Uwchraddio'r Grid
Pentir i Drawsfynydd

The Great Grid Upgrade
Pentir to Trawsfynydd

PTNO-AEC-ZZZZ-ZZZZZZ-RPT-ES-000035

Prosiect i Atgyfnerthu'r cysylltiad rhwng Pentir a Thrawsfynydd

Pentir to Trawsfynydd Reinforcement Project

Pentir Substation: Design and Access Statement
September 2025

nationalgrid

Contents

1. Introduction

1.1 Background

1.1.1 This Design and Access Statement (DAS) has been prepared to accompany a planning application made by National Grid Electricity Transmission (plc) (NGET) (the Applicant) for the replacement of existing underground cables and installation of new underground cables ('the Proposed Works') at the existing Pentir substation in North West Wales (the 'Proposed Works Site').

1.1.2 The planning application forms part of the Pentir to Trawsfynydd Reinforcement Project by NGET ('the Project'). The Project encompasses the reinforcement of overhead lines and cables on the existing circuits ('inland' A circuit and 'coastal' B circuit) between Pentir and Trawsfynydd substations in North West Wales. The Project is part of the wider network transmission upgrades required to facilitate the connection of 50 Gigawatt (GW) of offshore wind by 2030 (5.48 GW in the north-west region). This was confirmed in the National Energy System Operator (NESO) Network Options Assessment (NOA) and the Holistic Network Design (HND). Pentir substation is at the north of this network.

1.2 Summary of the Proposed Works

1.2.1 The Proposed Works will be entirely contained in the existing Pentir Substation footprint and will utilise the existing access road, laydown areas, welfare and office compounds and staff car parking. The Proposed Works will include the replacement of existing underground cables and installation of new underground cables at the existing Pentir substation in North West Wales ('the Proposed Works').

1.2.2 The Environmental Statement (ES) **Volume 2, Chapter 2: Pentir Works** provides a detailed description of the Proposed Works.

1.3 Purpose of this Document

1.3.1 A DAS is required by the Town and Country Planning (Development Management Procedure (Wales) Order 2012 (as amended) (Ref. 1-1) ('the Development Management Procedure Order') to accompany applications for major development in Wales. The Proposed Works constitute 'major development' as they comprise development carried out on a site with an area of 1 hectare (ha) or more. The application site is defined by the red line boundary in **Figure 1** and covers a total area of 1.5 ha.

1.3.2 Article 7(4) of Part 2 of the Development Management Procedure Order (Ref. 1-1) states that:

"A design and access statement must:

a) Explain the design principles and concepts that have been applied to the development;

b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;

c) explain the policy or approach adopted as to access, and how policies relating to access in the development plan have been taken into account; and

d) explain how any specific issues which might affect access to the development have been addressed."

1.3.3 Paragraph 3.17 of Planning Policy Wales 12 (Ref. 1-2) ('PPW') explains that the purpose of a DAS is to communicate what development is proposed, to demonstrate the design process that has been undertaken and to explain how the objectives of good design and placemaking have been considered. It goes on to state that a DAS should be a 'living' document that deals with all relevant aspects of design throughout the process and the life of the development, with the design principles and concepts clearly stated.

1.3.4 The DAS should reflect the objectives of good design as set out in the PPW and the Technical Advice Note 12: Design (Ref. 1-3) (TAN 12). In TAN 12, a DAS is described as a *'communication tool'* that is used to outline how the design of the proposal has been considered from the outset of the development process and how the good design objectives have been used to inform this. The objectives of good design are set out within TAN 12 and are access, character, community safety, environmental sustainability and movement. These are discussed further in section 3.2 of this DAS.

1.3.5 This DAS has been prepared in accordance with the above requirements and should be read alongside other application documents, particularly the Planning Statement and the supporting drawings and plans, which will be submitted as part of the planning application.

1.4 Structure of this Document

1.4.1 This DAS provides context of the Proposed Works Site and surrounding area, outlines the details of the Proposed Works including its design and considers relevant site constraints that have influenced the design and details the relevant design and access policy, both on a local and national scale. This DAS is structured as follows:

- Chapter 1: Introduction – introduces the Proposed Works, the Project and provides context for the preparation of this Statement and provides an overview of the content of the planning application.
- Chapter 2: Site and Context Analysis – provides more detail on the context of the Proposed Works Site including location, constraints, and statutory and non-statutory designations.
- Chapter 3: Design and Access Policy and Guidance – provides an overview of the relevant design and access policy context, both at a local and national level.
- Chapter 4: Design – details the design process of the Proposed Works and how the design was formulated, considering the context and surroundings of the Proposed Works Site, and how the design relates to relevant local and national policies.
- Chapter 5: The Proposed Works – details the layout, scale, appearance of the Proposed Works and details on the construction and operation.

- Chapter 6: Conclusion – provides a summary of the design and access of the Proposed Works and how the Proposed Works has considered context, policy and guidance documents.

2. Site and Context Analysis

2.1 Context of the Proposed Works Site

2.1.1 **Figure 1** identifies the Proposed Works Site, which is in the footprint of the existing Pentir Substation, off the B4547 in north-west Wales (including the existing substation access road from the public highway). The Proposed Works Site is approximately 4.5 kilometres (km) south-west of Bangor in the administrative boundary of Gwynedd Council (Grid Reference SH 558 677). The Proposed Works Site is classed as a brownfield site as it is occupied by the existing substation. The Proposed Works cover approximately 1.5 hectares (ha), with the red line boundary comprising the existing access road, laydown areas, welfare and office compounds and staff car parking.

