

Chapter 13

Historic Environment

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13. Historic Environment

13.1 Introduction

13.1.1 This chapter of the PEIR provides an assessment of the effects on the historic environment arising from the construction, operation, and decommissioning of the Project.

13.1.2 Historic assets include Scheduled Monuments, Listed Buildings, Registered Historic Parks and Gardens, Registered Historic Landscapes, Conservation Areas, upstanding archaeological earthworks and buried remains, and historic hedgerows. For the ease of presentation in this document, all cultural heritage features are referred to as ‘historic assets’.

13.1.3 A detailed description of Project and Project Site is provided in **Chapter 3: Project and Site Description**. A glossary of terms and list of abbreviations used in this chapter is provided at the start of this PEIR.

a) Objectives of the assessment

13.1.4 The purpose of this chapter is to outline the historic environment resource of the Project Site and its environs, to identify potential constraints to the Project, to assess the likely significant impacts on historic environment receptors, to formulate mitigation measures where a significant impact is identified, and to quantify any residual effects.

13.1.5 The following tasks were undertaken for this assessment:

- Legislation and policy context review;
- Consultation with statutory and non-statutory bodies to identify interests and concerns regarding cultural heritage;
- Desk-based study to obtain baseline archaeological and historical data;
- Site survey to augment desk-based baseline data;
- Identification of the potential impacts of the Project and assessment of their significance; and
- Formulation of mitigation of potential impacts.

13.2 Changes since the 2014 PEIR

13.2.1 The main updates to this chapter since the 2014 PEIR have been in response to the change in stack height (to a maximum of 45 m instead of 40 m) and reduction in stacks as outlined in Section 3.2 in **Chapter 3: Project and Site Description**. Updates have also been made to the desk study due to the length of time since the previous update and to undertake further consultation to inform and update archaeological advisors. These changes have not changed the findings of this chapter.

13.2.2 This assessment has therefore been compiled with further and on-going consultation with the archaeological advisors to CCS (the Glamorgan-Gwent Archaeological Trust (GGAT) Curatorial Section) and Cadw (the Welsh

Government's Historic Environment Service). Full details of the consultations undertaken since 2014 can be found in Section 13.4.4 (b).

13.3 Legislation, policy and guidance

13.3.1 This section identifies and describes legislation, policy and guidance of relevance to the assessment of the potential impacts associated with the construction, operation and decommissioning of the Project, upon historic assets.

13.3.2 Legislation and policy has been considered on a national, regional, and local level, although no relevant regional-level legislation or policy was identified. The following is relevant to the assessment as it has influenced the sensitivity of receptors and requirements for mitigation or the scope and/or methodology of the Environmental Impact Assessment (EIA).

a) National

i. Overarching National Policy Statement for Energy (NPS EN1; Ref. 13.1)

13.3.3 Paragraph 5.8.1 of National Policy Statement for Energy (NPS) EN1 states that the construction, operation, and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment. Paragraph 5.8.2 defines the historic environment as including all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, landscaped and planted or managed flora. Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called heritage assets. The NPS defines a 'heritage asset' as any building, monument, site, place, area or landscape, or any combination of these. The sum of the heritage interests that a 'heritage asset' holds is referred to as its significance.

13.3.4 Paragraph 5.8.3 of the NPS discusses 'Heritage Assets' that merit designation and identifies these as assets falling within the following categories:

- A World Heritage Site;
- Scheduled Monument;
- Protected Wreck Site;
- Protected Military Remains;
- Listed Building;
- Registered Park and Garden;
- Conservation Area; and
- Registered Historic Landscape (Wales only).

13.3.5 Paragraph 5.8.4 of the NPS goes on to highlight that there are heritage assets with archaeological interest that are not currently designated as scheduled monuments, but are demonstrably of equivalent significance. These include: (i) those that have yet to be formally assessed for designation; (ii) those that have been assessed as being designatable but the SoS has decided not to designate; and (iii) those that

are incapable of being designated by virtue of being outside the scope of the Ancient Monuments and Archaeological Areas Act 1979.

- 13.3.6 In paragraph 5.8.5, the NPS notes that the absence of designation for such heritage assets does not indicate lower significance. If the evidence before the SoS indicates that a non-designated heritage asset of the type described in 5.8.4 of the NPS may be affected by the proposed development then the heritage asset should be considered subject to the same policy considerations as those that apply to designated heritage assets.
- 13.3.7 Paragraph 5.8.6 dictates that the SoS should also consider the impacts on other non-designated heritage assets, as identified either through the development plan-making process (local listing) or through the SoS's decision-making process on the basis of clear evidence that the assets have a heritage significance that merits consideration in its decisions, even though those assets are of lesser value than designated assets.
- 13.3.8 Paragraph 5.8.8 of the NPS states that, as part of the applicant's assessment, the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the heritage asset. As a minimum, the applicant should have consulted the relevant Historic Environment Record (HER) and assessed the heritage assets themselves, using expertise where necessary according to the proposed development's impact.
- 13.3.9 Paragraph 5.8.9 of the NPS is concerned with heritage assets with archaeological interest and states that the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation.

Infrastructure Planning (Decisions) Regulations 2010

- 13.3.10 Section 104(2)(c) of the PA 2008 provides that in deciding an application under the PA 2008, the SoS must have regard to any "*any matters prescribed in relation to development of the description to which the application relates*".
- 13.3.11 Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010 sets out such a prescribed matter. It provides that:
- 1) When deciding an application which affects a listed building or its setting, the decision-maker must have regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses.
 - 2) When deciding an application relating to a conservation area, the decision-maker must have regard to the desirability of preserving or enhancing the character or appearance of that area.

- 3) When deciding an application for development consent which affects or is likely to affect a scheduled monument or its setting, the decision-maker must have regard to the desirability of preserving the scheduled monument or its setting.

13.3.12 In carrying out this assessment, APL has had regard to these considerations.

The Ancient Monuments and Archaeological Areas Act 1979

- 13.3.13 The Act (Ref. 13.2) imposes a requirement for Scheduled Monument Consent for any works of demolition, repair and alteration that might affect a Scheduled Monument. The Act sets out a presumption in favour of preservation in-situ concerning sites and monuments of national importance.

The Planning (Listed Buildings and Conservation Areas) Act 1990

- 13.3.14 The Act (Ref. 13.3) sets out the principal statutory provisions which must be considered in the determination of any application affecting either listed buildings or conservation areas.

- 13.3.15 Section 66 of the Act states that, in considering whether to grant planning permission for development that affects a listed building or its setting, the local planning authority or the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest it possesses. By virtue of Section 1(5) of the Act, a listed building includes any object or structure within its curtilage.

- 13.3.16 Section 66 applies in relation to a consideration of whether to grant 'planning permission'. 'Planning permission' is defined under Section 91(2) of that Act as having the same meaning as in the principal Act (which is defined as the Town and Country Planning Act 1990 (TCPA 1990)). 'Planning permission' is defined under the TCPA 1990 as a permission under Part III of that Act. Under Part III of that Act, planning permission is required for the carrying out of any development of land (Section 57). Section 33(1)(a) of the PA 2008 provides that, to the extent that development consent is required for a development, planning permission is not required under the TCPA 1990. Therefore, Section 66 does not apply to decisions under the PA 2008.

- 13.3.17 Section 66 will apply for applications made under the Town and Country Planning Act 1990 for the Gas Connection and/or the Electrical Connection.

