 1: Chapter 8 outlines the preliminary assessment of potential impacts on ornithology associated with the operation phase.

6.4 Mitigation

6.4.1 A Bird Protection Plan (BPP) will be produced, which is important for safeguarding bird species and their habitats during the construction phase. It will outline protocols to comply with species protection laws, especially the

Wildlife and Countryside Act 1981, focusing on nest sites, roosts, and feeding areas. An Ecological Clerk of Works (ECoW) will oversee the plan's implementation in line with the OCEMP.

6.4.2 Potential effects on birds during the Project's operation phase are expected to mainly involve collisions with OHL wires. To mitigate this risk, the wires can be marked with bird diverters, enhancing visibility and reducing the likelihood of collisions. Flight activity surveys along the power line will determine areas where sensitive species are at higher risk of collision. These high-risk sections, such as those crossing habitual flight routes or near important bird locations, will be marked to increase visibility and prevent collisions.

6.5 Further Assessment

6.5.1 Further field surveys will be undertaken prior to the submission of the ES. These will include a continuation of vantage point watches to collect flight activity information on the breeding and non-breeding bird community, walkover breeding bird surveys and targeted breeding raptor surveys. Ongoing collaboration with statutory consultees and important stakeholders will be undertaken.

7 Historic Environment

7.1 Introduction

7.1.1 The preliminary Historic Environment assessment has gathered information through a desk-based study and surveys.

7.1.2 The following designed and non-designated heritage assets are located wholly or partially within the study area:

- 43 Scheduled Monuments.
- 475 listed buildings (five grade I, 26 Grade II* and 444 Grade II).
- Eight Conservation Areas.
- One Registered Historic Park and Garden.
- 5577 non-designated heritage assets recorded on the Historic Environment Records.

7.2 Construction

7.2.1 During the construction phase, the Listed Building Pen-y-Lan Hall (Grade II*) will experience noise and construction machinery movement which will impact the setting of the asset, which contributes to its importance. This will lead to a moderate adverse temporary effect, which at this preliminary stage of assessment is likely to be significant. Bridge 95 over the Montgomeryshire Canal, adjoining No. 1 The Locks, is adjacent to a temporary access bell mouth. The bridge is narrow and noted on a road sign to be weak. Preliminary assessment has identified that use of this bridge by heavy construction traffic would cause physical impact which is likely to be significant. The Bryn Gwyn Potato Store (non-designated heritage asset) is located within the collector substation compound. Construction of the substation would require total removal of this asset resulting in a moderate to minor adverse effect that would be significant. Implementation of protective measures would reduce this to negligible and it is proposed that these measures would be secured through the CEMP.

7.2.2 During the construction phase, the Non-Designated Heritage Asset's Pont Mathrafal Ring Ditch and Pont Mathrafal Mound will experience the total removal of the assets, resulting in a moderate adverse effect which at this preliminary stage of assessment is likely to be significant.

7.2.3 PEIR Volume 1: Chapter 9 outlines the preliminary assessment of potential impacts on the historic environment associated with the construction phase.

7.3 Operation

7.3.1 During the operation phase, the potential impacts on Scheduled Monuments, Listed Buildings, and Conservation areas are likely to be not significant.

7.3.2 PEIR Volume 1: Chapter 9 outlines the preliminary assessment of potential impacts on the historic environment associated with the operation phase.

7.4 Mitigation

7.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid historic environment receptors.

7.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

7.4.3 Essential mitigation measures are likely to include:

- Landscape and/or earthwork surveys to record the presence of extant features prior to their removal or truncation.
- Historic building recording prior to the removal of non-designated built assets.
- Archaeological mitigation in the form of excavation and recording. The form and extent of mitigation will be developed in discussion with statutory consultees and specified through an Outline Written Scheme of Investigation to be submitted with the DCO application.
- A draft Heritage Management Strategy that will encompass all the required mitigation techniques.

7.5 Further Assessment

7.5.1 This assessment will be further refined between PEIR and ES as the baseline assessment continues to be refined and updated, and the Project design progresses. An updated Baseline Report will be included with the ES. To further inform the understanding of the cultural heritage within the study area, a programme of non-intrusive and, if appropriate, intrusive archaeological investigations will be completed. These investigations may include geophysical survey, geoarchaeological assessment and archaeological trial trench

evaluation. The relevant local authority representatives will be engaged on the scope and timing of this further work.

7.5.2 Feedback from statutory consultation will help in the development of the design of further archaeological investigations to inform the ES along with identifying areas and assets that are of specific interest to statutory consultees and stakeholders. Stakeholder engagement will continue up to and beyond statutory consultation up to DCO submission and through examination.