2.1.2 As the Proposed Works Site is in the existing substation, it is predominantly bound by associated electrical infrastructure. Access to the Proposed Works Site is provided from the B4547 via a private metalled access road to the south.

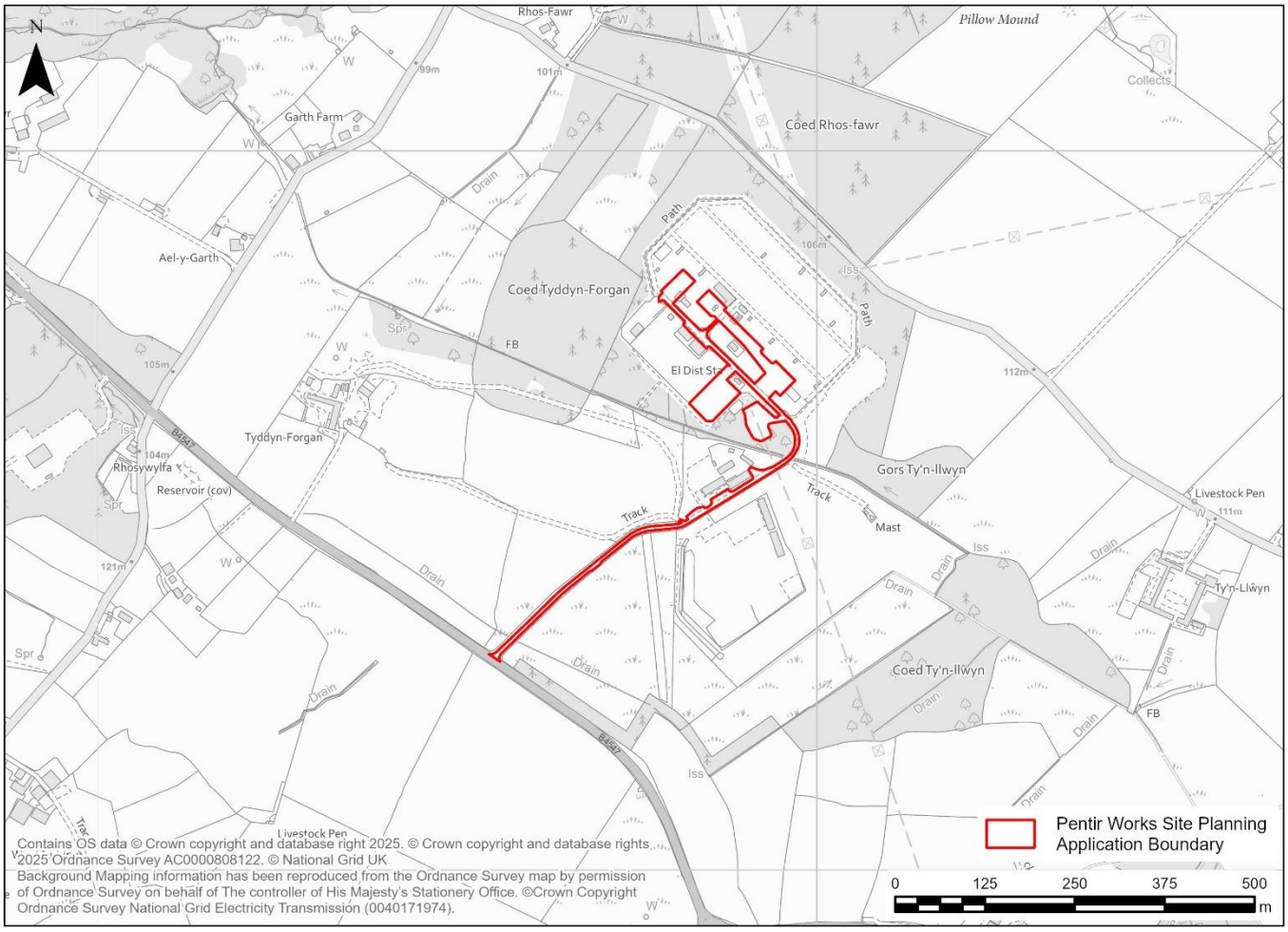
2.1.3 The substation perimeter is secured by a 2.4 metre high steel palisade fence with a monitored pulse electric fence backing, which is consistent with the materials of the existing substation. There is woodland outside the boundary fence of most of the substation and the fence can be seen near the access gates and is partly visible through less dense parts of the woodland.

2.1.4 Online data indicates the Proposed Works Site was historically rough ground and open fields with two water courses in the immediate vicinity of the Site in 1963.

2.1.5 According to the Groundsure data, the existing Pentir Substation has been mapped in the north of the Site since 1970. A small tank has also been mapped to the south of the northern area of the Site from 1970.

2.1.6 Areas associated with storage and car parking are to the south-east of the Pentir Substation.

Figure 1: Site Location Plan



2.2 Wider Site Context

2.2.1 The existing Pentir Substation is bound on all sides by mature trees except for parts of the northern and southern boundaries, which are punctuated by overhead lines, pylons and the access road to the south connecting the substation compound to the B4547.

2.2.2 Beyond the substation footprint there are a number of isolated farmhouses, agricultural buildings, and sparsely distributed residential properties within 500 metres (m); the closest is approximately 400 m west.

2.2.3 Agricultural fields in the wider site context are categorised as Agricultural Land Classification (ALC) Grade 3a, 3b and 5 on the Predictive Agricultural Land Classification Map 2 (Ref. 1-4).