- 13.3.18 Although APL considers that Section 66 does not apply to decisions under the PA 2008, it has taken into account the principles from the *Barnwell Manor* Court of Appeal case in undertaking this assessment (see *Barnwell Manor Wind Energy Ltd v E. Northants DC English Heritage, National Trust & SSCLG* [2014] EWCA Civ 137). This is because, pursuant to Section 104(2)(d) of the PA 2008, the Secretary of State must have regard to "*any other matters which the Secretary of State thinks are both important and relevant*".

- 13.3.19 In the *Barnwell Manor* case, the Court of Appeal held that decision makers should give 'considerable importance and weight' to the desirability of preserving the

setting of listed buildings when carrying out the required balancing exercise pursuant to Section 66(1).

The Hedgerow Regulations 1997

13.3.20 The Hedgerow Regulations (Ref. 13.4) allow for provisions to be made for, or in connection with, the protection of important hedgerows in England or Wales from activities that are not necessarily subject to planning consent. The identification of a hedgerow as ‘important’ was to be determined in accordance with criteria laid out in Hedgerow Regulations 1997.

13.3.21 The regulations state that a hedgerow is important if it is at least 30 years old and meets one of the following criteria:

- Marking a boundary of a historic parish or township (prior to 1850);
- Associated with a Scheduled Monument or site on the Sites and Monuments Record (now HER) at the relevant date;
- Marks the boundary of a pre-1600 AD estate or manor, or associated with a building of such a manor or estate;
- Part of a field system pre-dating the Inclosure Act (1845); or
- Related to a building or feature associated with a system pre-dating the Inclosure Act (1845) and that system is substantially complete or part of field system where the pattern was identified in 1997 as a key landscape characteristic.

Historic Environment (Wales) Act 2016

13.3.22 The Act (Ref. 13.5) makes amendments to the Ancient Monuments and Archaeological Areas Act 1979 and to the Planning (Listed Buildings and Conservation Areas) Act 1990 as they apply to Wales. The Act provides a better means of protecting scheduled monuments and listed buildings in Wales, aids in the management of the historic environment and imposes a greater degree of transparency and responsibility concerning decisions affecting the historic environment. It also makes provisions for the compilation of historic place names, a historic environment record for each local authority in Wales, and for the establishment of the Advisory Panel for the Welsh Historic Environment.

Planning Policy Wales 2016

13.3.23 The Welsh Government’s Planning Policy Wales (PPW 2016; Edition 9, November 2016) (Ref. 13.6) aims to protect the historic environment, including archaeology and ancient monuments, listed buildings, conservation areas and historic parks, gardens and landscapes. This national policy provides guidance to local planning authorities during the determination of planning applications and makes it clear that there is no need for local plans to duplicate national policy.

13.3.24 Chapter 6 of PPW 2016 specifically relates to the protection of the historic environment in Wales. The objectives of PPW 2016 are to:

- Conserve and enhance the historic environment, which is a finite and non-renewable resource;

- Recognise its contribution to economic vitality and culture, civic pride, local distinctiveness and the quality of Welsh life, which must be maintained for future generations;
- Base decisions on an understanding of the significance of historic assets and to contribute to the recording of these assets and making these publically available; and
- Protect World Heritage Sites, safeguard the character of historic buildings, preserve or enhance conservation areas, historic parks and gardens and historic landscapes, and to conserve archaeological remains for their role in education, leisure and the economy.

Technical Advice Notice (TAN) 24 (to PPW 2016)

13.3.25 TAN 24 (Ref. 13.7) is supplement to PPW 2016 which details the advice regarding archaeology and the planning process within Wales. The purpose of this TAN is to provide technical guidance on how the planning system considers the historic environment during development plan preparation, and decision-making on planning and Listed Building applications. This TAN provides specific guidance on how the following aspects of the historic environment should be considered: World Heritage Sites; Scheduled Monuments; archaeological remains; Listed Buildings; Conservation Areas; historic parks and gardens; historic landscapes; and historic assets of special local interest.

b) Local

City and County of Swansea (CCS) Unitary Development Plan (UDP)

13.3.26 The CCS UDP (as detailed in **Chapter 2: Regulatory and Policy Background**) (Ref. 13.8) was adopted in November 2008 and sets out the key policy relating to the historic environment, as follows.

13.3.27 Policy EV6 states that the Council will seek to protect, preserve and enhance Scheduled Monuments and their settings, and also unscheduled archaeological sites and monuments and their settings. Applicants are required to submit an assessment which enables the historic environment baseline, the development impact, and the proposed mitigation to be clearly understood.

13.3.28 Policy EV9 states that development within or adjacent to a conservation area will only be permitted if it would preserve or enhance the character or appearance of the conservation area or its setting.

13.3.29 Policy EV11 states that development that would harm the character or setting of registered Historic Parks and Gardens or the character of Historic Landscapes will not be permitted.

13.3.30 Policy EV12 states that character of lanes and public paths that contribute to the amenity, natural, and historic qualities of an area will be protected. Development proposals that include requirements to set back improvement lines, remove hedgerows, and provide new access and visibility splays will be resisted where this would result in a loss of character. In rural areas the design of any necessary works

should be appropriate to the character of the area and should not detract from the landscape or suburbanise the area.

City and County of Swansea Deposit Local Development Plan

13.3.31 The City and County of Swansea Deposit Local Development Plan (Ref. 13.8) sets out the key policy relating to the historic environment (as discussed in detailed in **Chapter 2: Regulatory and Policy Background**), and summarised below:

13.3.32 Strategic Policy HC1 – Historic and Cultural Environment, states that the County's distinctive historic and cultural environment will be preserved or enhanced by:

- Requiring high quality design standards in all development proposals to respond positively to local character and distinctiveness;
- Identifying and safeguarding heritage assets, sites and their settings;
- Supporting heritage and cultural led regeneration schemes; and
- Safeguarding and promoting use of the Welsh language.

13.3.33 The above policy therefore seeks to secure the sustainable management, preservation and enhancement of the character and appearance of the historic and cultural environment, whilst supporting appropriate heritage-led regeneration proposals to release the social and economic potential of these assets.

13.3.34 Strategic Policy HC2 – Preservation or Enhancement of Buildings and Features states that the County's buildings and features of historic importance will be preserved or enhanced through the following measures:

- Proposals for alteration and/or extension to a listed building or its curtilage must ensure that the special architectural character or historic interest is preserved;
- The change of use of a listed building or its curtilage will only be permitted where this contributes towards the retention of a building or its sustainable reuse without having an adverse effect on its character, special interest or structural integrity;
- Permission will not be granted for the total or substantial demolition of a listed building, or an unlisted locally important building that makes a positive contribution to the character or appearance of an area, unless there is the strongest justification and convincing evidence that the proposal is necessary;
- Proposals which have a relationship to a listed building or its curtilage must ensure that the setting is preserved;
- Development within or adjacent to a conservation area will only be permitted if it would preserve and enhance the character or appearance of the conservation area or its setting. New development in such locations must also be of a high standard of design, respond to the area's special characteristics, and pay particular regard to:
 - Important views, vistas, street scenes, roofscapes, trees, open spaces, gaps and other features that contribute to the character or appearance of the conservation area;
 - The retention of historically significant boundaries or other elements that contribute to the established form of development;

- The relationship to existing buildings and spaces, and grain of development;
- Scale, height and massing, architectural design, established architectural detailing, the use of materials, boundary treatment, and public realm materials; and
- Ensuring that development does not have a significant adverse effect upon historic assets of special local interest.

