

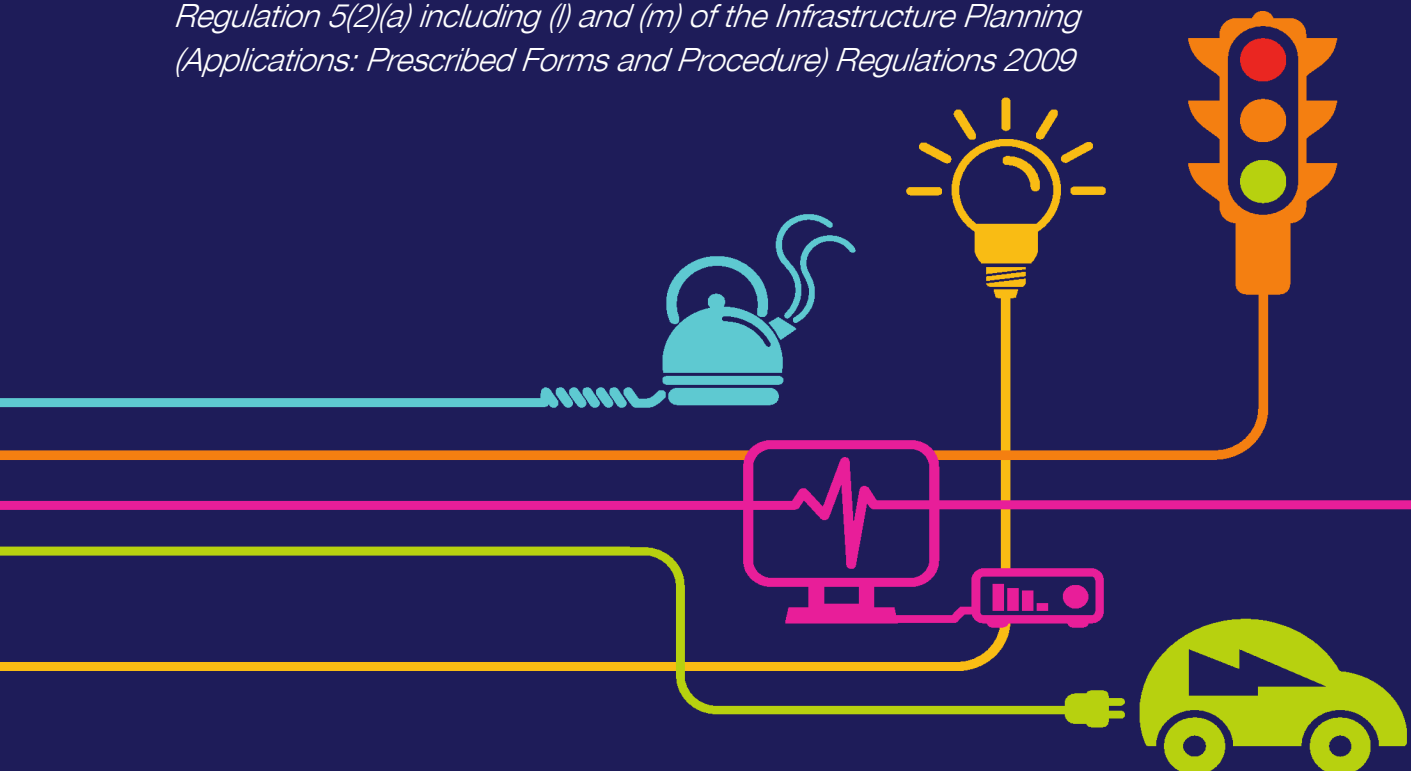
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# 5.10.2.3

## Assessment of the Significance of the Impact of Development on Historic Landscape (ASIDOHL) Chapter 10 – Appendix 3

National Grid (North Wales Connection Project)

*Regulation 5(2)(a) including (l) and (m) of the Infrastructure Planning  
(Applications: Prescribed Forms and Procedure) Regulations 2009*







# **North Wales Connection Project**

## **Volume 5.10**

### **Document 5.10.2.3 Appendix 10.3 ASIDOHL**

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# 1. Introduction

## 1.1. PURPOSE OF THIS REPORT

- 1.1.1. This Assessment of the Significance of the Impact of Development on Historic Landscape (ASIDOHL) has been carried out as part of the Environmental Impact Assessment (EIA) of the proposed 400 kV North Wales Connection Project from Wylfa to Pentir (the Proposed Development), in particular the eastern end of the Proposed Development, which lies within Gwynedd. This includes part of the Dinorwig Landscape Area on the Register of Landscapes of Outstanding Historic Interest (RLOHI).
- 1.1.2. The principal aim of this assessment is to identify the nature of any direct and indirect affects to the Dinorwig RLOHI that may result from the construction and operation of the Tŷ Fodol Tunnel Head House and cable sealing end compound (THH/CSEC), associated works and the overhead line (OHL) to Pentir Substation.
- 1.1.3. Environmental Statement (ES) Figure 10.7 (**Document 5.10.1.7**) shows the Order Limits<sup>1</sup>, along with the Dinorwig RLOHI and the HLCAs within 2 km of the Order Limits.

## 1.2. DINORWIG LANDSCAPES OF OUTSTANDING HISTORIC INTEREST

- 1.2.1. The Dinorwig landscape area is included on the RLOHI. It was included as the Dinorwig valley, or Nant Peris, with the valley located on the north-western side of the Snowdon massif. It is a steeply sloping valley, opening out on the north-west side to the gently undulating Arfon Plateau. The description on the register (Annex A) identifies that the area contains considerable evidence for prehistoric land use and settlement, though due to agricultural improvements it is not as well-preserved as within other areas. There are traces of settlement remains in the form of hut groups and associated field systems, but prehistoric settlement is most clearly expressed in the larger monuments such as Dinas Dinorwig hillfort. This sits on an isolated hill in a dominant position with respect to the Arfon plateau.