2.2.4 The strategic road network includes the B4547, which provides access from the south-west to the existing Pentir Substation. The B4547 intersects with the A4244 and the B4366 via a roundabout approximately 500 m south of the Proposed Works Site. There are no Public Rights of Way (PRoW) within or adjacent to the Proposed Works Site. The closest PRoW is Footpath Pentir No 14, approximately 730 m north-west at its nearest point, however there is no direct access from this PRoW to the Proposed Works Site and this PRoW would not be impacted by the Proposed Works.

2.2.5 As outlined in Table 3-1 of the accompanying Planning Statement, the existing substation is subject to an extant planning permission for the installation of an

underground 132 kV grid connection cable between the Glyn Rhonwy Storage Facility and the Pentir Substation (ref. C16/0886/15/LL). This application has been subject to two further applications relating to timescale extensions, now requiring commencement of the development before 5 February 2026.

2.2.6 An application for a proposed energy storage facility approximately 0.2 km north-west of the Proposed Works Site received consent in July 2024 and remains extant (ref. C24/0532/25LL) and a subsequent related application has been submitted to connect this to Pentir Substation and is pending consideration (C25/0554/18/LL). A temporary planning permission for an energy storage system (C25/0266/18/LL) is also pending consideration, and a proposed battery energy storage (C25/0277/18/LL) is pending consideration following an EIA Screening Opinion (C25/0305/18/SC), which if implemented will further reinforce the immediate character of the area as being defined by electrical and energy infrastructure. Other planning applications in the vicinity of the Proposed Works Site include planning permission C22/1064/18/LL for the construction of temporary bellmouth that was approved in December 2023 and C24/1070/25/TR for the upgrade of five spans of existing 11 kV overhead electricity line.

2.3 Statutory and Non Statutory Designations

2.3.1 The Proposed Works Site lies within the Dinorwig 'Registered Historic Landscape' which is a registered landscape of outstanding and special interest of Wales. Many of the elements associated with this listing including the *"scenic grandeur of the area"* remain as part of the rural character of the area.

2.3.2 Two Local Wildlife Sites (LWS) are located approximately 500m north of the application site. These are the Coed Nant Y Garth Wildlife site and Tyddyn Hellyn Local Wildlife Site comprising mixed lowland woodland and streams. The Coed Pont Ladi Wen Local Wildlife Site is located approximately 550m west of the application site.

2.3.3 There is a Candidate Wildlife Site (cWS) that surrounds the Proposed Works Site, known as the Pentir Substation cWS. This comprises coniferous and broadleaved woodland and is located immediately adjacent to the substation footprint. A cWS is a site identified through initial desk-top survey of being potentially worthy of consideration. Since a full evaluation of these sites has not yet been undertaken, their biodiversity value is evaluated on a site-by-site basis when development proposals come forward in these locations.

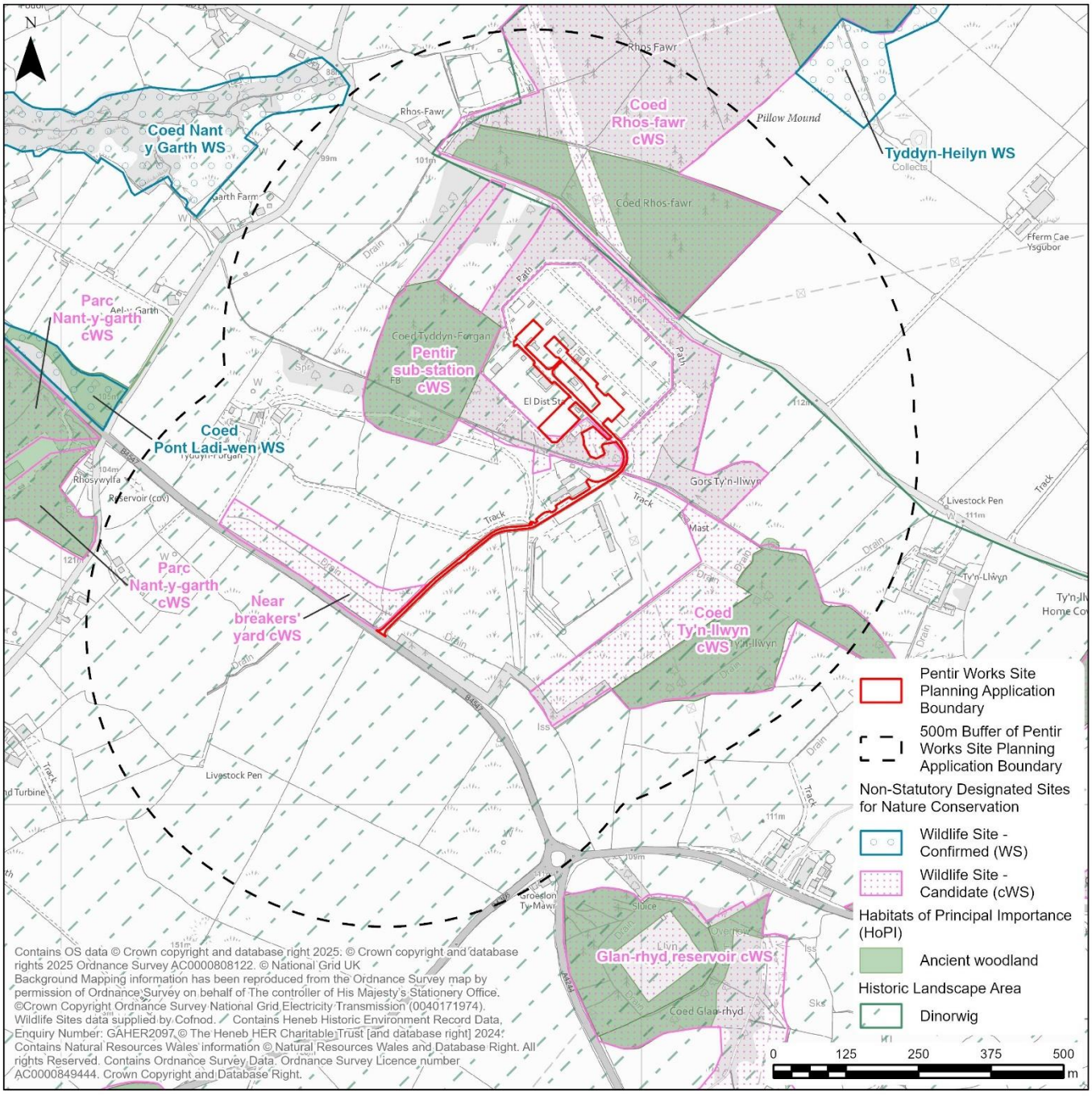
2.3.4 A Plantation on Ancient Woodland Site directly abuts the western boundary of the Pentir Substation, approximately 30 m from the Proposed Works Site, and forms part of the Pentir Substation cWS. This woodland was assessed as part of the National Grid NWC project in 2018 and determined to be in poor condition at that time.