8 Traffic and Transport

8.1 Introduction

8.1.1 The preliminary Traffic and Transport assessment has gathered information through a desk-based study.

8.1.2 There are several A roads which interact with the study area and provide a potential link between the proposed OHL route and the Strategic Road Network (SRN). These include the A458, A483, A490, A495 and the A5 which are all single-carriageways subject to the National Speed Limit.

8.1.3 There are also numerous B, C and unclassified roads within the study area, and a railway, although it is expected that the Project will only have limited interaction with these routes.

8.1.4 A total of 124 Public Rights of Way (PRoW), 103 within Powys District Boundary and 21 within Shropshire District Boundary have been identified.

8.2 Construction

8.2.1 The Project's main traffic impacts revolve around increased traffic on access roads used by construction vehicles and workers. While the increase in construction traffic is not expected to surpass thresholds for significant effects, potential issues include traffic routeing through towns, affecting pedestrians and causing delays. Construction activity could lead to temporary road or PRoW closures, delays for drivers and buses, and impacts on other road users. Sensitive receptors in relation to these changes are shown in PEIR Volume 1; Figure 10.1. Further assessment in the ES will determine the overall significance of these effects on the primary access routes.

8.3 Operation

8.3.1 During the operation phase, the Project will be maintained by a limited number of operatives across the site, with additional infrequent trips associated with maintenance/inspections or repairs when required. As such, an assessment of the impacts during the operational phase has been scoped out as there are unlikely to be significant effects.

8.4 Mitigation

8.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid traffic and transport environment receptors.

8.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

8.4.3 An Outline Construction Traffic Management Plan (OCTMP) will manage construction vehicle routes to prevent traffic congestion and test local infrastructure capacity. Efforts will reduce imported materials to lower HGV numbers. Plans for site worker transport, training for clean vehicles, traffic management measures, and communication updates on traffic movements will also be in place to maintain high standards and mitigate impacts.

8.4.4 Currently, no essential mitigation measures are deemed necessary based on the assessment at this stage.

8.5 Further Assessment

8.5.1 During the period between the PEIR and ES stages, the traffic assessment will be developed further based on design development, feedback from statutory consultation and engagement with stakeholders.

8.5.2 Where available, baseline traffic flows have been obtained from existing Department for Transport (DfT) static traffic counters. In instances where the available traffic data is deemed no longer useable or where there are no existing traffic counts available; traffic Automatic Traffic Counts (ATC) surveys will be commissioned.

8.5.3 Further assessment of construction traffic impacts will be undertaken along the Proposed Construction Routes to establish road link sensitivity and identify where the flows generated by the Project increase baseline traffic and Heavy Goods Vehicles flows by 30% or 10% in specifically sensitive areas.

9 Noise and Vibration

9.1 Introduction

9.1.1 The preliminary Noise and Vibration assessment has gathered information through a desk-based study.

9.1.2 The Project intersects or comes close to various important transport routes, including national and regional roads, as well as a railway line.

9.1.3 The Grug y Mynydd Collector Substation is situated in a rural area with minimal noise sources nearby. The closest noise source is a minor road about 850m to the south. Three noise-sensitive locations have been identified in the vicinity: Bryngwyn, Gwaenydd, and Carreg-y-Big, located at varying distances from the Project.

9.1.4 The area surrounding the Cors y Carreg CSEC is rural, with few noise sources, with the closest one being a minor road about 900m to the south. Around the Cable Sealing End Compound, there are no noise-sensitive receptors within the 1km study area.

9.1.5 The area surrounding the Switching Station near Lower Frankton is rural with minimal sources of noise. The nearest noise source is the A495 which runs approximately 400m north of the Project. There are nine noise-sensitive receptors identified within the study area which are outlined in PEIR Volume 1: Chapter 11 and in PEIR Volume 2; Figure 11.1.

9.2 Construction

9.2.1 During the construction phase, the preliminary, unmitigated calculations conclude a potential for significant noise effects during both the weekday and weekend periods, with significantly more exceedances during the weekend periods because of a reduction in limit. Preliminary assessment of vibration has identified that there is potential for significant adverse effects to arise from ground compaction activities (during haul road construction), although the short-term duration of these activities (less than 10 days in any 15 consecutive days) at any one location is not expected to result in a significant adverse effect, subject to further detailed assessment in the ES.

9.2.2 PEIR Volume 1: Chapter 11 outlines the preliminary assessment of potential impacts of noise and vibration associated with the construction phase.

9.3 Operation

9.3.1 At the current stage of the Project design, detailed layouts of the proposed static facilities and locations of any noise and/or vibration-emitting plant have not been finalised and as such it is not possible to quantify the potential noise, and vibration impacts and any resultant significant effect.

9.4 Mitigation

9.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid noise and vibration environment receptors.