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<sup>1</sup> The Order Limits defines the extent of the area for which National Grid will be seeking consent

- 1.2.2. Another prominent defensive site is the 13th century Dolbardarn Castle, located between lakes Padarn and Peris. Dolbardarn Castle became a popular subject for artists in the 18th and 19th centuries for its 'picturesque' qualities.
- 1.2.3. The dominant visible remains of human activity within the Dinowig RLOHI are from the slate industry, which reached its height in the 19th century. The slate industry within Dinorwig was dominated by the Vaynol estate, which had a considerable local land-holding and whose prosperity greatly grew through involvement in the slate industry. The Dinorwig quarries were established at Nant Peris, and Port Dinorwig was established as an export port for the slate. Initially, these were linked by a road before an attempt was made to use a horse tramway, before a railway was built in 1848. As well as the considerable extent of the former slate workings, the industry also left its mark in the form of workers settlements, and smallholdings on former common land.
- 1.2.4. The Vaynol estate also developed its agricultural interests, with the remodelling of tenancies and the enclosure of common land from the 18th century. The income of the estate was also used to fund the development of Vaynol Park during the 18th and 19th centuries. This involved the expansion of the park, the remodelling of the park landscape, its enclosure with a long stone wall and the construction of the current Vaynol Hall.
- 1.2.5. Gwynedd Archaeological Trust has completed an historic landscape characterisation programme for the historic landscape<sup>2</sup>. This defined 54 Historic Landscape Characterisation Areas (HLCAs). These HLCAs are defined within the Ardal Arfon Historic Landscape which extends beyond the boundary of the Dinorwig LOHI, as identified on the register.
- 1.2.6. The Gwynedd side of the North Wales Connection Project sits almost wholly within the Arfon Plateau HLCA 23. The very eastern limit however would fall within the Improved Fields above Pentir HLCA 54, while the underground section of the North Wales Connection Project would go beneath Vaynol HLCA 48. A further 20 HLCAs would be within 5 km of the Order Limits. These are shown in Table 1.1.

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<sup>2</sup> <http://www.heneb.co.uk/hlc/arfon.html>

Table 1.1 HLCAs within 5 km of the project boundary		
HLCA	Landscape Character Area Name	Distance from Order Limits (km)
23	Arfon Plateau	Within
48	Vaynol	Beneath
54	Improved Fields above Pentir	Within
27	Y Felinheli (Port Dinorwic)	0.5
25	Gwaun	0.6
24	Llanddeiniolen/Dinorwic	1.1
53	Hillslopes below Moel Y Ci/Moel Rhiwen	1.7
51	Rhiwlas	1.8
42	Gwaen Gynfi Enclosed Area	2.5
41	Moel Y Ci/Gwaen Gynfi Unenclosed Uplands	2.6
01	Bethel and Saron	2.9
50	Afon Rhyddallt	2.9
20	Llanrug	3.6
36	Arfon Plateau	3.7
03	Deiniolen and Clwt Y Bont	4.1
22	Graiglwyd	4.1
07	Gallt Celyn	4.2
09	Brynrefail	4.3
18	Cwm Y Glo	4.3
17	Cefn Du Enclosures	4.4
21	Padarn and Peris Lakes	4.4
19	Ochr Bryn Bras	4.5
45	Bryn Bras Castle	4.6

## 2. Methodology

### 2.1. APPROACH TO THE ASSESSMENT

2.1.1. The ASIDOHL methodology adopted in this study has followed that set out in the Guide to Good Practice on using The Register of Landscapes of Historic Interest in Wales in the Planning and Development Process Revised (2nd) Edition 2007 (hereafter referred to as the ASIDOHL2 guidance). This involves a staged process aimed at arriving at a quantified assessment of the extent to which the Proposed Development may affect a historic character area on the register.

2.1.2. The following five stages have been carried out to determine impact:

- STAGE 1 Contextual information;
- STAGE 2 Description and quantification of the direct, physical impacts of development on the Historic Character Area(s) affected;
- STAGE 3 Description and quantification of the indirect impacts of development on the Historic Character Area(s) affected;
- STAGE 4 Evaluation of the relative importance of the Historic Character Area(s) (or part(s) thereof) directly and/or indirectly affected by development in relation to:
  - the whole of the Historic Character Area(s) concerned, and/or
  - the whole of the historic landscape area on the Register, followed by
  - an evaluation of the relative importance of the Historic Character Area(s) concerned in the national context, and a determination of the average overall value of all the Historic Character Areas (or parts thereof) affected.
- STAGE 5 Assessment of the overall significance of impact of development, and the effects that altering the Historic Character Area(s) concerned has on the whole of the historic landscape area on the Register.

- 2.1.3. Within the assessment, a scoring system is adopted in which each value is given a score, and therefore each impact is quantified in terms of the importance of the element or feature affected and the magnitude of the predicted impact.
- 2.1.4. The scoring system used is prescribed within the ASIDOHL2 guidance, and the terms used in relation to the used in this report are as set out in the guidance. As such, the terminology used, such as the scales of effect, is specific to the ASIDOHL assessment process and are not directly equivalent to those used in assessing the effects on the Historic Environment in Chapter 5 of the ES (**Document 5.10**).
- 2.1.5. All five stages have been applied in this assessment and the following chapters address each stage in turn culminating in a concluding statement.

## **2.2. STUDY AREAS**

- 2.2.1. The assessment of direct, physical impacts of development considers only the footprint of the proposed development and therefore the scope of this is limited to HLCAs in which development involving ground disturbance would take place.
- 2.2.2. The assessment of indirect impacts of development considers changes to the settings of heritage assets and therefore a study area of 2 km from the Order Limits has been adopted. This is consistent with the study area used in the ES assessment of effects on heritage assets and reflects the scale and nature of the Proposed Development and the nature of the historic landscape.

## **2.3. ASSESSMENT OF DIRECT, PHYSICAL IMPACTS OF DEVELOPMENT (STAGE 2)**

- 2.3.1. This stage of the ASIDOHL process quantifies the direct and physical impact on the HLCAs.
- 2.3.2. The assessment is quantified and expressed in three forms:

### *Absolute Terms*

- 2.3.3. This is a simple expression of the proportion of the HLCA which would be lost to development. For the purpose of this assessment, the area that would be lost is taken as the total footprint of the Proposed Development. The development footprint includes pylon foundations, temporary working areas, access tracks, Pentir Substation, Tŷ Fodol THH/CSEC and Pentir Construction Compound.

### *Relative Terms*

- 2.3.4. This is an expression of the extent of the identified resource which would be lost to the Proposed Development. In order to quantify this loss, the importance of

each element of the resource is identified and set out according to the following scale (the score for each category is included in brackets):

- Category A Sites and Monuments of National Importance (4);
- Category B Sites and Monuments of Regional Importance (3);
- Category C Sites/Features of Local Importance (2);
- Category D Minor and Damaged Sites/Features (1);
- Category U Sites/Features Needing Further Investigation (1).

2.3.5. The degree to which each feature would be affected is then assessed according to the following scale:

- Very Severe (6);
- Severe (5);
- Considerable (4);
- Moderate (3);
- Slight (2);
- Very Slight (1).