2.3.5 **Figure 2** below shows Proposed Works in relation to the Registered Historic Landscape (blue), WS and cWS.

2.3.6 The Proposed Works Site is outside of mapped areas of flooding from small watercourses and surface water flooding as illustrated on the Natural Resources Wales Flood and Coastal Erosion Risk Maps (Ref. 1-6). It is in Flood Zone 1 and at a low risk. The Proposed Works Site also lies outside of the mapped areas of fluvial or tidal flooding in Flood Zone 1 and is at a low risk from this source. In accordance with the Natural Resource Wales Development Advice Map (Ref. 1-7), the existing access to the Pentir substation is shown to cross an area of Flood Zone B, with a moderate risk of flooding from surface water and small watercourses, however no development is

proposed in that area. The existing Pentir Substation has an operational drainage system in place.

Figure 2 Constraints Map



3. Design and Access Policy and Guidance

3.1 Introduction

3.1.1 This section provides an overview of the key planning policies and guidance relevant to the design development process of the Proposed Works. The Planning Statement sets out the planning policy context overall, including a detailed assessment of how the Proposed Works align with these policies.

3.2 National Planning Policy

Planning Policy Wales edition 12 (PPW) (2024)

3.2.1 PPW (Ref. 1-2) was published in February 2024 and sets out land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs) which are discussed later in this chapter.

3.2.2 PPW states that developments should promote 'good design' and that a DAS should explain how the objectives of good design and placemaking have been considered from the outset of the development process. Therefore, this chapter will provide a review of the policy in relation to the objectives of 'good design' and how the proposal fulfils those objectives.

3.2.3 PPW sets out land use planning policies of the Welsh Assembly Government. Design is defined in paragraph 3.3:

"Design is … the relationship between all elements of the natural and built environment and between people and places. To achieve sustainable development, design must go beyond aesthetics and include the social, economic, environmental, cultural aspects of the development, including how space is used, how buildings and the public realm support this use, as well as its construction, operation, management, and its relationship with the surrounding area."

3.2.4 Paragraph 3.5 of the PPW states that:

"Good design is inclusive design. Development proposals should place people at the heart of the design process, acknowledge diversity and difference, offer choice where a single design solution cannot accommodate all users, provide for flexibility in use and provide buildings and environments that are convenient and enjoyable to use for everyone."

3.2.5 Paragraph 3.7 sets out that good design promotes environmental sustainability. It explains that development should seek to maximise:

"energy efficiency and the efficient use of other resources including land, maximise sustainable movement, minimise the use of non-renewable resources, encourage decarbonisation and prevent the generation of waste and pollution".

3.2.6 Paragraph 3.8 sets out that:

"good design can help to ensure high environmental quality. Landscape and green infrastructure considerations are an integral part of the design process"

3.2.7 In relation to this, paragraph 3.9 sets out that,

"the special characteristics of an area should be central to the design of a development. The layout, form, scale and visual appearance of a proposed development and its relationship to its surroundings are important planning considerations…"

3.2.8 Paragraph 3.13 of PPW encourages existing infrastructure to be utilised and maximised wherever possible, to maximise accessibility, particularly by sustainable non-car modes of transport.

3.2.9 The site and context of a development should be analysed to ensure that the proposal responds to its surroundings and integrates well into the existing environment (paragraph 3.14). Paragraph 3.16 directs decision-makers to reject proposals for development which are not well-designed or do not take account of the local context or the objectives of good design.

Technical Advice Notes (TAN)

TAN 12 - Design

3.2.10 TAN 12 (Ref. 1-3) was published in March 2016 and provides supplementary design guidance for the PPW. TAN 12 sets out the five objectives of good design:

- Access – Ensuring ease of access for all.
- Character – Sustaining or enhancing local character; promoting legible development; promoting a successful relationship between public and private space; promoting quality, choice and variety; promoting innovative design.
- Community Safety – Ensuring attractive, safe public space; security through natural surveillance.
- Movement – Promoting sustainable means of travel.
- Environmental Sustainability – Achieving efficient use and protection of natural resources; enhancing biodiversity; designing for change.

3.2.11 The concepts and principles in relation to these five objectives must be explained within a DAS. TAN 12 notes that early and continued design considerations in advance of submitting a planning application are essential to achieving good design.