9.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

9.4.3 Specific mitigation measures based on Best Practicable Means (BPM) to control construction noise will involve using different equipment or techniques, plant silencers, and barriers like acoustic screens or earth bunds, tailored to the specific construction activity. Specific mitigation measures based on BPM to control construction vibration will involve investigating re-alignment of the access and haul routes and using different non-vibratory techniques where feasible, depending on the specific construction activity. In all instances, by implementing specific BPM, it is anticipated that any adverse effects from construction noise and vibration will be prevented and mitigated to a minimum, with no significant effects expected to occur due to construction noise.

9.4.4 Operational mitigation measures for the Project will be proportionate and may include one or more of the following measures:

- Engineering - containment of noise generated.
- Layout - adequate distance between source and noise-sensitive receptors.
- Incorporating good design: to minimise noise transmission through landscaping and screening by natural or purpose-built barriers including topographical changes.
- Administration - specifying appropriate noise criteria or times of use.

9.5 Further Assessment

9.5.1 The noise and vibration assessment process will be further developed during the EIA and DCO stages, involving updates to the Project design, statutory consultation, and stakeholder engagement.

9.5.2 Baseline noise surveys are necessary for determining the initial noise levels around fixed installations like the Grug y Mynydd Collector Substation and Switching Station near Lower Frankton. The survey data, combined with observations, will be used to evaluate the operational noise of these facilities.

10 Water Resources

10.1 Introduction

10.1.1 The preliminary Water Resources assessment has gathered information through a desk-based study.

10.1.2 There are several ponds and lakes in the area, some of which are designated for nature conservation purposes. These conservation sites include SSSIs, SACs, and Local Nature Reserves (LNR).

10.1.3 The watercourses in the area are used for water abstraction, receiving, transporting, authorised diluting and informal discharges.

10.1.4 Seven main rivers will be crossed by the Project and three main rivers that are not crossed by the Project but flow through the study area. The study area also covers catchments of various Water Framework Directive (WFD) waterbodies. A Total Catchment Source Protection Zone (SPZ) and a Nitrate Vulnerable Zone (NVZ) are also present.

10.1.5 Most of the Project lies within Flood Zone 1 (low risk). However, some areas are in Flood Zones 2 and 3, primarily along main rivers.

10.1.6 Surface water flood risk analysis indicates low risk for the proposed Grug y Mynydd Collector Substation and Switching Station near Lower Frankton locations, with some localised higher-risk areas related to existing flow pathways towards watercourses.

10.1.7 For groundwater flood risk, variability exists in the study area, with potential risks identified where gravel deposits may be hydraulically connected to nearby watercourses.

10.1.8 Water environment receptors as mentioned above are shown in PEIR Volume 2; Figure 12.1

10.2 Construction

10.2.1 During the construction phase, there is the potential for impacts to all watercourses, water quality, flood flow storage and conveyance, flood risk, land drainage, and water resource availability. However, the potential effects on water resources are likely to be not significant.

10.2.2 PEIR Volume 1: Chapter 12 outlines the preliminary assessment of potential impacts on water resources associated with the construction phase.

10.3 Operation

10.3.1 The Planning Inspectorate agreed that effects on water quality during operation could be scoped out providing that the measures to mitigate the risks of pollution of watercourses are clearly described in the ES and secured in the DCO.

10.3.2 During the operation phase, there is the potential for impacts to the hydromorphology, flood flow storage and conveyance, flood risk and land drainage. However, the potential effects on water resources are likely to be not significant.

10.3.3 PEIR Volume 1: Chapter 12 outlines the preliminary assessment of potential impacts on water resources associated with the operation phase.

10.4 Mitigation

10.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid water resources environment receptors.

10.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

10.4.3 Due to the extensive floodplain of the River Vyrnwy, complete avoidance of construction in this area is not feasible. Therefore, mitigation measures will be implemented to safeguard against negative effects on flood risk during construction and operation. These measures may involve floodplain storage compensation and ensuring unimpeded floodplain flows.

10.5 Further Assessment

10.5.1 The next steps include developing the Flood Risk Assessment (FRA) and Water Framework Directive (WFD) screening assessment. A geomorphological survey of the River Vyrnwy is proposed to inform the ES. The findings of these will inform the full assessment undertaken for the ES.

10.5.2 Recognising the active nature of the River Vyrnwy, a geomorphological study is proposed to further understand its behaviour, with its outcomes guiding additional necessary measures beyond standard mitigation strategies.

10.5.3 The assessment undertaken in the ES will consider any design changes (e.g., as a result of stakeholder engagement or development of the design) since completion of the PEIR. Ongoing collaboration with statutory consultees and important stakeholders will be undertaken.

11 Ground Conditions, Geology and Hydrogeology

11.1 Introduction

11.1.1 The preliminary Ground Conditions, Geology and Hydrogeology assessment has gathered information through a desk-based study.