#### *Landscape Terms*

2.3.6. This involves the assessment of the effect of the loss of the identified features on the HLCA as a whole. Central to this is an appreciation that the character of an area is derived from a sum of its parts, which would be of greater value than the different parts considered individually.

2.3.7. This assessment comprises two parts. In the first part the value or importance of each feature or characteristic is assessed in terms of the contribution it makes to the area as a whole. This is done in accordance with the following scale:

- Very High (6);
- High (5)
- Considerable (4);
- Medium (3);
- Low (2);



- Very Low (1).

2.3.8. Following this definition of the value of each feature, the extent to which these features would be affected by the development is also assessed on the following scale:

- Lost (6);
- Substantially Reduced (5);
- Considerably Reduced (4);
- Moderately Reduced (3);
- Slightly Reduced (2);
- Very Slightly Reduced (1).

## **2.4. ASSESSMENT OF INDIRECT IMPACTS OF DEVELOPMENT (STAGE 3)**

2.4.1. The ASIDOHL guidance requires an assessment of indirect impacts of development, including physical and visual impacts.

### *Indirect, physical impacts*

2.4.2. Indirect, physical impacts may involve:

- An increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to elements, during or consequent to development.
- Related to (i), the likelihood of increased management needs to maintain elements as, for example, through altered habitats, water levels, increased erosion, new access provision etc., during or consequent to development.
- The severance, fragmentation, dislocation or alteration of the functional connections between related elements, for example, a field system becomes 'severed' from its parent farmstead by an intervening development.
- The frustration or cessation of historic land use practices, for example, it becomes more difficult or impossible to manage an area in a traditional manner as a result of development.

- The frustration of access leading to decreased opportunities for education, understanding or enjoying the amenity of elements, during or consequent to development.

2.4.3. As for the assessment of direct physical impacts, the method requires a description of the importance of each element or feature involved, followed by an assessment of the magnitude of any predicted effect on these. A scoring system is adopted in which each value is given a score, and therefore each impact is quantified in terms of the importance of the element or feature affected and the magnitude of the predicted impact. These scores are aggregated to provide an overall value of the predicted indirect physical impact.

2.4.4. The importance of features which may be affected, and the extent of any effect are scored in accordance with the same scales as for direct, physical impacts as set out in Section 3.2.2. For each feature, the scores are combined and an average for the area calculated.

#### *Indirect Visual Impacts*

2.4.5. The ASIDOHL guidance states that indirect visual effects can occur as a result of:

- i. Visual impacts on elements from which a development can be seen (considered up to its maximum height). The impact might be on 'views to' or 'views from' these elements and it should be assessed with reference to principal historic viewpoints and essential settings. These should be considered in relation to a site's original character and function, as well as to the vantage points and visual experience of a visitor today.
- ii. Impact on the visual connections between related elements, by occlusion, obstruction, etc., for example, an essential line of sight between historically linked defensive sites would become blocked or impaired by an intervening development.
- iii. Conversely, the creation of inappropriate visual connections between elements not intended to be inter-visible originally, by the removal of intervening structures, barriers, shelters, screening or ground.

2.4.6. Visual impact of the development itself considering:

- Its form — the scale, number, density, massing, distribution etc. of its constituent features;
- Its appearance — the size, shape, colour, fabric etc. of its constituent features, in relation to the existing historic character of the area.

- 2.4.7. The importance of features which may be affected, and the extent of any effect are scored in accordance with the same scales as for direct, physical impacts as set out in Section 3.2.2. For each feature, the scores are combined and an average for the area calculated.
- 2.4.8. The scores are then added to the scores for the indirect physical impacts to provide an overall magnitude of indirect impacts on the following scale.
- Very Severe (21-24)
  - Severe (17-20)
  - Considerable (13-16)
  - Moderate (9-12)
  - Slight (5-8)
  - Very Slight (1-4)
- 2.4.9. The potential for indirect visual effects to occur, and their likely magnitude depends on a number of factors including the nature of the historic elements affected, the scale and nature of Proposed Development and the form of the landscape in which they sit. Distance is also a factor, as with increasing distance between the Proposed Development and an historic element the magnitude of any change would tend to decline. This is because the Proposed Development would appear as a less prominent feature, there would be a greater degree of visual separation and also a greater likelihood that views would be obstructed by intervening topography.
- 2.4.10. This ASIDOHL has considered potential effects on all of the HLCAs within the designated landscape which would be within 2 km of the Order Limits, and these are:
- The Arfon Plateau (HLCA23);
  - Vaynol (HLCA 48);
  - Improved fields above Pentir (HLCA 54);
  - Felinheli or Port Denorwic (HLCA27);
  - Gwaun (HLCA25);
  - Llanddeiniolen (HLCA24);
  - Hillslopes Below Moel Y Ci/Moel Rhiwen (HLCA53); and

- Rhiwlas (HLCA51).

2.4.11. For each HLCA which may be indirectly affected, the importance of relevant features or elements was identified, followed by an assessment of the magnitude of the predicted impact. The scores are aggregated to provide an overall predicted magnitude of effect.

2.4.12. For this study, the assessment of the magnitude of visual impacts was based on the criteria outlined above, and determined by a process involving:

- A review of the ZTV map (**Documents** 5.8.1.7, 5.8.1.9 and 5.8.1.11) to identify the extent of the visibility of the wind farm in relation to HLCAs and principal features (such as scheduled monuments);
- A review of wireframe illustrations from principal locations (such as scheduled monuments or other nationally important features);
- Site visits to review the current condition of the landscape areas, the essential settings of principal features (such as scheduled monuments) and consider the likely magnitude of any changes.

2.4.13. Features outside of the ZTV have not been included within the assessment of visual impacts.

## **2.5. EVALUATION OF RELATIVE IMPORTANCE (STAGE 4)**

2.5.1. The fourth stage of the ASIDOHL process evaluates the relative importance of the HLCAs (or parts thereof) directly and/or indirectly affected by development. This is done in relation to:

- The whole of the HLCA/ other HLCAs assessed;
- The whole of the landscape character area on the register; and
- An evaluation of the relative importance of the HLCA concerned in the national context.