TAN 15 – Development, flooding and coastal erosion

3.2.12 TAN 15 (Ref. 1-9) was updated in March 2025 and provides supplementary guidance to PPW. TAN 15 provides a framework within which the flood risks arising from rivers, the sea and surface water, and the risk of coastal erosion can be assessed.

3.2.13 TAN 15 provides the requirement for Sustainable Drainage Systems (SuDS) to be incorporated into the design of development to manage run-off from development.

3.3 Local Planning Policy

Anglesey and Gwynedd Joint Local Development Plan 2011-2026

3.3.1 The adopted Anglesey and Gwynedd Joint Local Development Plan (Ref. 1-8) (the 'LDP') sets out the land use planning policies for the areas of Gwynedd and Anglesey in

relation to planning and development. The policies outlined form the basis for decision making for applications made to these local planning authorities. A number of planning policies regarding design quality, location, and layout, building design and landscaping are outlined within the Local Plan, and these policies form the basis for decision making for applications made to these local planning authorities.

3.3.2 Strategic Policy PS 5 states that developments will be supported where they are consistent with the principles of sustainable development. To meet these principles, development should promote high standards of design that make a positive contribution to the local area that can respond to future requirements and reduce crime, antisocial behaviour and the fear of crime. Proposals should also give priority to effective use of land and infrastructure, prioritizing wherever possible the reuse of previously developed land.

3.3.3 Policy PCYFF 3 sets out the policy for design and place shaping. This policy states that all proposals will be expected to "demonstrate high quality design which fully takes into account the natural, historic and built environmental context and contributes to the creation of attractive, sustainable places. Innovative and energy efficient design will be particularly encouraged". Proposals will only be acceptable if they comply with, amongst others, the following design criteria:

- The development complements and enhances the character and appearance of the site in terms of siting, appearance, scale, height, massing and elevation treatment.
- The development respects the context of the site and its place within the local landscape, its effects on townscape and the local historic and cultural heritage and considers the site topography and prominent skylines or ridges.
- It utilises materials appropriate to its surroundings and incorporates hard and soft landscaping and screening where appropriate.

3.3.4 Policy PCYFF 4 relates to landscaping and design. This policy states that all proposals should integrate into their surroundings, and failing to show how landscaping that is proportionate to the development has been considered from the outset as part of the design proposal would result in proposals being refused. The Policy supporting text explains that it is important to establish the requirements of a landscaping scheme early in the design process so that it can contribute to the overall design and layout of the development.

3.3.5 Policy AMG 6 requires the protection of sites of regional of local significance including cWS'. Where a development is granted, it will be necessary to ensure that there are appropriate mitigation measures in place to protect against direct or indirect significant harm to these sites.

3.3.6 Policy PS 20 relates to preserving and enhancing heritage assets and states that proposals will be required to demonstrate that they preserve and enhance heritage assets, Registered Historic Landscapes, and Parks and Gardens. This is further supported by Policy AT 1, which states that proposals within or affecting the setting and/or significant views into and out of Conservation Areas, World Heritage Sites and Registered Historic Landscapes, Parks and Gardens must have regard to the Register of Landscape, Parks and Gardens of Special Historic Interest in Wales. Whilst not directly related to design and access, these policies are important to consider as the design and access of the Proposed Works could impact the Registered Historic Landscape, therefore consideration of these issues is required.

4. Design

4.1 Design Evolution and Alternatives

4.1.1 As the Proposed Works require the removal of existing redundant oil-filled cables and associated electrical equipment, reconfiguring of cable terminations, and installation of replacement and new 400 kilovolt (kV) cables, within the existing Pentir Substation, consideration of alternative locations was not considered appropriate.

4.1.2 An options appraisal based on both environmental and technical constraints was undertaken, which identified five options for development within the existing Pentir Substation. It was determined all options would be acceptable in terms of environmental impacts, as they are all confined to the existing Pentir Substation boundary. It was therefore due to other constraints that options were discounted. A summary is provided as follows:

- A do nothing option was considered that would require no changes to the existing cable circuit but would not be technically compliant. The needs case for the Project would not be met and capacity would not be increased in north Wales as the cable would be a limiting factor on the circuit. This option was discounted.
- Two technical options were then considered. One of the options involves replacing cables with 400 kV Gas Insulated Busbar or Line. This was discounted as it was considered impractical for the Proposed Works Site. There is no other gas insulated equipment present on site and the size of the busbar or line would sterilise parts of the Proposed Works Site and prevent future development. The other preferred option involves replace existing underground cables with 400 kV XLPO (cross-linked Polyethylene) Cables. This option raised no immediate concerns.
- Two routing options were considered for the XLPE cables. A road route raised sustainability concerns with the need to install new HV cable troughs but also issues during construction with access being impeded. A route through the substation was preferred, avoiding the vehicle access.

4.2 Overarching Design Considerations

4.2.1 While the design of the Proposed Works is bound by its functionality, the importance of protecting the natural environment has been recognised in the design of the development.

4.2.2 The Proposed Works have been designed with consideration of the policies set out in Section 3 and has sought to consider features of the natural environment, landscape, safety and minimise any potential effects to sensitive receptors.

Ecology and the Natural Environment

4.2.3 As explained in Section 2 above, the Proposed Works are in the existing Pentir Substation. A Plantation on Ancient Woodland Site directly abuts the western boundary of the Pentir Substation and forms part of an adjacent cWS surrounds the substation footprint. Therefore, the impacts on features of the natural environment were considered

during the design. The Proposed Works, excluding the use of the unmodified existing access road, have been designed with the following buffers from key habitat features:

- 15 m from woodland;
- 10 m from hedgerows increasing to 15 m where there are hedgerow trees;
- 15 m from individual trees; and
- A minimum of 10 m from watercourses (bank top), including dry ditches, to protect riparian habitats and to mitigate for potentials hazards such as chemical and soils spills into watercourses or waterbodies, except for where the existing access track crosses watercourses.