13.3.35 The policy seeks to ensure that the conservation of the whole built environment is taken into consideration in the determination of applications for both listed building consent and conservation area consent. It also seeks to ensure that any new development accords with the special architectural and historic interest of designated conservation areas and their settings. Whilst the character or appearance of conservation areas must be a major consideration, it does not preclude carefully considered contemporary design. Development proposals will be judged for their effect on the character and appearance of conservation areas. It must be noted that this is an emerging policy.

c) Best practice guidance documents

Conservation Principles for the Sustainable Management of the Historic Environment in Wales

13.3.36 These principles (Ref. 13.10) provide the basis upon which Cadw discharges its statutory duties, and advises and makes decisions regarding changes made to historic assets. Cadw encourages the use of the principles to assess any potential impacts on the significance of any historic asset during potential developments.

The Setting of Historic Assets in Wales

13.3.37 This document (Ref. 13.11) outlines the definition of the term ‘setting’ and how this can contribute to the significance of a historic asset. It also explains the standards used to assess the potential impact of a development within the setting of World Heritage Sites, ancient monuments (scheduled and unscheduled), listed buildings, registered historic parks and gardens, and conservation areas. These principles can apply to all types of historic assets regardless of their designation.

Standard and Guidance for Historic Environment Desk-based Assessments

13.3.38 This assessment (Ref. 13.12) complies with the professional guidance laid out by the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-based Assessments*.

13.4 Methodology

a) Scope of the assessment

13.4.1 The scope of this assessment has been determined through a formal EIA scoping process undertaken with the Planning Inspectorate (PINS). Comments raised on the EIA Scoping Report have been taken into account in the development of the assessment methodology and, where relevant, these are detailed within this

chapter. Responses to the comments raised in the EIA Scoping Opinion can be found in Appendix 4.1.

13.4.2 The sources consulted in the course of this assessment are as follows:

- Cadw (scheduled monuments, listed buildings, registered historic parks and gardens, and registered historic landscapes);
- Historic Environment Record (HER) curated by GGAT (non-designated assets: enquiry no. 5654);
- National Monuments Record (NMR) curated by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) (non-designated assets: enquiry no. RC17-0698);
- Central Register of Air Photography for Wales (CRAPW) (aerial photographs: enquiry no. W-AP-PR 17-200);
- Natural Resources Wales (NRW) (LiDAR); and
- Published sources, unpublished reports and historic maps.

b) Consultation

13.4.3 The scope of the assessment has been informed by ongoing consultation with statutory consultees throughout the design and assessment process, including:

- Cadw (designated historic assets, and registered historic parks, gardens and landscapes); and
- Glamorgan-Gwent Archaeological Trust (Curatorial Section) in its capacity as the archaeological advisors to CCS.

13.4.4 A summary of the comments raised and responses are detailed in Table 13-1.

Table 13-1: Summary of consultation responses that have informed the scope and methodology of the historic environment assessment

Consultee	Date	Comment	Response
SoS Scoping Opinion (paragraph 3.91)	August 2014	The SoS recommends the inclusion of aerial photographs within search information and draws the applicant's attention to the comments of Cadw in this regard.	Aerial photographs held by Central Register of Air Photography for Wales and LiDAR data held by NRW was used in searches as advised.
SoS Scoping Opinion (paragraph 3.92)	August 2014	The SoS directs the applicant to Cadw's comment regarding the referenced Standard and Guidance for Archaeological Assessment (2011) being superseded by the Standard and Guidance for historic environment desk-based assessment (2012).	Current ClfA guidance (2017) was used.
SoS Scoping Opinion (paragraph 3.93)	August 2014	The SoS notes the comments of Cadw in regard to the assessment on the setting of designated assets, it is recommended that photographs from each asset towards the development be produced and where an	The current guidance document, Setting of Historic Assets in Wales (Cadw 2017), was used

Consultee	Date	Comment	Response
3.93)		adverse impact is thought likely to occur a photomontage should be produced.	during this assessment.
SoS Scoping Opinion (paragraph 3.94)	August 2014	The SoS directs the applicant to Cadw's comment regarding the reference to Registered Battlefields; as not applicable in Wales this reference should be removed, but the ES should include consideration of potential impacts to Registered Historic Landscapes.	Registered Historic Landscapes formed a part of the baseline search undertaken for this assessment. Registered battlefields were omitted.
SoS Scoping Opinion (paragraph 3.95)	August 2014	The SoS recommends that tranquillity be added to the list of factors considered relevant when assessing impacts on setting.	Cadw guidance note for setting (2017) refers to a variety of attributes of setting, of which tranquillity is one (see para 13.4.16).

c) Study area

13.4.5 This assessment adopts three 'Study Areas', as follows:

- Project Site;
- 1 km Study Area (1 km buffer around the Project Site); and
- 5 km Study Area (5 km buffer around the Project Site).

13.4.6 A full suite of baseline data for both designated and non-designated assets has been gathered for the Project Site and 1 km Study Area (Figure 13.1). This provides information about all known assets within the Project Site (i.e. those potentially impacted by the development) and the broader context in which they exist. These data also provide a potential indication of the date and character of any undiscovered archaeology that may be present. The decision to adopt a 1 km Study Area is based on professional judgement.

13.4.7 The 5 km Study Area enables the assessment of effects upon the setting of designated historic assets (Figure 13.2). Only data for designated assets has been acquired for this study area. The Zone of Theoretical Visibility (ZTV) for the Project has been established by **Chapter 11: Landscape and Visual Effects** (Figure 11.7) and has been refined in the field by both the landscape architect and the archaeologist undertaking the assessment. The field visits enable the true situation on the ground to be appreciated, particularly in terms of the role of tree cover and other vertical landscape elements which dictate the availability of long-distance views. This has been used to help define the potential visibility from heritage assets within the 5 km Study Area used within this chapter.

13.4.8 In subsequent parts of this chapter, where reference is made to the 'Study Areas', this applies to all ground within the Project Site, 1 km and 5 km study areas.

d) Site visit

13.4.9 The Project Site and the 1 km Study Area were visited on 8th November 2017. The purpose of this survey was to assess the character of known historic assets, identify any additional visible assets, and to assess possible factors which may affect the survival or condition of known or potential assets. Additionally, the 5 km Study Area was visited in order to allow an assessment of the potential for impacts on the significance of the setting of selected designated historic assets.

e) Sensitivity

i. Sensitivity of historic assets

13.4.10 This assessment adopts the criteria for value set out in the Design Manual for Roads and Bridges (DMRB), Volume 11 Section 3 Part 2, Annex 5 Archaeological Remains, Annex 6 Historic Buildings and Annex 7 Historic Landscape (Ref. 13.13), Table 13-2). The value of a historic asset reflects its significance and, therefore, its sensitivity to change.

13.4.11 The Cadw document Conservation Principles (Ref. 13. 13.11) offers further complementary guidance relating to the assessment of asset value. It states that cultural heritage significance is based upon a set of prescribed values: aesthetic; communal; historic; and evidential. In order to identify the heritage value of an asset, its history, fabric, and character must first be understood. The relative significance of the different values then needs to be considered. It will be necessary to compare the values of the asset under consideration with others in the locality, region or even nationally, depending on its importance.