2.5.2. These considerations correspond to items a), b) and c) in the ASIDOHL guidance.

2.5.3. The results of this stage are recorded in tabular form, with assessment based on the following criteria:

- Rarity - in terms of period or date, and as a component of the landscape. This should be expressed in relation to what survives today, since elements of a once common landscape may now be rare;

- Representativeness - this should be considered because a landscape that is common can still be of national importance if, in the light of other criteria, it contains a particularly representative range of elements;
- Documentation - the survival of the documentation that increases our understanding of the landscape would raise its importance;
- Group value - this relates to diversity (or similarity) of elements including the structural and functional coherence;
- Survival - relates to the degree of survival of elements in the landscape;
- Condition - relates to the condition of elements in the landscape;
- Coherence - relates to how well the historic meaning and significance of the landscape is articulated by the historic themes (that is the historical processes and patterns that have created the individual elements within it);
- Integrity - the importance of a landscape may be enhanced by its integrity that relates to the survival of its original character or form;
- Potential - relates to the potential within the landscape for future historic landscape analysis;
- Amenity - relates to the potential value of elements to be developed as a public educational and recreational amenity;
- Associations - a landscape might have important historic associations with particular figures or institutions.

2.5.4. These criteria are graded according to the following scale, with scores allocated to each criteria:

- Very High/Very Good (5);
- High/Good (4);
- Moderate/Medium (3);
- Low (2);
- Poor/None (1).

2.5.5. The scores are then aggregated and then converted to a % value to quantify the overall importance of each of the HLCAs according to the following scale:

- Very High (80-100)
- High (60-79)
- Considerable (40-59)
- Moderate (20-39)
- Low (5-19)
- Very Low (1-4)

## **2.6. ASSESSMENT OF OVERALL SIGNIFICANCE OF IMPACT (STAGE 5)**

2.6.1. The final stage as set out in the ASIDOHL guidance requires a combination of the results from previous stages to produce an overall assessment of the significance of effects on the historic landscape area. This is based on a consideration of:

- Impact of Development (Stages 2 and 3);
- Value of Character Areas (Stage 4);
- Reduction of Value of the Historic Landscape Area.

2.6.2. In each the value is scored according to the following scale:

- Very High (9 or 10);
- High (7 or 8);
- Medium (4, 5 and 6);
- Low (2 or 3);
- Very Low (1).

2.6.3. The assessment scores from stages 2 to 4 are used only as a guide to professional judgement at this stage. The results are aggregated and presented in tabular form to provide an overall assessment according to the following scale:

- Very Severe (26-30);
- Severe (21-25);
- Fairly Severe (16-20);

- Moderate (10-15);
- Slight (4-9);
- Very Slight (0-3).

## 3. Contextual Information (Stage 1)

### 3.1. OUTLINE OF PROPOSED DEVELOPMENT

- 3.1.1. National Grid Electricity Transmission plc (National Grid) is developing a new 400 kV connection between the Proposed Wylfa Newydd Generating Station on Anglesey and the existing electricity transmission network in North Wales.
- 3.1.2. A description of the Proposed Development is provided in ES Chapter 3 (**Document 5.3**).
- 3.1.3. This ASIDIOHL2 assessment is being undertaken in support of an Environmental Statement which is being submitted as part of a Development Consent Order application by National Grid.

### 3.2. PLANNING HISTORY

- 3.2.1. The circumstances of, and need for the Proposed Development are described in ES Chapter 1 (**Document 5.1**).

### 3.3. LEGISLATION AND POLICY

- 3.3.1. Relevant legislation and national policy is described in section 2 of ES Chapter 10 Historic Environment (**Document 5.10**), with local policy in Appendix 10.6 (**Document 5.10.2.6**).

### 3.4. CONFIDENCE LEVEL

- 3.4.1. The information used for this assessment has been appropriate and adequate for the requirements of the study undertaken. The primary source of data on the HLCAs was obtained from the character descriptions undertaken by GAT, with further information on designated features (such as scheduled monuments and listed buildings) obtained from Cadw, the Welsh Historic Monuments Agency. Further information on non-designated features for land within the vicinity of the Proposed Development was also obtained from the Historic Environment Record (HER), maintained by GAT and sources held at the National Monuments Record (NMR).

### 3.5. ASSESSMENT TEAM

- 3.5.1. This report has been written by Mike Glyde, BSc, MCIfA and Simon Atkinson BA (Hons) MCIfA. Mike is a qualified archaeologist with 17 years' experience in curating the historic environment.



## 4. Assessment of the Direct Physical Impacts (Stage 2)

### 4.1. LANDSCAPE OF OUTSTANDING HISTORIC INTEREST

4.1.1. Dinorwig LOHI has been subject to detailed characterisation by Gwynedd Archaeological Trust, which resulted in the definition of 36 Historic Landscape Character Areas (HLCA). Three of these include land which would be within the Order Limits and these are:

- HLCA 23 Arfon Plateau;
- HLCA 48 Vaynol; and
- HLCA 54 Improved Fields above Pentir.

4.1.2. Vaynol (HLCA 48) is entirely within that part of the development which is occupied by the tunnel and there would be no above ground development in this area. As a result of this, direct physical impacts would occur only within the Arfon Plateau and the Improved Fields above Pentir.

### 4.2. ARFON PLATEAU (HLCA23)

#### *Baseline description*

4.2.1. That part of the Proposed Development which is within the Dinorwig RLOHI lies principally within The Arfon Plateau (HLCA23) The characterisation (Annex B) describes this HLCA as:

*'The rolling landscape of the Arfon plateau (HLCA 23) is made up largely of improved pasture, most of which was formerly Vaynol land. The pattern of substantial nineteenth century farmhouses (e.g. Carreg Goch, Tyddyn Conclog, Tyddyn Oer) and outbuildings is typical of the estate. Relict prehistoric settlements (hut groups and small forts) are dotted across the landscape, usually in the corners of fields, and some fields display a curvilinear pattern characteristic of this period.'*

*'A wide area of disparate character, with the most prominent features being large enclosures and scattered farmsteads.'*

4.2.2. There are five scheduled monuments within HLCA23, four of which are prehistoric hut circle settlements, the fifth being a Bronze Age standing stone. These are:

- Gors y Brithdir Enclosed Hut Group & Ancient Fields (CN23);
- Fodol Ganol Enclosed Hut Group (CN175);
- Coed Nant-y-Garth, Standing Stone to N of (CN375);
- Cefn Mawr Hut Group (CN200); and
- Hut Circle South of Rhyd y Galen Pont-Rug (CN229).

4.2.3. There are 7 listed buildings within HLCA23, all of which are listed at Grade II. These are:

- Engine Shed on former Padarn Railway (LB18355);
- Road Bridge over former Padarn Railway (LB18346);
- Ddol (cottage) (LB22644);
- Erw-pwll-y-glo (LB3771);
- Milestone (LB22631);
- Milestone (LB22632); and
- Tyddyn-y-berth (LB22641).