4.2.4 The incorporation of these ecological buffers, along with the implementation of best practice and mitigation measures, including a Construction Environmental Management Plan (CEMP), demonstrates how the design of the Proposed Works has considered the effect of development on the natural environment in accordance with LDP Policies PCYFF 3, AMG 6 and PS 19, and TAN 12.

Landscape and Visual

4.2.5 The Proposed Works lie within the Dinorwig Registered Historic Landscape. Due to the nature of the Proposed Works and the existing substation in which it is proposed, the design would be sympathetic to the existing site and would not introduce any discordant features. This demonstrates compliance with PPW, as it makes efficient use of land within the existing Pentir Substation. It also complies with LDP Policy PS 5 in terms of land use as it constitutes effective use of land and infrastructure, as it uses previously developed land in an established substation. The Historic Landscape in which the Proposed Works are located would be preserved in line with LDP Policies PS 20 and AT 1. The development taking place within the existing substation footprint would not alter the setting or views.

4.2.6 The existing local landscape character will not be altered as a result of the Proposed Works as the permanent works will be wholly contained in the existing substation and are suitable in terms of siting, scale, appearance and massing, in accordance with LDP Policy PCYFF 3 and TAN 12. The Proposed Works also incorporate hard and soft landscape and screening where appropriate in compliance with PCYFF 3.

Water (Surface) and Waste Management

4.2.7 The substation has an operational drainage system in place that the Proposed Works will utilise in accordance with LDP Policies PCYFF 6 and PS 5. The Proposed Works would be classed as highly vulnerable development as defined within TAN 15 (Ref. 1-9), as it would involve works to the power and distribution elements of a power station. The Proposed Works within Pentir Substation are not in an area of risk from flooding from small watercourses and surface water flooding, and areas of fluvial or tidal flooding. The Proposed Works would not increase the impermeable area within the Proposed Work Site and the substation has an operational drainage system in place that will continue to be utilised. No additional surface water drainage or SuDs are necessary as part of the design for the Proposed Works.

4.2.8 During construction, dismantled equipment will be disposed of through designated waste recycling skips within the Proposed Works Site. In terms of waste management,

all waste material would then be disposed of off-site at designated licenced waste and recycling sites, demonstrating compliance with LDP Policy PCYFF 2.

Community Safety

4.2.9 The design of the Proposed Works has taken community safety into account in accordance with LDP Policy PCYFF 2 and TAN 12 (Ref. 1-2). Access to the existing Pentir Substation is restricted, with only authorised personnel being permitted to enter. The Proposed Works will benefit from the existing physical prevention and surveillance measures associated with the Pentir Substation, including the existing security fencing, security gates and security cameras. There is no public access to Pentir Substation.

5. The Proposed Works

5.1 Use

5.1.1 The planning application will seek planning permission for the replacement of existing underground cables and installation of new underground cables at the existing Pentir substation in North West Wales.

5.1.2 The Proposed Works form part of the Pentir to Trawsfynydd Reinforcement Project by NGET and forms an integral part of the wider network transmission upgrades required to facilitate the connection of 50 GW of offshore wind by 2030.

5.1.3 The decommissioning and removal of old and redundant electrical equipment and replacement with new cables would contribute towards increased capacity in North Wales. Should the Proposed Works not be undertaken, the existing cable would be a limiting factor on the circuit, resulting in limited capacity.