11.1.2 The Project consists of varying superficial geology, including peat, till, and other deposits, as well as diverse bedrock geology with multiple fault lines.

11.1.3 Significant sites, such as Geological Conservation Review (GCR), Regionally Important Geodiversity Site (RIGS), SSSIs, Source Protection Zones (SPZ), Groundwater Dependent Terrestrial Ecosystems (GWDTEs), and mineral safeguarding areas are present in the study area.

11.1.4 The Project contains potential contaminated sources, including historical water features, a disused railway, and an operational railway line.

11.1.5 Current licensed groundwater abstractions are concentrated in the north, around Oswestry.

11.1.6 The Project and study area contain both Secondary A and Secondary (undifferentiated) aquifers.

11.1.7 There are several historical wells and springs within a 500m buffer zone of the Project which have been identified.

11.2 Construction

11.2.1 During the construction phase, there is the potential for impacts to geologically important sites, mineral reserves, public and private water supplies, made ground including and existing areas of contamination, aquifers, SPZs GWDTEs, springs and watercourses. However, the potential effects are likely to be not significant. Where the potential for likely significant effects cannot be confirmed at this stage, this will be subject to a detailed assessment in the ES.

11.2.2 PEIR Volume 1: Chapter 13 outlines the preliminary assessment of impacts on ground conditions, geology, and hydrogeology associated with the construction phase.

11.3 Operation

11.3.1 During the operation phase, there is the potential for impacts to geologically important sites, mineral reserves, private water supplies, aquifers, SPZs, GWDTEs and springs. However, the potential effects are likely to be not significant. Where the potential for likely significant effects cannot be confirmed at this stage, this will be subject to a detailed assessment in the ES.

11.3.2 PEIR Volume 1: Chapter 13 outlines the preliminary assessment of impacts on ground conditions, geology, and hydrogeology associated with the operation phase.

11.4 Mitigation

11.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid ground conditions, geology and hydrogeology environment receptors.

11.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

11.4.3 Additional assessments will be conducted for contamination risks, and remedial measures will be proposed if necessary. If a risk to controlled waters such as private and public water supplies (wells), source protection zones, springs, groundwater dependent terrestrial ecosystems and water courses cannot be avoided, Foundation Works Risk Assessments will be carried out with mitigation measures. Environmental and geotechnical investigations will guide remediation strategies, including a geo-conservation strategy for specific sites. Specific measures will be identified to minimise likely significant effects on ground conditions.

11.5 Further Assessment

11.5.1 To enhance the baseline conditions assessment ongoing consultation with statutory consultees and important stakeholders will be undertaken.

11.5.2 In line with guidance, a Preliminary Risk Assessment (PRA) will be undertaken as part of the ES and where required, targeted ground investigations and walkover surveys will be undertaken.

12 Air Quality

12.1 Introduction

12.1.1 The preliminary Air Quality assessment has gathered information through a desk-based study.

12.1.2 There are currently no declared Air Quality Management Areas (AQMAs) within Powys. Two AQMAs have been identified in Shropshire (Shrewsbury No. 3 AQMA and Bridgnorth Pound Street AQMA), but they are 20km or more from the Project.

12.1.3 No exceedances of the annual mean NO2 Air Quality Strategy (AQS) objective were reported in Powys. Two exceedances were reported in Shropshire, but they occur more than 20km from the Project.

12.1.4 Data obtained from Defra shows that 2024 background NO2 and particulate matter concentrations in the vicinity of the Project are well below the relevant annual mean AQS values.

12.2 Construction

12.2.1 During the construction phase, potential impacts include construction dust arising from trackout, earthworks and construction activities have been identified, which may impact human and ecological receptors. An increase in nitrous oxides, nitrogen dioxide and particulate matter concentrations on human and ecological receptors within 200m of the construction traffic routes and Non-Road Mobile Machinery Emissions (NRMM) is also predicted. However, the effects are likely to be not significant following implementation of appropriate mitigation measures (as identified in Table 13 of Appendix 14.1). Where the potential for likely significant effects cannot be confirmed at this stage, this will be subject to a detailed assessment in the ES.

12.2.2 PEIR Volume 1: Chapter 14 outlines the preliminary assessment of impacts on air quality associated with the construction phase and proposed mitigations.

12.3 Operation

12.3.1 The assessment of operational and maintenance air quality impacts is scoped out of the PEIR and the ES. At this stage, it is anticipated that operational traffic will be limited, and vehicle trips are anticipated to be below the Institute of Air

Quality Management (IAQM) and Environmental Protection UK (EPUK) Development Control screening criteria.

12.3.2 If predicted vehicle numbers during the operation and maintenance phase change following the PEIR, the requirement for the assessment of operational impacts on air quality will be reconsidered for inclusion in the ES.