4.2.4. The Padarn railway ran from the Dinorwig quarry to Port Dinorwig, and was built between June 1841 and December 1843. Initially, the slates from the quarry were drawn on wagons pulled by horses, but steam locomotives were introduced in 1848. The line of the dismantled railway bisects HLCA23 and its route can still be traced, partly in surviving field boundaries.

4.2.5. None of these designated heritage assets would be located within the Order Limits.

4.2.6. There is a relatively low density of non-designated assets recorded on the Historic Environment Record (HER) within HLCA23. The features which are recorded include a wide range of asset types and periods, reflecting occupation of this HLCA from the prehistoric period onwards, but most records are for post medieval boundaries and structures, reflecting the post-medieval agricultural organisation based on a series of farms which once formed part of the Vaynol estate.

4.2.7. In addition to the four scheduled hut circle settlements which are located within HLCA23 there are approximately five other known or possible hut circle settlement sites which are recorded on the HER. Some of these, such as

Circular Cropmark SE of Tyddyn Bach (HER59) have been identified only as circular features on aerial photographs. However, the nature of others have been confirmed by further investigation, and in particular, the Hut Circle, Bush Farm, Felinheli (HER3463) has been excavated in advance of road construction. This was confirmed as a late prehistoric and Romano-British settlement site comprising a series of roundhouses and associated field systems. Analysis of LiDAR generated hill shade mapping undertaken as part of the EIA for the North Wales Connection Project has also identified a possible hut circle settlement similar to Fadol Ganol at NGR SH54466853. This also corresponds to the location of HER5875. It comprises of a slightly raised ring like feature attached to a linear bank/field system, neither of which form part of the existing field pattern. Desk study and field survey has also identified a number of features within the Order Limits which are indicative of field boundaries likely to form part of a prehistoric field system. Features were initially identified on LiDAR data and subsequently through geophysical survey.

- 4.2.8. Other HER records also represent field systems associated with late prehistoric and Romano-British settlement, such as the Field System, Gors y Brithdir (HER3178), which is associated with the scheduled monument of the same name (CN23).
- 4.2.9. Finally, there are two possible Roman roads which cross through HLCA23. These are the possible routes from Segontium to Bangor (HER17829) and Segontium to Canovum (HER17833).
- 4.2.10. The relatively undeveloped nature of HLCA23 means that there is a high potential for previously unrecorded remains to be affected by the Proposed Development, the landscape being suitable for occupation from prehistoric times onwards, as evident from extant remains described above.
- 4.2.11. Land within the Order Limits comprises a series of small irregular pasture field on the northern side of the steep sided valley of Coed Nant-y-Garth, though it also includes land on the south side. A number of the field boundaries within the Order Limits are shown on the Bangor Tithe Map of 1840 and may date to the later 18th century. However, the course of Fodolydd Lane appears to have been re-aligned following construction of the Bangor and Caernarvon Railway (opened in 1851), and some of the field boundaries date to this time.

#### *Absolute direct impacts*

- 4.2.12. The absolute direct impact would be the cumulative area of ground disturbance to those elements within HLCA23 are listed in Table 4.1.

<b>Table 4.1 Component parts of developments with groundworks in HLCA23</b>			
<b>Development component</b>	<b>Area (m<sup>2</sup>)</b>	<b>Area (ha)</b>	<b>DCO Plan Reference</b>
Tŷ Fodol THH/CSEC, including Tŷ Fodol Construction Compound	33,800	3.38	Construction Plan DCO_F/NGCON/PS/01 Sheet 4 of 5 <b>(Document 4.14)</b>
Access Tracks	64,854	6.48	Construction Plan DCO_F/NGCON/PS/01 Sheets 4-5 of 5 <b>(Document 4.14)</b>
Temporary working areas (four required for pylon construction)	12,479	1.25	Construction Plan DCO_F/NGCON/PS/01 Sheets 4-5 of 5 <b>(Document 4.14)</b>
Pentir substation Extension (areas to the north-west and north-east of the existing substation)	17,400	1.74	Design Plan DCO_DE/PS/01 Sheet 4 of 9 <b>(Document 4.13)</b>
Pentir Substation construction compound	1,700	0.17	Construction Plan DCO_F/NGCON/PS/01 Sheet 5 of 5 <b>(Document 4.14)</b>
<b>Total area</b>	<b>130,233</b>	<b>13.02</b>	

4.2.13. The total area of the Arfon Plateau HLCA23 is 1,506 ha. The absolute direct impact of 13.02 ha equates to 0.86% of the HLCA. Therefore the absolute direct impact is anticipated as being Very Slight.

#### *Relative direct impact*

4.2.14. There would be no direct effect on any of the scheduled monuments or listed buildings which are located within HLCA23.

4.2.15. Construction of the Proposed Development within HLCA23 would result in the loss of sections of the irregular post-medieval field boundaries that are present within the Order Limits. The area of the Tŷ Fodol THH/CSEC would largely

affect later boundaries that were laid out following the realignment of Fodolydd Lane in the mid-19th century.

- 4.2.16. The current field boundary pattern is relatively consistent across the whole of HLCA23 and it has been calculated that there are approximately 670 km of field boundaries extant within it. The construction of the temporary access tracks would result in sections being removed, resulting in a total loss of c.480 m or 0.07% of boundaries. This work is also temporary and the boundaries would be replaced like for like.
- 4.2.17. The construction of the Tŷ Fodol THH/CSEC would result in the loss of all archaeological remains within the development footprint. The desk study and geophysical survey completed as part of the EIA has established that there are likely to be surviving archaeological remains which appear to form part of a field system of possible later prehistoric or Romano-British date. The geophysical survey (**Document 5.10.2.2**) did not indicate the presence of any likely settlement remains (such as hut circles) within the Order Limits. However, subsequent trial trenching (**Document 5.10.2.7**) did identify remains suggestive of the presence of a settlement site, most likely of a later prehistoric date, with associated field system. There was also evidence for industrial activity taking place within the settlement and further surviving field systems are likely to be associated with this and other settlement sites within the immediate vicinity, including potentially with CN175.

#### *Landscape Terms*

- 4.2.18. The Order Limits area would contribute to the value of the HLCA 23 in that the land use and field boundary pattern are typical of that which defines the character of the Arfon Plateau. The relatively small area that would be taken by the Proposed Development is such that the overall direct impact is small.

#### *Overall Conclusion*

- 4.2.19. By applying the calculations stipulated in the ASIDOHL2 requirements, the direct physical impacts on the Arfon Plateau (HLCA 23) results in a score of 11 which equates to a Moderate impact. The breakdown of these scores is set out in Table 4.2.