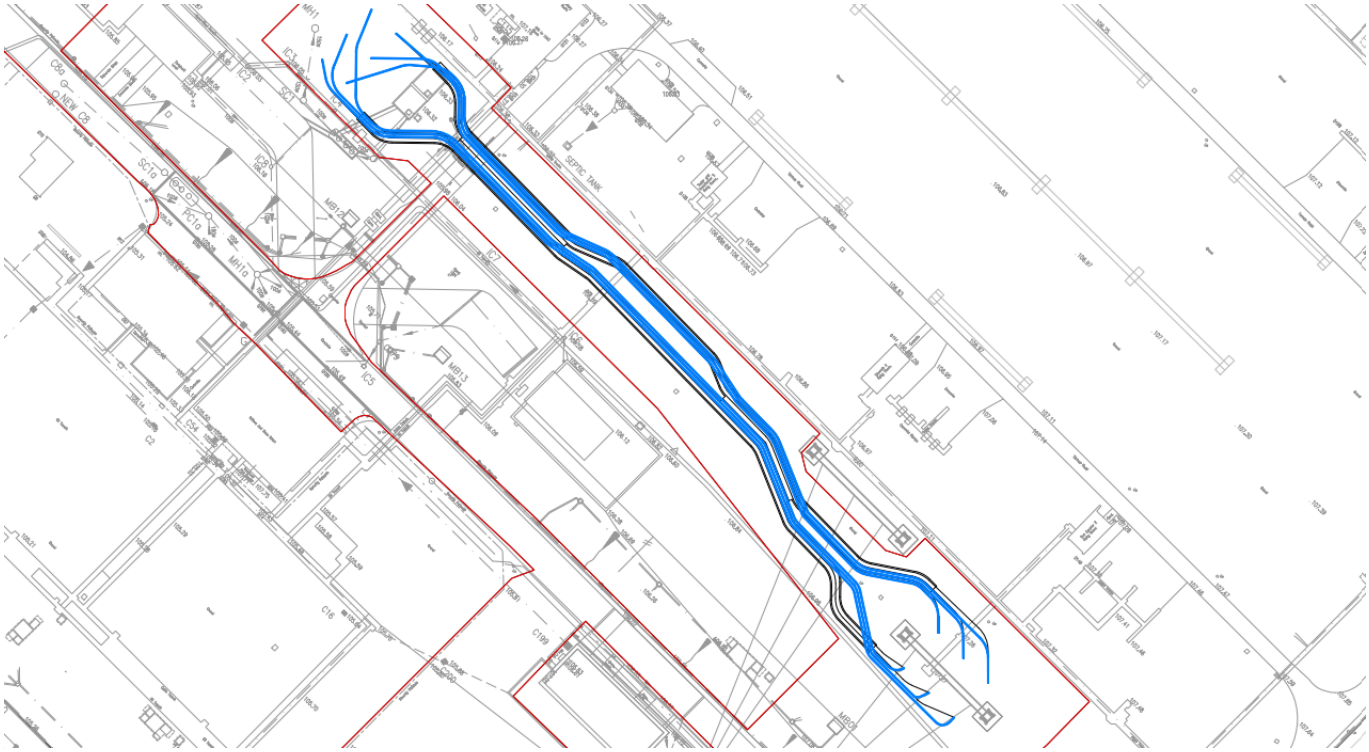
5.2 Layout

5.2.1 The layout of the Proposed Works (**Figure 3**) is based on the most efficient use of space which allows safe operation, maintenance and repair or replacement of equipment during its operational life.

5.2.2 The red line boundary covers 1.5 ha, however the proposed cabling will be underground, with associate cable sealing ends and associated steel structures above ground including a replacement section of busbar, replacement overhead line downdropper and earth switch and above and below ground earthing. These would not result in any significant change in design to the existing substation and pylons that can be seen from the public realm.

5.2.3 The layout of the Proposed Works has been determined primarily by the operational requirements of the development, but environmental and safety considerations have also been taken into account during the design process.

Figure 3: Layout of new cables within existing substation



5.3 Scale

5.3.1 The 400 kV cables would be 2,500 mm^2 single core cables. The complete outer diameter of the cable is approximately 145 mm. The cables would be contained within ducts in either a single trench or separate trenches approximately 1 m deep.

5.4 Appearance

5.4.1 The general appearance of the Proposed Works is determined through its functionality. Foundations for new cable sealing end bases would be constructed using reinforced concrete. The Proposed Works Site would also comprise steel structures and other associated electrical infrastructure.

5.4.2 The 400 kV cables would comprise a segmented copper conductor, semi-conducting polymer conductor screen, extruded cross-linked polyethylene, extruded semi-conducting polymer insulated screen, smooth welded aluminium sheath and high-density polyethylene outer sheath.

5.4.3 Within the Pentir Substation compound, all working areas would be reinstated with 300 millimetres (mm) of Type 1 stone and 75 mm of 10 mm limestone chippings.

5.5 Landscaping

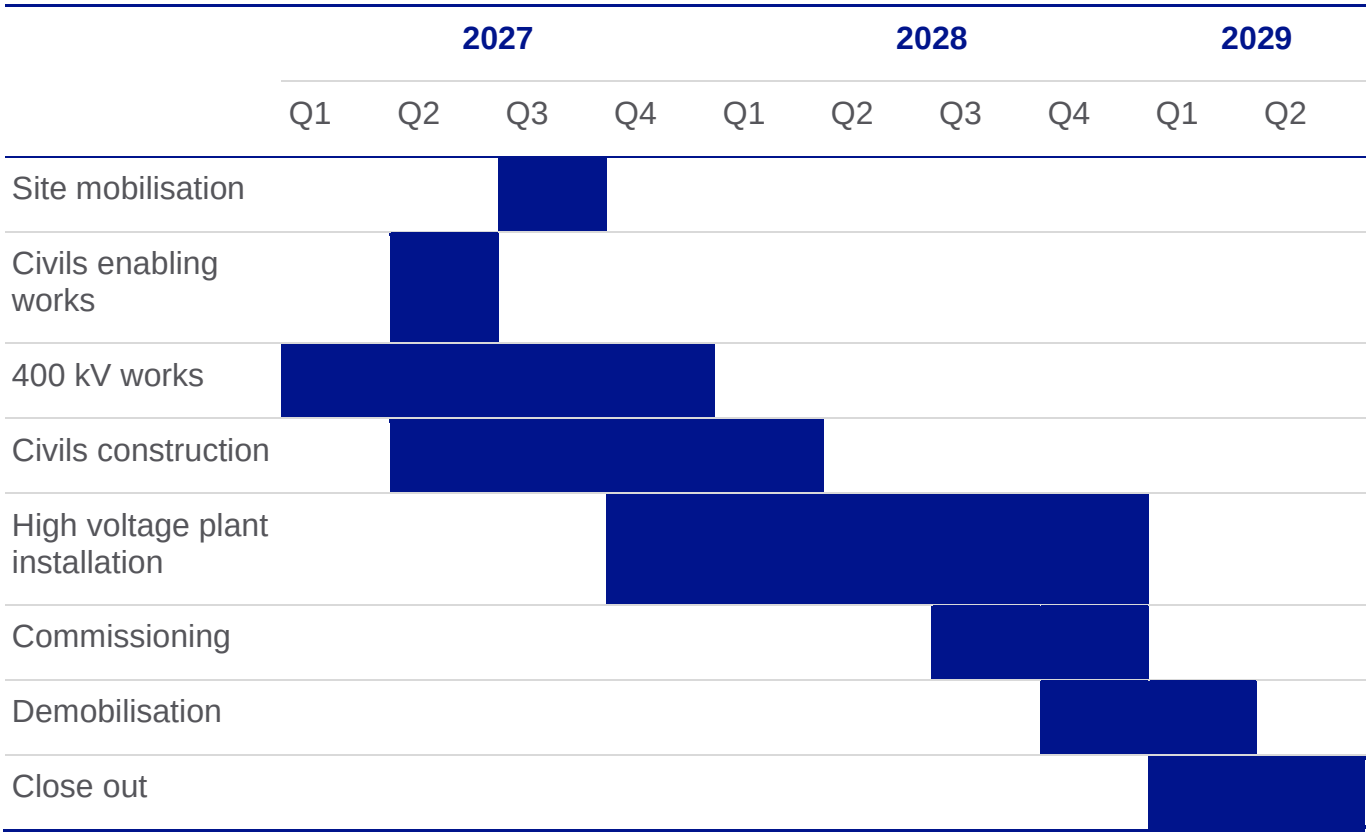
5.5.1 All of the proposed works will take place within the existing Pentir substation compound. The existing landscaping around the substation is adequate to screen the facility and no additional landscaping is considered necessary as part of this development. The existing landscaping is proportionate to the Proposed Works and would help to mitigate the impact on the surrounding landscape, in accordance with local policy PCYFF 4.