12.4 Mitigation

12.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid air quality environment receptors.

12.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

12.4.3 As a result of the preliminary construction dust assessment detailed in PEIR Volume 1: Chapter 14, several mitigation measures have been identified which include, but are not limited to:

- Siting activities from sensitive areas.
- Ensuring construction vehicles are used responsibly and meet emissions standards.
- Dust control by ensuring materials are not moved unnecessarily and earthworks and stockpiles are protected.
- Prohibiting bonfires and waste burning.
- To ensure compliance with the mitigation measures, daily site inspections will be carried out.

12.4.4 A full list of measures that have been identified is available in Table 13 of Appendix 14.1 Construction Dust Methodology and Assessment.

12.5 Further Assessment

12.5.1 Once details on the construction traffic routes and flows are available, the traffic data will be screened against the IAQM and EPUK screening criteria to identify if detailed assessments and surveys are required to identify the air quality impacts from construction vehicle emissions. If predicted vehicle numbers during the operation phase change following the PEIR, the requirement for the assessment of operational effects on air quality will be reconsidered for inclusion in the ES.

12.5.2 Upon finalisation of the design of the Project for the ES, the assessment of construction dust and NRMM will be reviewed and updated if required.

12.5.3 In the period between the PEIR and ES stage, the assessments set out within this chapter will be further developed and refined based on the statutory consultation and ongoing stakeholder engagement outcomes.

13 Soils and Agriculture

13.1 Introduction

13.1.1 The preliminary Soils and Agriculture assessment has gathered information through a desk-based study.

13.1.2 The Project consists of a variety of soil associations, the most common being loamy, silty, and sandy.

13.1.3 Agricultural Land Classification (ALC) has identified that the southern end of the route comprises grade 3b, 4 and 5 land. The middle section of the route consists of mainly grades 2 and 3a, with the northern section comprising grades 2, 3 and 4.

13.1.4 The land use within the Project is primarily grassland with some small areas of woodland within the Wales section. Arable land becomes common around Llansantffraid–Ym-Mechain with a more even mix of arable and pasture through the English part of the route.

13.2 Construction

13.2.1 During the construction phase, at this preliminary stage of assessment, the following effects are likely to be significant:

- Potential for changes to one or more soil functions (biomass production; supporting ecological habitat, soil biodiversity or landscape areas; soil carbon; soil hydrology; supporting archaeological or cultural heritage resources).
- Potential for the permanent loss of peat or organic soils during construction.
- Potential for temporary and permanent loss of Best Most Versatile (BMV) land from agricultural production within the Project in Wales and England.
- Potential for agricultural land holdings to be temporarily disturbed during construction.

13.2.2 PEIR Volume 1: Chapter 15 outlines the preliminary assessment of impacts on soils and agriculture associated with the construction phase.

13.3 Operation

13.3.1 During the operation phase, land taken temporarily by the Project will have been reinstated and returned to agricultural use, whilst land taken permanently by the Project will remain out of agricultural use. As the construction phase will comprise both temporary and permanent loss, effects are likely to be not significant.

13.3.2 Maintenance and repair work that may result in the disturbance to soils during operation will be undertaken in accordance with standard good practice soil handling methods, therefore, effects are likely to be not significant.

13.4 Mitigation

13.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid soil and agriculture environment receptors.

13.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

13.4.3 The assessment undertaken within this PEIR has not identified any requirements for essential mitigation measures at this stage for soils and agriculture.

13.5 Further Assessment

13.5.1 The ALC and peat surveys report will be completed prior to the completion of the ES. This information will support the assessment of impacts on BMV land and peat, where present. Consultation with Land Quality Advice Service (LQAS) and Natural England will continue to confirm agreement of the methodology to be used for the ALC surveys.

14 Health and Wellbeing

14.1 Introduction

14.1.1 The preliminary Health and Wellbeing assessment has gathered information through a desk-based study.

14.1.2 Powys and Shropshire have a moderate level of deprivation.

14.1.3 The population who are limited (rather than prevented) from undertaking daily activities within the study area is broadly in line with the national averages with existing narrow inequalities.

14.1.4 The healthcare service in the study area is unlikely to be under significant strain.

14.1.5 Whilst many features of the general population meet the criteria for low sensitivity, the shared resources between the Project and this population, as well as the community outlook as represented by stakeholder feedback, indicate slightly higher sensitivity. For these reasons, the sensitivity of Health and Wellbeing of both the general population and vulnerable group receptors in the study area has been identified as medium.