Table 4.2 Assessment of direct, physical impacts on HLCA23									
Absolute Impact (loss of area)					Magnitude and Score				
13.02 ha, 0.86% area					Very Slight - 1				
Relative and Landscape Impacts (loss of known elements or characteristics) and scores									
Element / % Loss		Category of element	Magnitude of effect	Landscape Value			Landscape Value Effect		Sum
Post-medieval Field Boundaries	0.3	B - 3	Very Slight - 1	Post medieval landscape	Considerable	4	Very Slightly Reduced	1	9
Late prehistoric/RB Field systems	0	C - 2	Very Slight - 1	Prehistoric landscape	Considerable	4	Very Slightly Reduced	1	8
Non-designated Late prehistoric/RB settlement sites	5	B - 3	Slight - 2	Prehistoric landscape	Considerable	4	Slightly Reduced	2	11
Roman roads	0	C - 2	Very Slight - 1	Roman activity	Medium	3	Very Slightly Reduced	1	7
No. of Elements: 4			Average score: 8.75			Final overall score: 9.75			
Overall magnitude: 10				Moderate					

#### 4.3. IMPROVED FIELDS ABOVE PENTIR (HLCA54)

##### *Baseline*

- 4.3.1. The eastern edge of the Order Limits includes a small area within the Improved Fields above Pentir (HLCA54) character area. HLCA54 comprises large post medieval fields, farmhouses and ribbon development of workers cottages, and is described in the historic landscape characterisation (Annex B) as:

*‘An area of fertile agricultural land in the southern part of the former parish of Pentir, which in the Medieval period may have formed the outer reaches of Maenol Bangor (and which may be the origin of the name, Pen-tir), but which by the late eighteenth century onwards was owned partly by the Vaynol estate and partly by the Penrhyn estate.’*

*‘The area is characterised by large, regularly laid-out fields, and by estate farmhouses and gamekeepers’ dwellings. These are typically substantial two-storey dwellings hung with slate on the first floor, and with a number of ornamental features such as decorated porches.’*

*‘In a number of locations, ribbon developments of labourers’ or quarrymen’s cottages have come into being alongside the road, with in a number of places substantial chapels. The nearest to a nucleated community is the group of houses and the public house at Pentir.’*

- 4.3.2. There is one scheduled monument within HLCA54, which is:

- Rectangular Earthwork 110 m NW of Coed Ty Mawr (CN156).

- 4.3.3. There are 15 listed buildings within HLCA54, all of which are listed at Grade II. 9 of these form part of a single farmstead group comprising Ty'n Llwyn Farm and these are:

- Fferm Glasynfryn (LB18922);
- Caerhun MC Chapel (LB18906);
- Pont-y-felin (LB3673);
- Capel y Gladdfa (Cemetery Chapel) (LB18928);
- Church of St Cedol (LB18904);
- Milestone opposite Bryn goleu (LB18904); and
- Ty'n Llwyn Farm and farm buildings (LB83283, 83284, 83281, 83282, 83169, 83280, 83170, 83279, 83285).

- 4.3.4. None of these designated heritage assets are located within the Order Limits.
- 4.3.5. HLCA54 contains some evidence for later prehistoric settlement, with a limited number of enclosures and recorded hut groups which likely date to this period, including an enclosed hut group at Ty-Mawr (HER11).
- 4.3.6. The route of a Roman road crosses through HLCA54, part of the suggested route from Segontium to Canovum (HER17834, 17835). Its presence south of Pentir substation has been confirmed by trial trenching (**Document 5.10.2.7**).
- 4.3.7. The scheduled monument CN156, may be a moated site, representing medieval settlement within the HLCA.
- 4.3.8. Other features recorded on the HER within HLCA reflect the 18th and 19th agricultural settlement of the area, when it was organised into a series of farms comprising large regular fields, forming part of the Vaynol estate.

*Absolute direct impacts*

- 4.3.9. The absolute direct impact would be the cumulative area of ground disturbance to those elements within HLCA54 are listed in Table 4.3.



<b>Table 4.3 Component parts of developments with groundworks in HLCA54</b>			
<b>Development component</b>	<b>Area (m<sup>2</sup>)</b>	<b>Area (ha)</b>	<b>DCO Plan Reference</b>
Temporary access track strip	14,651	1.46	Construction Plan DCO_F/NGCON/PS/01 Sheets 4-5 of 5 <b>(Document 4.14)</b>
Extension of Pentir Substation (area to the south-east of the existing substation)	16,400	1.64	Design Plan DCO_DE/PS/01 Sheet 4 of 9 <b>(Document 4.13)</b>
Pentir Substation construction compound	5,500	0.55	Design Plan DCO_DE/PS/01 Sheet 4 of 9 <b>(Document 4.13)</b>
Pentir construction compound	39,690	3.96	Construction Plan DCO_F/NGCON/PS/01 Sheets 4-5 of 5 <b>(Document 4.14)</b>
Total area	76,241	7.6	

4.3.10. The total area of the Improved Fields above Pentir HLCA54 is 1,403 ha. The absolute direct impact of 7.6 ha equates to 0.54% of the HLCA. Therefore the absolute direct impact would be Very slight.

4.3.11. As noted above, development within HLCA54 would be limited to the extension of the Pentir substation, temporary construction compound and the construction of temporary access tracks. The substation extension would be permanent. Access tracks and construction compound would be temporary and the boundaries would be replaced like for like.

#### *Relative direct impact*

4.3.12. There would be no direct effect on the scheduled monument or any of the listed buildings which are located within HLCA54.

4.3.13. Construction of the Proposed Development within HLCA54 would involve limited temporary removal of sections of the irregular post-medieval field boundaries that are present within the Order Limits, with the temporary loss of a total of approximately 90 m of field boundaries.

- 4.3.14. The current field boundary pattern is relatively consistent across the whole of HLCA54 and it has been calculated that there are approximately 670 km of field boundaries extant within it. The construction of the temporary access tracks would result in sections being removed, resulting in a total loss of c.436 m or 0.07% of boundaries. This works is also deemed temporary and the boundaries would be replaced like for like.
- 4.3.15. There are no known archaeological remains within the development footprint within HLCA54. The suggested route of the Roman road from Segontium to Canovum (HER17834, 17835) crosses along the edge of the area for the construction compound and there is some potential for associated archaeological remains to be present.

#### *Landscape Terms*

- 4.3.16. The Order Limits area contributes relatively little to the value of HLCA54, partly due to the presence of the existing Pentir Substation which is within HLCA54 and which is also largely enclosed by relatively recent tree plantations. The area dominated by Pentir Substation and the enclosing woodland occupies a large part of the Order Limits within HLCA54 and the remainder of the land use and field boundary pattern within the Order Limits are typical of that which defines the character of the Arfon Plateau. The relatively small area taken by the Proposed Development is such that the overall direct impact is small. With regards to the direct impact to the landscape of HLCA 54, the land take is even smaller and would have little or no impact.