Table 13-2: Value/sensitivity of historic assets

Value/Sensitivity	Asset type
Very High	<ul style="list-style-type: none"> • Assets described as being of universal international importance, such as World Heritage Sites • Assets that contribute significantly to acknowledged international research objectives • Buildings of recognised international importance • Historic landscapes of international value, whether designated or not • Extremely well preserved historic landscapes with exceptional coherence, time-depth or other critical factor(s)
High	<ul style="list-style-type: none"> • Scheduled Monuments with extant remains, or sites and remains of comparable quality • Assets that contribute significantly to acknowledged national research objectives • Grade I and Grade II* Listed Buildings • Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in their listing grade, including non-designated structures of clear national importance • Conservation areas containing very important buildings

Value/Sensitivity	Asset type
	<ul style="list-style-type: none"> Designated and non-designated historic landscapes of outstanding interest of high quality and importance, and of demonstrable national value
Medium	<ul style="list-style-type: none"> Designated or undesignated assets that contribute to regional research objectives Grade II Listed Buildings Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historic association Conservation areas containing important buildings Historic Townscape or built-up areas with historic integrity in their buildings, or built settings (e.g. including street furniture and other structures) Designated special historic landscapes and non-designated landscapes that would justify special historic landscape designation, landscapes of regional value
Low	<ul style="list-style-type: none"> Sites of low importance Assets compromised by poor preservation and/ or poor survival of contextual associations Locally listed buildings Historic (unlisted) buildings of modest quality in their fabric or historical association Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures) Undesignated historic landscapes Historic landscapes with importance to local interest group
Negligible	<ul style="list-style-type: none"> Assets with very little or no surviving archaeological interest Buildings of no architectural or historical note; buildings of an intrusive character Landscapes with little or no significant historical interest
Unknown	<ul style="list-style-type: none"> Assets the importance of which has not been ascertained

f) Magnitude

13.4.12 The criteria for magnitude of harm (impact) are set out in Table 13-3.

Table 13-3: Criteria for magnitude of harm (impact)

Magnitude of harm (impact)	Description
High	<ul style="list-style-type: none"> Total loss or significant change in environmental factors; Complete destruction of the site or feature; Change to the site or feature resulting in a fundamental change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

Magnitude of harm (impact)	Description
Medium	<ul style="list-style-type: none"> Significant change in environmental factors; Change to the site or feature resulting in an appreciable change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Low	<ul style="list-style-type: none"> Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Negligible	<ul style="list-style-type: none"> Negligible change or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

g) Effect definitions

13.4.13 Table 13-4 is a matrix that combines asset value with impact magnitude. Effects are either positive or negative, and either significant or not significant. For the purposes of this assessment, major and moderate impacts are considered to be significant.

Table 13-4: Significance of effect

Magnitude	Value and sensitivity of receptor				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

h) Setting of historic assets

13.4.14 The principles of historic setting are expressed in a number of planning-related documents, including for Wales within *Conservation Principles* and the *Setting of Historic Assets in Wales* (Ref. 13.10 and Ref. 13.11). The latter also sets out a staged approach for the assessment of the impact of change or development within the setting of historic assets, as follows:

- Stage 1: Identify the historic assets that might be affected by a proposed change or development;
- Stage 2: Define and analyse the settings to understand how they contribute to the significance of the historic assets and, in particular, the ways in which the assets are understood, appreciated and experienced;
- Stage 3: Evaluate the potential impact of a proposed change or development on that significance; and
- Stage 4: If necessary, consider options to mitigate or improve the potential impact of a proposed change or development on that significance.

13.4.15 Beyond these broad guidelines on process, there is no detailed methodology prescribed for the assessment of visual impacts on cultural heritage assets in Wales.

13.4.16 Factors that may contribute to the setting of a historic asset are defined as follow:

- Functional and physical relationships with other structures/historic assets and how these have changed over time;
- Topographic features that influenced its location;
- Physical character of the surrounding landscape or townscape, including any formal design or land use;
- The original layout of the historic asset and how this has changed;
- Potential buried or archaeological elements surrounding the historic asset;
- Views to, from and across the historic asset or place;
- Formal or planned vistas;
- The prominence of the historic asset in views throughout the surrounding area
- Views associated with the aesthetic, functional or ceremonial purpose of the asset; for example, defensive sites, beacons or designed landscapes;
- Historical, artistic, literary, place name, cultural or scenic associations might all contribute to the significance of a historic asset;
- Other sensory elements — noise or smell associated with the historic asset; and
- Tranquillity, remoteness, 'wildness'.

13.4.17 In respect of setting, Cadw guidelines laid out within the *Setting of Historic Assets in Wales* (Ref. 13.11) suggest that impacts be ascribed a positive, neutral or negative description with varying degrees of magnitude. Within this assessment, the same categories for magnitude of harm are applied as for all other effects (Table 13-3).

13.5 Baseline Environment

13.5.1 The following sections describe the archaeological and historical context of the 1 km and 5 km Study Areas and the known sites within it. Full details are contained in the cultural heritage gazetteer: Appendix 13.1, and the assets are shown on Figures 13.1 and 13.2.

13.5.2 In the following discussion, the following asset identity codes (IDs) are used:

- Five digit IDs with a letter suffix (w) are Primary Record Numbers (PRNs) recorded in the GGAT HER;
- Five or six digit IDs without a letter suffix are National Primary Record Numbers (NPRNs) of the NMR;
- Numbers preceded by the letters 'LB' are Listed Buildings;
- Numbers prefixed by the letters 'GM' are Scheduled Ancient Monuments; and
- Numbers prefixed by the letters 'AB' are new assets identified by the present assessment.

13.5.3 Table 13-5 summarises the number of historic assets within the Project Site, and within the 1 km and 5 km Study Areas.

Table 13-5: Summary of historic assets

Historic Asset	Project Site	1 km Study Area	5 km Study Area
Scheduled Monument	0	1	16
Listed building (Grade I)	0	0	1
Listed building (Grade II*)	0	1	6
Listed Building (Grade II)	0	0	45
Listed building (all grades)	0	1	52
Non-designated asset	0	28	N/A
Conservation area	0	0	2
Registered Historic Parks and Gardens	0	0	3
Registered historic landscape	0	0	0

a) Palaeolithic and Mesolithic (1,000,000 – 4000 BC)

13.5.4 Evidence for human activity during the Palaeolithic period is extremely sparse across Wales as a whole, with the principal find-sites being concentrated on the Carboniferous Limestone zone of the south-west coast and north-east Wales. The known settlement sites in South Wales have been discovered within caves, with no open sites yet recognised. The coast of Gower has yielded several very significant sites, but there is nothing known closer to the Study Area, nor have any stray finds been recovered locally. Although the Mesolithic period is somewhat better represented across Wales as a whole, known sites in South East Wales are once again concentrated in coastal areas, with few discoveries made in inland locations. No Mesolithic sites or finds are known within the Study Areas (Ref. 13.14).

b) Neolithic and Bronze Age (4000 – 700 BC)

13.5.5 The Neolithic period in Britain is differentiated from the preceding Mesolithic by the onset of a series of profound social, technological, and economic changes. The period coincides with the first domestication of animals and of cereal cultivation, and is accompanied by changes in material culture, including the development of ceramics and new lithic typologies. It was also a time when long-distance connections developed across Britain, Ireland and mainland Europe, alongside mechanisms of long-distance exchange, principally of lithic artefacts (Ref. 13.15 and Ref. 13.16). From this period the evidence for human activity increases significantly across Wales, and it becomes possible to discuss the Study Areas specifically, as opposed to merely the broader regional pattern.