14.2 Construction

14.2.1 During the construction phase, potential impacts will be primarily associated with:

- The physical assets of the Project resulting in changes in visual amenity.
- Construction traffic resulting in changes to traffic flows.
- Construction activities resulting in changes in noise and vibration generation.
- Construction activities interacting with existing infrastructure within the floodplain and watercourse crossings resulting in changes to flood risk and water quality.
- Construction activities impacting made ground and existing contamination.
- Construction dust and emissions resulting in changes to air quality.
- Jobs generated during construction resulting in changes to the local economy.
- Construction activities and public consultations resulting in changes to the public’s mental health.

14.2.2 However, the effects during the construction phase are likely to be not significant.

14.2.3 PEIR Volume 1: Chapter 16 outlines the preliminary assessment of impacts on health and wellbeing associated with the construction phase.

14.3 Operation

14.3.1 The potential effects on health and wellbeing related to environmental change during the operation phase have been scoped out of the PEIR as agreed in the scoping opinion.

14.3.2 The Project will be designed and operated in accordance with Electromagnetic Field (EMF) related guidelines. However, there remains a perception of risk associated with EMFs resulting in changes to the public's mental health. This is likely to be not significant.

14.4 Mitigation

14.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid health and wellbeing environment receptors.

14.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

14.4.3 Further essential mitigation measures associated with health-related environmental change are detailed in PEIR Volume 1: Chapter 6; Chapter 10; Chapter 11; Chapter 12; Chapter 13; Chapter 14; and Chapter 19.

14.4.4 An EMF compliance report will be provided to set out the evidence for the levels of EMF that will arise from the Project being kept to a level that will not lead to health impacts.

14.5 Further Assessment

14.5.1 The Health and Wellbeing ES assessment will be further developed based on the statutory consultation and/or stakeholder engagement, where relevant, to be undertaken between the PEIR and ES stage.

14.5.2 The ES will incorporate and draw on the results of survey data captured following PEIR as well as assessment findings from other chapters considered relevant to the health and wellbeing assessment.

15 Major Accidents and Disasters

15.1 Introduction

15.1.1 The preliminary Major Accidents and Disasters (MA&D) assessment has gathered information through a desk-based study.

Scoping Report

15.1.2 The potential MA&D that could arise due to the Project were appraised within the Scoping Report submitted to the Planning Inspectorate on 23 January 2024, including:

- Physical accidents during the construction of the Project e.g. crane topple.
- Electrical accidents associated with the commissioning of the infrastructure.
- Fire/explosion during the construction phase.
- Security threats.
- External hazards.
- External interference.
- Adverse weather.

15.2 Construction

15.2.1 During the construction phase, potential impacts include:

- Physical accidents leading to worker fatality.
- Fire involving diesel fuel or combustible materials, as well as explosions or releases of hazardous substances.
- Hostile acts against the Project and associated workforce.
- Adverse weather conditions affecting the construction of the Project.

15.2.2 The Applicant would apply a comprehensive risk management framework to reduce risks to as low as reasonably practicable and ensure that there are no significant effects throughout the Project lifecycle. Therefore, the likelihood of these potential MA&D events is considered so low that the risks are unlikely to be significant.

15.2.3 PEIR Volume 1: Chapter 17 outlines the preliminary assessment of impacts of major accidents and disasters associated with the construction phase.

15.3 Operation

15.3.1 During the operation phase, potential impacts include:

- Physical accidents such as the collapse of above-ground structures.
- Electrical accidents associated with the commissioning of the infrastructure, and consideration will need to be given to tie-ins to the existing grid.
- Fire or explosion which could occur at one of the substations.
- Third-party disturbance or damage to the infrastructure in error leading to electrocution.
- Adverse weather conditions impacting the infrastructure.

15.3.2 The Applicant would apply a comprehensive risk management framework to reduce risks to as low as reasonably practicable and ensure that there are no significant effects throughout the Project lifecycle. Therefore, the likelihood of these potential MA&D events is considered so low that the risks are unlikely to be significant.

15.3.3 PEIR Volume 1: Chapter 17 outlines the preliminary assessment of impacts of major accidents and disasters associated with the operation phase.

15.4 Mitigation

15.4.1 The Applicant will apply a comprehensive risk management framework to reduce risks to as low as reasonably practicable and ensure that there are no significant effects throughout the Project lifecycle. Therefore, the likelihood of these potential MA&D events is considered so low that the risks are unlikely to be significant.

16 Greenhouse Gases

16.1 Introduction

16.1.1 The preliminary Greenhouse Gas (GHG) assessment has gathered information through a desk-based study.

16.1.2 GHG emissions are used as a measure of the Project's impact on climate. The increase in concentration of GHG emissions in the global atmosphere is causing a change in climatic conditions creating climate change impacts. Any GHG emissions arising as a result of the Project will therefore have an impact on climate change.