#### *Overall Conclusion*

- 4.3.17. By applying the calculations stipulated in the ASIDOHL2 requirements, the direct physical impacts on the Improved Fields above Pentir (HLCA54) results in a score of 9 which equates to a Moderate impact. The breakdown of these scores is set out in Table 4.4.

Table 4.4 Assessment of direct, physical impacts on HLCA54									
Absolute Impact (loss of area)					Magnitude and Score				
7.6 ha    0.54% area					Very Slight - 1				
Relative and Landscape Impacts (loss of known elements or characteristics) and scores									
Element / % Loss		Category of element	Magnitude of effect	Landscape Value			Landscape Value Effect		Sum
Later prehistoric settlement	0	C - 2	Very Slight - 1	Prehistoric landscape	Medium	3	Very Slightly Reduced	1	7
Post-medieval Field Boundaries	0.07	C - 2	Very Slight - 1	Post-medieval settlement	Considerable	4	Very Slightly Reduced	1	8
Roman roads	1.66	B - 3	Very Slight - 1	Roman activity	Medium	3	Very Slightly Reduced	1	8
No. of Elements: 3			Average score: 7.66			Final overall score: 8.66			
Overall magnitude: 9				Moderate					

## 5. Assessment of the Indirect Impacts (Stage 3)

### 5.1. INDIRECT IMPACTS – DINORWIG LOHI

- 5.1.1. The Proposed Development would involve the construction of a Tunnel head House and cable sealing end compound within a wider compound to include parking and associated works at Tŷ Fodol in Gwynedd. This would connect to the Pentir Substation through a 400 kV OHL carried on four metal lattice pylons.

### 5.2. ARFON PLATEAU (HLCA23)

#### *Baseline*

- 5.2.1. A baseline description of HLCA23 is provided at Section 4.2. The principal historic landscape character elements of the Arfon Plateau are:

- Unimproved pasture;
- Pattern of substantial 19th century farmhouses and outbuildings;
- Relict prehistoric settlements (hut groups and small forts);
- Curvilinear field pattern characteristic of prehistoric period; and
- A wide area of disparate character, with the most prominent features being large enclosures and scattered farmsteads.

- 5.2.2. Being a predominantly pastoral rural landscape there is little documentary evidence or historical associations that elevates the significance of the HLCA.

#### *Indirect physical impacts*

- 5.2.3. The construction of the Tŷ Fodol THH/CSEC within HLCA23 would result in some separation of the potential hut circle site (HER5875) from part of the associated field system. It would also result in temporary fragmentation of part of the 18th and 19th century field system and frustration of grazing of pasture fields due to loss of part of the fields.
- 5.2.4. No further indirect physical impacts would be anticipated.

### *Indirect visual impacts*

- 5.2.5. There are no listed buildings within HLCA23 that are likely to experience a more than Very Slight effect as a result of changes to their settings.
- 5.2.6. Within HLCA23 there are a number of scheduled monuments, three of which are likely to have their setting altered by the Proposed Development. In particular, the four pylons of the OHL to Pentir Substation, as well as the entries into Tŷ Fodol CSEC and Pentir substation, would be visible from Fodol Ganol Enclosed Hut Group (CN175), at a minimum distance of 325 m with a minimum distance of approximately 250 m to the LOD and this is illustrated in **Document 5.10.2.8**. Also, Tŷ Fodol THH/CSEC and the line leading into it, would be clearly visible from Coed Nant-y-Garth Standing Stone (CN375) due to their proximity (approximately 470 m to the east, with a minimum distance of approximately 430 m to the LOD), and this is also illustrated in **Document 5.10.2.8**.
- 5.2.7. Further wireframe views of the Proposed Development from within HLCA23 are illustrated in **Document 5.8.2.2** Part 6 (Viewpoints 6/15, 6/18, 6/20, 6/21, 6/26, 6/27, 6/30 and 6/31).

### *Overall Conclusion*

- 5.2.8. As set out in Table 5.1 the indirect impacts on HLCA23 would be **Moderate**.

Table 5.1 Assessment of indirect impacts on HLCA23					
Indirect Physical Impact					
Impact	Category	Score	Magnitude	Score	Sum
Separation of potential hut circle site (HER5875) from part of associated field system	B - Regional Importance	3	Slight	2	5
Temporary fragmentation of part of the 18/19th century field system	C - Local Importance	2	Slight	2	4
Frustration of grazing of pasture fields due to loss of part of the fields	C - Local Importance	2	Slight	2	4
			Average	4.3	
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons, tunnel head house, SEC and substation extension on Gors y Brithdir Enclosed Hut Group & Ancient Fields (CN23)	A - National Importance	4	Slight	2	6
Visual impact of pylons, tunnel head house, SEC and substation extension on Fodol Ganol Enclosed Hut Group (CN175)	A - National Importance	4	Moderate	3	7
Visual impact of pylons, tunnel head house, SEC and substation extension on Coed Nant-y-Garth, Standing Stone to N of (CN375)	A - National Importance	4	Moderate	3	7
Visual impact of pylons, tunnel head house, SEC and substation extension on Cefn Mawr Hut Group (CN200)	A - National Importance	4	Very Slight	1	5

Visual impact of pylons, tunnel head house, SEC and substation extension on Hut Circle South of Rhyd y Galen Pont-Rug (CN229)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons, tunnel head house, SEC and substation extension on Engine Shed on former Padarn Railway (LB18355)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Road Bridge over former Padarn Railway (LB18346)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Ddol (cottage) (LB22644)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Erw-pwll-y-glo (LB3771)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Milestone (LB22631)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Milestone (LB22632)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Tyddyn-y-berth (LB22641)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Post-medieval Field Boundaries	C - Local Importance	2	Very Slight	1	3
Visual impact of pylons, tunnel head house, SEC and substation extension on Late prehistoric/RB Field systems	C - Local Importance	2	Very Slight	1	3
Visual impact of pylons, tunnel head house, SEC and substation	B - Regional	3	Slight	2	5

extension on Non-designated Late prehistoric/RB settlement sites	Importance				
Visual impact of pylons, tunnel head house and SEC on Roman roads	C - Local Importance	2	Very Slight	1	3
Development form		3.1	Slight	2	5.1
Development appearance		3.1	Moderate	3	6.1
			Average		4.62
			Impact Score		13
			<b>Moderate</b>		