13.5.6 Neolithic communities were the first to leave their mark prominently on the landscape through the construction of monuments, which have traditionally dominated interpretations of the period. The emergence of monumental architecture provides evidence for new forms of social organisation and complexity,

including ritualised mortuary activity involving formal burial deposition, ceremonial practices and the construction of social and cultural identities. The range of monument types present in South Wales is narrower than in areas such as Wessex, but its uplands are characterised by numerous, highly visible Neolithic and Bronze Age funerary and ritual monuments (Ref. 13.17) – principally but not exclusively in the form of cairns. The majority of cairns were funerary monuments, although some may have served as memorials or have marked territorial boundaries. Very many appear to have been located for dramatic effect, often on ridge crests or on the saddle of hills close to well-travelled paths (Ref. 13.18 and Ref. 13.19). Others had utilitarian origins, having been formed by field clearance for agriculture: however, dating these latter features is difficult and some could plausibly relate to more recent times.

13.5.7 Within the Study Areas there are five cairns of presumed Neolithic to Bronze Age date that are designated as Scheduled Monuments. All are shown on Figure 13.2. These comprise a ring cairn on Craig Fawr (SM GM380), Pant-y-Ffa Round Cairn (SM GM201), Mynydd Pysgodlyn Round Barrow (SM GM202), Garn Goch Round Barrow (SM GM199), and a ring cairn on Tor Clawdd (SM GM353). The visual interrelationship of such monuments is a well-established concept as a key to understanding their positioning within the landscape. A study of a stone alignment at Bancbryn, located approximately 3 km north of Tor Clawdd (8 km from Project; not illustrated), posits that the inter-visibility between those stones and Hartland Point, on the north Devon Coast, is significant. Incorporated into this alignment is Tor Clawdd, which is framed to the left side of the Hartland Point (Ref. 13.18).

13.5.8 There is no evidence for contemporary settlement within the Study Areas.

c) Iron Age (700 BC – AD 43)

13.5.9 The society that emerged in the Late Bronze Age and Iron Age was markedly different from its predecessor. The emergence of the hillfort points to a changing emphasis in the settlement pattern and to a radically altered social dynamic.

13.5.10 Although hillforts are the dominant monument of the period within the modern landscape, they are known to have existed in conjunction with wider undefended rural settlement, of which traces are mostly ephemeral and easily destroyed by cultivation. As Lynch et al. comment, ‘though overshadowed by the hillforts, the lightly enclosed or open farmstead must have shared a close relationship with their more impressive counterparts’ (Ref. 13.20). Given this situation, it is reasonable to assume some level of settlement in the area, although its character and location remains unknown.

13.5.11 A probable Iron Age site is located within the 1 km Study Areas, located 1.5 km to the west of the Project Site, as shown in Figure 13.1 and 13.2. This is Scheduled Monument GM308, which comprises an oval enclosure measuring c. 90 m x 60 m, defined by a wide earthen bank that stands up to 1 m high in places. Its date is unproven but its morphology suggests it belongs to the Iron Age, with either a defensive and/or settlement function. The monument, now standing within woodland, is well preserved and retains considerable archaeological potential.

d) Roman (AD 43 – AD 410)

13.5.12 The Study Areas are removed from the main framework of Roman forts and roads in the region, which developed during the conquest of South Wales between 47 and 77 AD (Ref. 13.21 and 22). Forts were established at Coelbren, Neath, Loughor and Carmarthen, connected by a road network that can, in part, still be traced in the modern landscape (Ref. 13.23). The remains of two Roman practice camps are known within the 5 km Study Area, 4.6 km south of the Project Site, on Mynydd Carn Goch (SM GM269).

13.5.13 A re-analysis of the rural evidence may challenge the widely held belief that the indigenous population was largely untouched by the Romans (Ref. 13.Ref.13.23). However, identifiably Roman sites are entirely absent from the 1 km Study Area, although a continuity of native occupation must be assumed throughout this period and into the immediate post-Roman era.

e) Medieval (AD 410 – AD 1540)

13.5.14 The early medieval period in South Wales is broadly characterised by the emergence of distinct regional kingdoms, and of Christianity, with the possibility of some level of Viking depredation (Ref. 13.24). Archaeologically, the period is very poorly evidenced, and no settlement sites of this era are known within the Study Areas – although it is possible that some Anglo-Norman and medieval Welsh sites may have earlier origins. One possible monument belonging to this period is the base of a stone cross within Llangyfelach churchyard, 1.7 km south of the Project Site (SM GM299). Though not precisely dated, stylistically it would appear to belong to the early medieval period.

13.5.15 Evidence from the later medieval period in South Wales (i.e. after the Norman Conquest of the region) is far more abundant. No certain medieval sites are known within the Project Site or 1 km Study Area, but Pen y Fedw (PRN 01525w) is suggested to have its origins in the 14th century (Ref.13.24), although the evidence supporting this assertion is unclear. Assuming some degree of continuity, some of the other post-medieval farms in the district could reasonably be assumed to have earlier origins.

13.5.16 Within the 5 km Study Area, the scheduled earthwork known as Cae Castell is probably medieval in date and, on the basis of its place-name, quite possibly defensive in character (SM GM439). Meanwhile, the tower of the St David's church, Llangyfelach, is the likely standing remains of a former 14th-century church that stood within the curtilage of the present churchyard (LB 26236).

13.5.17 The present-day agricultural field pattern was largely established by the beginning of the 18th century, as evidenced by the 2":1 mile map of Glamorgan and Monmouthshire (1812-14; Ref. 13.25). Of particular interest on this map are the hedgerows identified in this assessment as AB03 and AB04, both of which are within the Project Site. The date at which the field pattern as a whole began to develop is not known, but it is possible that some parts may have medieval origins.

f) Post-medieval (AD 1540 – AD 1901)

- 13.5.18 Within the 1 km Study Area, the earliest forms of Post-medieval remains appear to be predominately of domestic and agricultural purpose. One example (albeit immediately outside the 1 km Study Area) is Cynghordy Fawr (PRN 02750w), which is located in the north-east of the Study Area. This building is fairly typical of the architectural style of this period, comprising a 17th-century longhouse with a courtyard and further ranges including a stable block and granary.
- 13.5.19 George Yates' Map of Glamorgan, dated 1799 (Ref. 13.1924), shows 'Abergelly Fach' (AB02) as an isolated farm building, disconnected from a north/south aligned lane that cuts across the north-western corner of the Project Site. A map of Glamorganshire (1812-14, Ref. 13.25) depicts the same farm as comprising two north-east/south-west aligned rectangular buildings set within their own grounds, and connected to the existing north/south aligned lane via a short driveway. To the east of AB02 is the farmstead of 'Abergelly-fawr' (AB01), featuring at least two buildings and an associated connecting lane to the north. The remaining land is shown as an enclosed field system, which includes boundaries AB03 and AB04, located immediately north of Abergelly-fach.
- 13.5.20 By the time of the surveying of the Llangyfelach Tithe Map of 1838 (Ref. 13.26), new field boundaries had been created and the fields made smaller and more irregular in shape. Boundaries AB03 and AB04 remained intact, forming the southern boundary of three irregular fields to the east of 'Abergelly fach' (AB01). The field systems depicted on the tithe map can also be seen on OS map of 1883-1884 (Ref. 13.27). By this time 'Abergelli-fach' (AB02) had expanded, comprising a farmstead of at least six buildings. The most significant development is the establishment of a large plantation in the south-east of the Project Site boundary. The subsequent OS edition of 1897 (Ref. 13.29) names the plantation as 'Abergelli-fach Plantation'. A quarry (PRN 01349w) is depicted for the first time, and is labelled as a 'gravel pit' immediately south-west of AB02.
- 13.5.21 In the early post-medieval period the population of the larger Swansea area began to decline as the administrative centre for the region moved to Cardiff (Ref. 13.29). This began its reversal in the early 18th century as the transport of materials for use in industry such as coal and metals along the River Tawe became essential. The River Tawe was a vital trade route during the 18th and 19th centuries at the time when Swansea became renowned as a copper smelting centre with such works as the Hafod Copperworks (PRN 05956w) and the Landore Copperworks (PRN 01586w). The Swansea's copper industry rose to prominence in the 18th century. Llangyfelach Copperworks (NPRN 34094), established in 1717, was the first of the major Swansea copperworks; its site is located beyond the 5 km Study Area, at the junction of Cwm Level Road and Neath Road to the north of Landore viaduct (Ref. 13.30).
- 13.5.22 No copper-working sites are known within the 1 km Study Area, but several sites attest to the supporting coal-mining industries which grew up in Swansea's hinterland. Collieries established during this period within the Study Area include