16.1.3 The most recent data on baseline GHG emissions for Powys County Council, Shropshire Council, England and Wales is presented in Table 2. This data presents the emissions that were emitted in the annual period of 2022 for each geographical area. The baseline emissions contextualise GHG emissions from the Project to determine the magnitude of change.

Table 2 – Baseline GHG emissions (2022) locally, regionally and nationally

Geographical Area		2022 Emissions (tCO_2e)
Local Authority	Powys County Council	1,615,800
	Shropshire Council	2,587,000
West Midlands		32,367,900
Wales		26,835,800
England		290,954,00
National		375,929,300

16.2 Construction

16.2.1 During the construction phase, the total GHG emissions arising from embodied carbon, transportation of materials to site, and construction plant use are currently estimated to be 50,370 tCO2e. Any effects on the global atmosphere from these emissions, or the ability for the UK to meet its carbon budgets is not likely to be significant.

16.3 Operation

16.3.1 During the operation phase, the total GHG emissions arising are currently estimated to be 51,560 tCO2e. Any effects on the global atmosphere from these emissions, or the ability for the UK to meet its carbon budgets is not likely to be significant.

16.3.2 The current extent of greenhouse gas emissions associated with land use changes will be assessed within the ES as part of the Greenhouse Gases Chapter, based on the Biodiversity Net Gain assessment.

16.4 Mitigation

16.4.1 Embedded mitigation measures have been integral in reducing the GHG emission effects of the Project.

16.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

16.4.3 No essential mitigation measures are currently proposed associated with the GHG assessment.

16.5 Further Assessment

16.5.1 The GHG ES assessment will be further developed based on design development and the findings from statutory consultation and/or further stakeholder engagement, where relevant, to be undertaken between the PEIR and ES stage.

16.5.2 Embodied emissions from construction materials will be recalculated once material quantities and types are finalised during the ES stage. Plant emissions will be updated after identifying the plant type. Transport emissions will be revised based on actual transport distances once material sourcing is complete.

16.5.3 Monitoring and reporting will occur during design and construction to ensure best practices and mitigation measures are followed. During operation, Project emissions, including the impact of Sulphur Hexafluoride (SF6), will also be monitored and reported where relevant.

17 Socio-economics, Recreation and Tourism

17.1 Introduction

17.1.1 The preliminary Socio-economics, Recreation and Tourism assessment has gathered information through a desk-based study.

17.1.2 Powys and Shropshire have a lower proportion of younger population (aged 15 and under) and working age population (aged 16 to 64) when compared to Wales, West Midlands and England. Powys and Shropshire have older age profiles compared to Wales, the West Midlands, and England. Powys, in particular, has the highest proportion of residents aged 65 and over.

17.1.3 The Welsh Index of Multiple Deprivation (WIMD) is a relative measure of deprivation in Wales. In Powys, 19 out of 79 Lower Layer Super Output Areas (LSOAs) were ranked within the 0% to 50% most deprived LSOAs in Wales in 2019. The English Index of Multiple Deprivation (IMD) provides similar information for spatial areas in England. Shropshire ranked 165 in 2019 out of 317 local authorities.

17.1.4 Powys and Shropshire have a higher economic activity rate when compared to their respective country or region, as well as the national average. Both Powys and Shropshire have an unemployment rate of 3.3%, which is lower than the rates for Wales (3.7%), the West Midlands (4.4%), and Great Britain (3.7%).

17.2 Construction

17.2.1 During the construction phase, at this preliminary stage of assessment, the following effects are likely to be significant:

- There will potentially be temporary disruption due to conducting underground cable construction works, such as open trenching, pylon and overhead line construction works, vegetation clearance and the diversion of existing assets. The construction works may affect users of the Business, Recreation and Tourism Assets due to potential temporary visual amenity, noise and air quality impacts arising from construction vehicles and construction activities.
- Temporary PRoW diversions required during construction will be defined at the detailed design stage. Hence, a worst-case scenario has been assumed where safe access or diversion cannot be maintained or provided during construction. Access to the majority of the National Trails will be maintained.

A short section of the Glyndwr's Way and Offa's Dyke Path trails fall within the Project and access to these sections of the trails is likely to be temporarily affected during construction.

17.2.2 PEIR Volume 1: Chapter 19 outlines the preliminary assessment of impacts on socio-economics, recreation and tourism associated with the construction phase.

17.3 Operation

17.3.1 During the operation phase, potential impacts include visual amenity effects to businesses, recreation and tourism assets within and beyond the Project and the diversion of two public footpaths. However, the effects are likely to be not significant.

17.3.2 PEIR Volume 1: Chapter 19 outlines the preliminary assessment of impacts on socio-economics, recreation and tourism associated with the operation phase.

17.4 Mitigation

17.4.1 Embedded mitigation measures include sensitive routeing and siting to avoid socio-economics, recreation and tourism environment receptors.