5.6 Proposed Construction

Construction Programme

5.6.1 The construction of the Proposed Works is planned to be undertaken over a period of approximately three years from Q2 2026 – Q2 2029 to coordinate with the wider Project. Construction will occur in phases which will include activities summarised in **Table 5-1** below.

Table 5-1 Construction Programme



5.6.2 Within the phases outlined above, activities will be undertaken including:

- Site mobilisation – site set up for cabins and civils.
- Civils enabling works – access, main site office establishment, earthworks, drainage and platform.
- 400 kV works – de-oiling and purging of the existing cables; removing lids, breaking concrete bound sand and exposing cables; cutting and capping and joint bays, removal of cables; and clean throughs and removal of steelwork.
- Civils construction – cable sealing end bases and structures.
- High voltage plant installation
- Commissioning – commissioning test, starting with testing the individual items of plant and culminating with testing the installed system as a whole before being brought into operation.
- Demobilisation – removal of all temporary infrastructure i.e. cabins and offices.

- Close out – handover assets and final as built drawings.

Construction Access

5.6.3 The existing metalled access road from the B4547 to the existing Pentir Substation would be utilised during construction. All construction staff and HGV movements to and from the Proposed Works Site will enter and exit via this access point exclusively. No works are required to the existing access road and no new accesses are required.

General Construction Information

5.6.4 Temporary lighting would be required in low light conditions during the construction working hours to ensure safe pedestrian passage from the working area to site welfare facilities.

5.6.5 The ducts and cable drums would be securely stored within the compound area. A combination of hydraulic winches and a crane would be used to install the cables into the ducts.

5.6.6 Sheet scaffolding would be placed around the cable sealing end structure to provide suitable access for cable termination, the scaffolding would be removed on completion

Construction Site Layout

5.6.7 The temporary construction compound would be established in the south-west corner of the existing Pentir Substation compound (See ES **Volume 2, Figure 2.2.2**). It would comprise office space, welfare facilities and laydown storage space.

5.6.8 A designated parking area immediately west of the Pentir Substation compound entrance would be used (See ES **Volume 2, Figure 2.2.2**), the area currently comprises hardstanding and would remain unmodified.

5.7 Operation and Maintenance

5.7.1 The Pentir Substation is manned and there would be no change in the current frequency of attendance, inspections and maintenance regimes during operation due to the proposed works. Maintenance of the substation is triggered by issues arising from monthly visual inspection. If the substation required refurbishment or replacement works, these are accessed via the existing access road from the B4547.

5.7.2 Emergency access to the Proposed Works Site will be provided via Pentir Substation Access (B4547).

6. Conclusion

6.1.1 This Design and Access Statement has been prepared to accompany a planning application by NGET for the replacement of existing underground cables and the installation of new underground cables in the existing substation compound at Pentir Substation. It has considered the Proposed Works in relation to relevant national and local policies.

6.1.2 The Proposed Works form part of the Project which will deliver upgrades to the wider transmission network required to facilitate the connection of 50 GW of offshore wind by 2030.

6.1.3 The Project will increase capacity in north Wales. Should the Proposed Works not be undertaken, the existing cabling would be a limiting factor on the circuit, resulting in limited capacity.

6.1.4 Optioneering was undertaken during the development of the design, applying best practice principles to establish the most effective course of action for the Proposed Works. This process involved:

- Environmental considerations to ensure the Proposed Works would integrate into the existing substation footprint without leading to environmental degradation.
- Technical considerations to ensure the safe and efficient operation of the Proposed Works.
- Adherence to relevant national and local planning policies and design guidance.

6.1.5 In accordance with the requirements of the Planning (Wales) Act 2015 (Ref. 1-10), the Applicant is undertaking a statutory pre-application consultation for the Proposed Works. The purpose of the consultation is to provide statutory consultees, interested parties and members of the public with an opportunity to review and comment on the proposals and work undertaken to date, prior to the submission of the planning application to Gwynedd Council.

6.1.6 In summary, the design of the Proposed Works has been developed following optioneering and technical considerations, while demonstrating compliance with national and local planning policy.

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