Bryn Whilach Colliery (PRN 01340w) and an unnamed colliery at Mawr (PRN 01345w).

13.5.23 Industrial transport networks are also evidenced. In 1798, the Swansea Canal was opened, serving to increase the industrial capacity of the area, such that at one stage in the 19th century, three quarters of the world's copper ore was being transported to Swansea for processing (Ref. 13.31). The century following the canal's construction saw the city's population grow from approximately 10,000 people to 95,000 people. Transport routes were established over land not only to supply the copperworks with raw materials but also to link the mines and collieries with the works and ports. Within the 1 km Study Area these include a tramroad (PRN 05950.0w) linking Bryn-whilach and Pen-rhiwfelen coal pits to Clydach Road, a mineral railway (PRN 03017.0w) situated within the community of Llangyfelach, and now a dismantled railway (PRN 02916.0w) serving Felindre Pit on the east side of the Lliw Valley.

g) Modern (1901-present)

13.5.24 Due to the availability of cheaper copper and coal from overseas, the industrial prosperity of the South Wales region began to decline in the early 20th century (Ref. 13.32). Throughout this period Swansea still remained a centre of industry within South Wales, with a population at the time of the outbreak of World War II of 167,000 people (Ref. 13.33). The Velindre works (PRN 02905w; 0.8 km south of the Project Site) was built as part of a post-war development programme begun after the Steel Company of Wales was formed in 1947. In 1952 the company started work on the construction of a cold reduction and electrolytic tinning plant at the site near Llangyfelach. The Velindre works began production in October 1956. The main building, the Mill Bay, was of very significant size: 1440 ft long, 100 ft wide and 66 ft high. It was closed down in September 1989 and its buildings were subsequently demolished.

13.5.25 One historic asset immediately to the west of the Project Site originates in this period: Abergelli Colliery (NPRN 80607). When first shown on the OS map of 1931 (Ref. 13.34), it comprised a water tank, engine houses, a slant (slanted shaft), and a tramway or railway following a course from the slant to a slag heap at the north end of the colliery site. The colliery worked the Four Feet and Graigola (also known as the Brynwhilach) coal seams and was a registered colliery from 1926 to 1960. The owner, up to nationalisation, was the Graigola Merthyr Co. Ltd and it was worked in association with Clydach Merthyr Colliery located at Craig Cefn Parc, approximately 2.5 km north-east of the Project Site (Ref. 13.35).

13.5.26 Aerial photographs of the area taken in 1970 (Ref. 13.36) show the addition of an electrical substation to the south-west of Abergelli Farm. The next significant changes to the Project Site are shown on aerial photographs taken in 2008; these reflect the construction of the Felindre Gas Compressor Station. The photographs show that the works included the installation of a gas pipeline from the road to the north of Abergelli farm, traversing the fields to the east and south of the farm, to the Substation, which extends over much of the Abergelli fach Plantation. As a part of

this development, a section of historic field boundary AB03 was removed for the pipeline easement.

13.5.27 Aerial photographs of 2010 show this complex being extended southwards. By 2015, much of the land to the east of the farm had been utilised for solar panels (Ref. 13.37).

h) Historic landscape characterisation

13.5.28 The Project Site area lies in Landmap Historic Landscape Aspect Area H27 (Gower Supraboscus Agricultural). This is characterised by an irregular fieldscape with hedgerows and hedgebanks, reflecting a history of gradual and piecemeal enclosure in the valleys and foothills throughout the medieval and post-medieval periods. There is some evidence for enclosure in the pre-Norman period, and the process continued into the second half of the 19th century. Some unenclosed land and woodland remains. Limited industrial activity (mainly mining) also took place here in the 19th century and has left residual traces in the landscape. The settlement pattern is predominantly of dispersed character, but ribbon developments occur in areas of former industrial activity.

i) Previous Investigations

13.5.29 A watching brief was undertaken by Cambrian Archaeological Projects (Ref. 13.38) during groundworks associated with the construction of a high pressure gas pipeline between Felindre and Brecon. The watching brief was carried out within part of the Project Site through the fields to the east of Abergelli Farm. A single pit was noted and revealed evidence of *in situ* burning, which was potentially the remains of a hearth or furnace. It measured 1.5 m in diameter and was 0.2 m in depth. No date was ascertained for this feature. The site of this feature was located to the south of Abergelli farm at NGR SN 65136 01433, approximately 100 m outside of the Project Site.

13.5.30 Archaeological watching briefs undertaken by Cotswold Archaeology during the construction of the oil pipeline in the northern extent of the Project Site revealed two undated charcoal spreads. Elsewhere, two pits with charcoal and burnt stone were exposed, and were associated with a spread of burnt material containing two worked, undated, flints. An evaluation at Waun y Garnwen, forming part of the same scheme of works, recorded four probable former field boundaries (Ref. 13.39).

13.5.31 A geophysical survey in the area immediately to the east of the Project Site was undertaken in advance of the installation of a solar energy farm. The works identified probable soil-filled features in most of the survey areas, and concluded that although some of the anomalies were weak or diffuse, most have potential to reflect the remains of archaeological features (Ref. 13.40).

13.5.32 On the south-east fringe of the 1 km Study Area, a watching brief was undertaken by Oxford Archaeology within the grounds of Morryston Hospital prior to the development of new parking facilities. A linear field boundary and ornamental

features relating to the garden of the former Maes y Gwernen Hall were recorded (Ref. 13.40).

13.6 Embedded Mitigation

- 13.6.1 As detailed in **Chapter 3: Project and Site Description**, a number of embedded mitigation measures have been identified through the iterative EIA process and have been incorporated into the design and construction planning of the Project.
- 13.6.2 As these mitigation measures have been embedded into the design of the Project, are legal requirements or are standard practices that will be implemented, the assessment of likely significant effects assumes that they are in place.