17.4.2 Good practice mitigation measures include the development of an OCEMP to prevent, minimise, or mitigate significant construction phase environmental impacts.

17.4.3 Further preliminary mitigation measures include:

- Ensure access to business, recreation and tourism assets is maintained where possible during construction. Should temporary closures be unavoidable, temporary diversions should be discussed and agreed upon with the relevant businesses and asset owners prior to construction. Access diversions will be clearly marked along the diversion; and
- A PRoW Management Plan will be agreed upon and will detail that closure of PRoWs will be the last resort if a safe diversion cannot be provided.

17.5 Further Assessment

17.5.1 The Socio-economics, Recreation and Tourism ES assessment will be further developed based on the findings from statutory consultation and/or further

stakeholder engagement, where relevant, to be undertaken between the PEIR and ES stage.

18 Cumulative Effects Assessment

18.1 Introduction

18.1.1 The EIA is required to include a Project-level assessment of potentially significant effects of the Project when considered cumulatively with other developments, and an assessment of the combination of all environmental effects of the Project on receptors. The two categories of cumulative effects are 'intra-Project' and 'inter-Project' effects:

- Intra-Project effects relate to effects to a receptor from within the Project only e.g. the impact of residential visual amenity changes alongside the impact of noise from the construction and operation of the Project on a residential property.
- Inter-Project effects relate to the effects of the Project alongside the effects of other developments within the study area. E.g. the construction traffic of the Project in combination with the construction traffic of another development in the study area may lead to a temporary increase in traffic on the local road network.

18.1.2 The ES will include an assessment of cumulative effects in accordance with applicable legislation, policy and guidance. The preliminary findings of this assessment, including the initial long list of other developments are presented in PEIR Volume 1: Chapter 20.

18.2 Cumulative effects

18.2.1 The cumulative effects assessment will follow the four-stage approach (as recommended by the Planning Inspectorate):

- Stage 1: Establishing the long list of other existing and, or approved developments.
- Stage 2: Establishing a shortlist of other existing and, or approved developments.
- Stage 3: Information gathering.
- Stage 4: Assessment.

18.2.2 Further information on the approach that will be applied to this Project is included in PEIR Volume 1: Chapter 20.

18.3 Likely Significant Effects

18.3.1 At this preliminary stage of the assessment with the information that is available, it is not anticipated that any intra- or inter-Project cumulative effects will arise during the construction and operation phases of the Project.

18.4 Mitigation

Intra-Project cumulative effects

18.4.1 Measures to avoid, prevent, reduce or offset any potential significant intra-Project cumulative effects will be identified and described in the ES. While the measures identified in other chapters within the PEIR will help to reduce potential impacts (therefore reducing the potential for the Project to contribute to cumulative effects), there may be a need for additional mitigation to further mitigate any significant cumulative effects.

Inter-Project cumulative effects

18.4.2 Measures to avoid, prevent, reduce or offset significant inter-project cumulative effects will be identified and described in the ES. While the measures identified in other chapters within the PEIR will help to reduce potential impacts (therefore reducing the potential for the Project to contribute to cumulative effects), there may be a need for additional mitigation. Where necessary, this is likely to require collaboration and cooperation with third-party developers to gain a better understanding of the proposed developments, the likely significant effects and the potential need for mitigation.

18.5 Further Assessment

18.5.1 The cumulative effects assessment will undergo further development through the EIA process, implementing Project design updates, statutory consultation requirements, and stakeholder engagement. There will be ongoing engagement with Powys County Council, Shropshire Council, and surrounding local authorities in which planning applications overlap, to finalise the long list and short list of other developments.

18.5.2 The full cumulative effects assessment will be presented in the ES which will be submitted with the application for development consent.

19 Conclusion

19.1 Summary

19.1.1 The PEIR presents the preliminary findings of the EIA process for the Project based on the design information provided at this stage.

19.1.2 A number of design and additional mitigation measures have been identified to mitigate and control environmental effects during the construction and operation phases of the Project.

19.1.3 The preliminary mitigation measures recommended for the construction phase will be reported in the management plans identified in the respective topic chapters in the PEIR. The primary management plan for construction will be the OCEMP .

19.1.4 The mitigation measures recommended for the operational phase will be integrated into specific management plans. These plans will be prepared and implemented by the Applicant (and sub-contractors) as part of their management systems.

19.2 Next Steps

19.2.1 The Applicant will continue to engage with the relevant consultees through meetings and targeted discussions where appropriate, in addition to the statutory consultation taking place in Spring 2025.

19.2.2 A full assessment for each of the topics outlined in this PEIR will be completed for the ES which will consider any design changes (e.g., as a result of stakeholder engagement or development of the design) since completion of the PEIR and will be submitted as part of the DCO application.

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