13.7 Assessment of Effects

13.7.1 This section presents the findings of the historic environment assessment for the construction, operation and decommissioning phases of the Project.

a) Construction

- 13.7.2 This section identifies any likely significant effects that are predicted to occur and Section 13.8 highlights the additional mitigation and monitoring measures that are proposed to reduce or eliminate the identified significant effects.
- 13.7.3 All impacts discussed in relation to construction are those of a physical character. No impacts on setting are predicted.

i. Power Generation Plant

13.7.4 Construction of the Power Generation Plant will not have a physical impact on any known historic asset. No known historic assets exist within its footprint.

ii. Gas Connection

- 13.7.5 Construction of the Gas Connection will not have a significant physical impact on any known historic asset.
- 13.7.6 The Gas Pipeline will cross the line of historic boundary AB03, necessitating the removal of a portion of this feature for the width of the pipe easement. However, only a small percentage of this feature is affected, and was substantially altered when the preceding oil pipeline was installed, with little of the original historic fabric remaining.
- 13.7.7 The easement for the Gas Pipeline will also run parallel to historic boundary AB04, which coincides with the western limit of the Project Site boundary. However, a **Negligible** effect is anticipated, since this feature is 25 m from the Gas Pipeline centreline, and thus beyond the limits of the pipe easement.

Table 13-6: Nature and Significance of the Impact of Construction (Gas Connection) on Historic Assets

Historic Asset	Sensitivity	Magnitude of Harm (Impact)	Significance of Effect	Duration of Effect
AB03	Low	Negligible	Negligible	Permanent

iii. Electrical Connection

13.7.8 Construction of the Electrical Connection will not have a physical impact on any known historic asset. No known historic assets exist within its footprint.

iv. Unknown Archaeology

13.7.9 As described above, a number of archaeological interventions have been carried out within the 1 km Study Area, and one within the Project Site. The findings of these suggest that there is some potential for the discovery of buried archaeological remains. However, given the sporadic and isolated nature of these recorded features, and their likely character, there is a low probability of encountering buried archaeological remains of high value during the construction works.

b) Operation

13.7.10 Impacts upon below-ground archaeological remains will only arise if significant ground disturbance is anticipated during the operational phase of the Project. As no such activity is envisaged, there will be no further impact upon below ground archaeological remains once the Project is operational. Maintenance activities are unlikely to require significant ground disturbance.

13.7.11 Within this PEIR, the assessment of effects upon the setting of historic assets is provisional. It is currently based on: a) the Project ZTV; b) the LVA as presented in Chapter 11 of this PEIR; c) viewpoint graphics generated for the PEIR; d) field visits to selected monuments.

13.7.12 To complete and refine this assessment, the analysis will draw upon: a) additional viewpoint graphics generated from winter photography (i.e. presenting the scenario in which the Project will be most visible); b) photomontages generated from heritage-specific viewpoints (i.e. assets for which an effect is predicted); c) wireline graphics from other monuments, to confirm that their exclusion from the assessment (i.e. on the basis of there being no effect) is correct.

i. Power Generation Plant

13.7.13 Operation of the Power Generation Plant will not have a physical impact on any known historic asset.

13.7.14 Of the various elements of the Project, only the Power Generation Plant introduces any alteration in respect of the settings of historic assets, as follows.

Conservation Areas

13.7.15 Of the two conservation areas within the 5 km Study Area, only one lies within the ZTV for the Project: Llansamlet Conservation Area (CA027). The ZTV suggests that the stack of the Power Generation Plant will be visible from some of the northerly parts of the conservation area. However, the landscape between the Project Site and the conservation area has been extensively developed, including the Swansea Enterprise Park and the M4 motorway. Thus, despite bringing about a minor change to north-eastward views from the conservation area, neither its setting, nor

those of the listed buildings within it, will be adversely affected by the Power Generation Plant.

Registered Historic Parks and Gardens.

13.7.16 Of the three Registered Historic Parks and Gardens within the 5 km Study Area, only one lies within the ZTV for the Project: Penllergaer Park and Garden (GM054). The Project is theoretically visible from within a small area of this registered park. However, the park and its constituent elements are well screened by woodland on its northern and eastern margins. Moreover, the park and Project Site are separated by the M4 motorway and surrounding urban and industrial development. As such, the park's setting will not be adversely affected by the Power Generation Plant.

Scheduled Monuments and listed buildings.

13.7.17 The ZTV for the Project indicates that it will introduce change to the settings of a number of Scheduled Monuments and listed buildings. As described below, however, visual change does not necessarily equate to an adverse impact – whether because of the limited extent of visibility of the Project, the attributes of setting, the existing quality of setting, or a combination of these factors. Several assets are discussed below for which no impact will occur, this being done in order to demonstrate the reasoning behind the outcome of the assessment.

13.7.18 Within the settlement of Penllergaer there are four listed buildings from which the Project Site will be visible. These relate to Bryn-rhos Farm and are located within a single cluster 3.6 km south-west of the Project Site, and are all Grade II-listed (LB26496-99). This group of buildings was listed as a little-altered 19th-century estate farm group. As such, the primary focus of their setting is their functional inter-relationship with each other and adjoining buildings. The setting of this asset group will be unaffected by the Power Generation Plant.

13.7.19 To the north of Penllergaer is the Grade II-listed Penderi Fawr Farmhouse and attached cowhouse (LB26257; 2.4 km south-west of the Project Site). This building was listed due to it being a good example of a surviving 17th-century farmhouse built on the unit system. The setting of the building has already been wholly compromised by the construction of the M4 motorway, McDonald's restaurant and the Moto Services less than 100 m away. The Project will not cause any further adverse effects to its setting.

13.7.20 To the south-west of the Project Site (1.2 km) are two connected Grade II Listed Buildings: LB19983 (Tredegar Fawr); and LB19984 (Lofted Pigsty at Tredegar Fawr). These buildings were listed as being of historical interest due to their connection with the locally-important Morris family. The significant factor in the setting of these assets lies with their historical associations and their connections to each other, which will not be diminished by the Project. Moreover, the outward views from these assets have already been substantially affected by the Felindre Goods Depot (01229.10w) and the Velindre Works (02905w), as well as the construction of the M4 motorway. On all of these grounds, therefore, the Power Generation Plant will not alter the setting of these assets.

13.7.21 To the north of the Project Site (2.9 km) is Scheduled Monument GM202 (Mynydd Pysgodlyn Round Barrow). The Project will be visible from this monument, but the views from and including this monument will not be significantly changed (Viewpoint 6). The Project will be an extremely minor element of the viewshed, in which a substantial quantity of modern development is already present. An important attribute of the setting of this type of upland prehistoric monument is its sense of isolation. And, while the Project will be visible, marginally adding to the massing of modern elements to the south, the extent of additional change is very small and the intervening distance means that this sense of remoteness is maintained. No historic sightlines or visual connections with other monuments will be affected. The significance of effect of the Power Generation Plant upon the monument’s setting is considered to be **Minor** adverse (derived from a Negligible impact upon a High-value receptor) (Table 13-7), and therefore not significant.

Table 13-7: Nature and Significance of the Impact of Operation on Historic Assets

Historic Asset	Sensitivity	Magnitude of Harm (Impact)	Significance of Effect	Duration of Effect
GM202	High (National)	Negligible	Minor Adverse	Permanent

13.7.22 There are a number of assets in the settlement of Llangyfelach, 1.8 km south of the Project Site. These include:

- GM229 (Llangyfelach Cross Base);
- LB 26235, Grade II* (The Church of St David and St Cyfelach); and
- LB 26236, Grade II* (Tower of the Church of St David).

13.7.23 The Scheduled Monument and the Grade II* Listed Buildings form a cluster within a walled churchyard located near the centre of Llangyfelach. The churchyard is situated on high ground with clear views northwards, which presently include the Substation and the Felindre Gas Compressor Station. The assets have strong functional associations and represent the continual use of land for religious activity since the Medieval period. The integrity of the tower (LB26236) and church (LB26235) have been retained, despite repairs and modifications in the modern period to LB26236. The assets are located within an extensive graveyard, partially enclosed by a stone wall and tall mature trees to the west and north (see LVA Viewpoint 11). The setting of this group is essentially inward-looking, with little reference to the modern urban environment that surrounds it. The Power Generation Plant, while visible, will be an extremely minor addition to existing views; the modern urban development is dominant, and thus its effect upon these assets’ setting is considered neutral.

ii. Gas Connection

13.7.24 Operation of the Gas Connection will not have an impact upon on any known historic asset.

iii. Electrical Connection

13.7.25 Operation of the Electrical Connection will not have an impact upon on any known historic asset.

iv. Unknown archaeology

13.7.26 Operation and maintenance of the Project will not have any impact on unknown archaeology.

c) Decommissioning

13.7.27 The removal of the Project will not require the disturbance of previously undisturbed ground or the demolition of any standing historic asset. As a consequence, there will be no effect on archaeology or cultural heritage during the decommissioning phase.

13.8 Mitigation and Monitoring

13.8.1 As a general rule, additional mitigation measures have been proposed where a significant effect is predicted to occur. Embedded mitigation measures, which have been incorporated within the design of the Project or are standard practice measures that have been committed to are summarised in **Chapter 3: Project and Site Description**. Mitigation is inherent within the final design proposals in order to prevent or reduce direct and indirect impacts and effects on heritage assets.

13.8.2 This section describes the proposed additional mitigation measures for the archaeology and cultural heritage assessment, beyond that described in embedded mitigation, **Chapter 3: Project and Site Description** .

13.8.3 This section also describes any required monitoring regimes, including monitoring of specific receptors/resources, or monitoring the effectiveness of a mitigation measure. The requirements, scope, frequency, and duration of a given monitoring regime are set out, as far as possible, in this section.

a) Mitigation

13.8.4 There is a presumption in favour of preservation *in situ* of nationally important archaeological remains, whether scheduled or not. In some cases, unscheduled remains of local and regional importance will be considered worthy of preservation *in situ*. In these cases, the results of the assessment should influence the design of the development in order to protect a monument or remains. Proposals for enhancement may also be identified.

13.8.5 Preservation ‘by record’ may also be considered as an option for mitigation. For buried archaeology this implies excavation, whilst standing features are recorded by a combination of drawn, photographic and written record. Preservation by record is normally considered a less satisfactory outcome for cultural heritage, since it presupposes loss of, or damage to, the feature in question.

13.8.6 In respect of setting, Cadw guidelines for mitigating the impact of a development on the setting of a historic asset suggest that in the first instance impacts are best

mitigated for either by relocation of the development or changes to its design or the introduction of screening. Where relocation of the development is not possible, good design alone may be capable of reducing the harm.

i. Known historic assets

13.8.7 The only identified effect on known historic assets is that upon the boundary of AB03. Given that this feature is subject to only a limited impact, is of low value and the section of boundary in question has already effectively been removed by previous development, no additional mitigation is proposed.

ii. Unknown archaeology

13.8.8 Previous investigations within the 1 km Study Area suggest that there is potential for archaeological features to be present. However, neither the results of this field work, nor the findings of the present assessment, point towards the existence of significant or high-value archaeological remains within the Project Site.

13.8.9 In keeping with the other recent projects in the 1 km Study Area, an archaeological watching brief will be maintained on construction ground works which is included as embedded mitigation as set out in **Chapter 3: Project and Site Description**. This will apply to all areas subject to significant disturbance, unless scoped out due to existing conditions (e.g. made ground). No additional mitigation will be required.

13.8.10 In the event that the watching brief reveals archaeological remains, sufficient time and resources will be allowed to ensure that these are adequately excavated, recorded and removed, and for samples to be taken if appropriate. Provision will also be made for post-excavation analysis and, if appropriate, publication of the results.

iii. Effects upon setting

13.8.11 Due to the scale of the Project, and the fact that it is the Power Generation Plant stack which introduces the principal changes to views, no additional mitigation is possible. The effects therefore remain as described above.

b) Monitoring

13.8.12 The watching brief will be subject to monitoring by GGAT.

13.9 Residual Effects

13.9.1 The following tables present a summary of the residual effects identified by the archaeology and cultural heritage assessment.

13.9.2 With the mitigation measures implemented, it is not anticipated that there will be any significant residual adverse effects associated with the Power Generation Plant, Gas Connection or Electrical Connection relating to archaeology and cultural heritage.

Table 13-8: Historic Environment: summary of construction effects

Receptor	Description of Effect	Classification of effect	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
Field Boundary AB03	Permanent effect caused by the partial destruction of the feature	Negligible	None	Negligible	Not Significant

Table 13-9: Historic Environment: summary of operational effects

Receptor	Description of Effect	Classification of Effect	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
GM202	Alteration of setting	Negligible	None	Minor Adverse	Not Significant

a) Project “in combination” Effects

13.9.3 The predicted effects of the Power Generation Plant, Gas Connection and Electrical Connection upon known archaeology and cultural heritage are limited to those assets listed in Table 13-8 and Table 13-9. No other known assets will be affected. The combined effect upon upon known archaeology and cultural heritage from the whole project is therefore **Negligible** and not significant.

13.10 Cumulative Effects

a) Construction and Decommissioning

i. Description of baseline where cumulative impacts expected

13.10.1 It is considered that there is no potential for cumulative impacts on archaeology and cultural heritage receptors arising from construction of the Project in combination with other schemes. This is for the following reasons:

- The direct residual effect of the Project on known archaeological remains is negligible, and therefore cannot not contribute in any meaningful way to any wider significant, comparable, losses to the cultural heritage resource; and
- No effects upon the setting of historic assets are predicted.

ii. Mitigation

13.10.2 No mitigation is required.

b) Operation

i. Description of baseline where cumulative effects expected

13.10.3 It is considered that there is no potential for significant cumulative impacts on archaeology and cultural heritage receptors as a result of operation of the Project in combination with other schemes. This is for the following reasons:

- No physical effects upon known historic assets are predicted; and
- Effects upon the setting of historic assets are limited to a single Scheduled Monument, for which the Project's effect was classed as minor adverse. This monument is not affected by the other identified schemes.

ii. Mitigation

13.10.4 No mitigation is required.

13.11 Conclusion and Next Steps

13.11.1 Although situated within a landscape that exhibits evidence for human activity since late prehistory, the Project Site contains comparatively few known historic assets. Little previous study has been undertaken within the Project Site by way of archaeological field work. However, the desk-based data, supplemented by information from watching briefs on other projects within the 1 km Study Area, combine to suggest that this is a true reflection of the situation. The potential for significant unknown archaeology existing within the Project Site is considered to be low, with the possibility of its discovery being adequately addressed through a watching brief.

13.11.2 As discussed above, the assessment of the Project's effects on the setting of historic assets is at an interim stage. For the DCO Application, this assessment will include updated winter photography, wireline graphics and an additional viewpoint to confirm these predicted effects and verify the impact assessment conclusions.

13.11.3 At this PEIR stage, it is concluded that while widely visible within the 5 km Study Area adopted for this assessment, the Project will have only a very limited effect on the setting of historic assets. A single minor adverse effect is predicted, with no other assets affected by the presence of the Project.

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