### 5.3. VAYNOL (HLCA48)

#### *Baseline*

- 5.3.1. HLCA48 is located on the southern shore of the Menai Strait and largely comprises the site of the house and grounds of Vaynol. Vaynol has a long history of being a high status site and Vaynol Old Hall (LB4166) originates in the late medieval period. By the 19th century, Vaynol was the centre of the second largest estate in Caernarvonshire and the grounds of the hall were enclosed by a stone wall, which encloses much of the western half of this HLCA
- 5.3.2. The principal characteristics of this HLCA are:
- Vaynol Old Hall (late medieval);
  - Vaynol (largely built 1842, though earlier work may be incorporated);
  - Well preserved outbuildings dating from c.1605 to the 19th century; and
  - Demesne grounds including areas of pasture, woodland and tree belts and lakes.
- 5.3.3. The western half of HLCA48 is occupied by the Vaynol Registered Historic Park and Garden (GD42), which comprises the remaining part of the enclosed lands surrounding Vaynol Hall. There are numerous listed buildings located within the registered park of Vaynol, largely comprising the halls and surrounding farm buildings. Within this group there are three Grade I listed buildings which are:
- Vaynol Hall (LB4173);
  - Vaynol Old Hall (LB4166); and
  - Chapel of St Mary to N of Vaynol Old Hall (LB4172).
- 5.3.4. There are also Grade II\* listed buildings which are:
- Long Barn at Vaynol Farm (LB4184);
  - Gateway with inscription set in N boundary wall of Terrace Garden opposite Vaynol Old Hall (LB4170);
  - Terraced Garden to N of Vaynol Old Hall (LB4169);
  - Arched wall to forecourt of Vaynol Old Hall (LB18927); and

- The Best Stables on S side of Vaynol Old Hall and courtyard walls (LB4167).
- 5.3.5. There are also 27 Grade II listed buildings within the group east Vaynol Hall and this area is also designated as a conservation area.
- 5.3.6. A further Grade II\* listed building is located within the Vaynol Registered Historic Park and Garden, and this is a lodge called Bryntirion (LB14924) located approximately 1 km to the south-west of Vaynol Hall.
- 5.3.7. The wall which encloses Vaynol Registered Historic Park and Garden is also a Grade II listed building (LB 18910), as well as a series of entrance gates and lodges which mark the entrances to the park.
- 5.3.8. Other Grade II listed buildings within HLCA48 include:
- Britannia Bridge (LB 3674);
  - Lodge to the Britannia Park (LB 18913); and
  - Ysgol Treborth (LB 18918).
- 5.3.9. Ysgol Treborth is a former mansion house, built for Richard Davies, ship-owner and MP for Anglesey, who bought the Treborth Isaf estate in 1867. The house was probably built c1860-70.
- 5.3.10. There are no scheduled monuments or other designated heritage assets within HLCA48.
- 5.3.11. Most features recorded on the HER refer to features associated with Vaynol Hall and the Registered Park and Garden. However, a number relate to earlier activity within the park, such as an area of ridge and furrow, suggesting medieval ploughing (HER16981), and other elements of earlier field systems (HER16055) and quarries (HER17010). There are also records of prehistoric artefact finds in the area.

#### *Indirect physical impacts*

- 5.3.12. The tunnel would be bored underneath HLCA48, but the HLCA is approximately 550 m from the nearest element of the development where there would be surface ground disturbance. No indirect, physical impacts would be predicted to occur and therefore this stage has been omitted for this area.

### *Indirect visual impacts*

- 5.3.13. The Grade I Registered Park and Garden of Vaynol makes up much of the Vaynol HLCA48. It contains the Grade I Listed Vaynol Hall and the principal designed outward view from within the park is from the south front of the hall looking south towards the Snowdonia Mountains. This is identified as a 'significant view' of the Vaynol Registered Park and Garden, looking to the south to south-west from the hall. The pylons located between the Tŷ Fodol THH/CSEC and Pentir Substation would be theoretically visible in this view at a minimum distance of approximately 1.4 km. However, the pylons are likely to be substantially screened by trees within Lodge Covert and the substantial belt of trees located on the rising ground south of the A4087 and A487.
- 5.3.14. The group of historic building including the farm buildings set around Vaynol Old Hall are generally contained by local topography and surrounding trees such that there any outward views are limited, with no 'significant view' identified from this area. Other listed buildings within the park are generally located within woodland areas and therefore do not have clear outward views.
- 5.3.15. From elsewhere within the park, views toward the pylons within Gwynedd would be likely to be screened by trees from many parts of the park, though elsewhere there would be likely to be glimpsed views of pylons at a distance of between 1 km and 3 km. These would be seen to the west of the existing pylons which carry the existing 400 kV line into Pentir, and this limited visibility of additional pylons would result in only a Slight change. Views from the Menai shore of the park north toward the pylons within Anglesey would be screened by the trees within the rising ground within Plas Newydd.
- 5.3.16. Wireframe views of the Proposed Development from within HLCA48 are illustrated in **Document 5.8.2.2** Part 6 (Viewpoints 6/14, 6/16, 6/17).

### *Overall Conclusion*

- 5.3.17. As set out in Table 5.2 the indirect impacts on HLCA48 would be **Slight**.

Table 5.2 Assessment of indirect impacts on HLCA48					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Vaynol Hall (LB4173)	A - National Importance	4	Very Slight	1	5
Vaynol Old Hall (LB4166)	A - National Importance	4	Very Slight	1	5
Chapel of St Mary to N of Vaynol Old Hall (LB4172)	A - National Importance	4	Very Slight	1	5
Long Barn at Vaynol Farm (LB4184)	A - National Importance	4	Very Slight	1	5
Gateway with inscription set in N boundary wall of Terrace Garden opposite Vaynol Old Hall (LB4170)	A - National Importance	4	Very Slight	1	5
Terraced Garden to N of Vaynol Old Hall (LB4169)	A - National Importance	4	Very Slight	1	5
Arched wall to forecourt of Vaynol Old Hall (LB18927)	A - National Importance	4	Very Slight	1	5
The Best Stables on S side of Vaynol Old Hall and courtyard walls (LB4167)	A - National Importance	4	Very Slight	1	5
Bryntirion (LB14924)	A - National Importance	4	Very Slight	1	5
Vaynol Registered Park and Garden	A - National Importance	4	Very Slight	1	5
Grade II listed buildings in Vaynol	B - Regional Importance	3	Slight	2	5
Britannia Bridge (LB 3674)	B - Regional Importance	3	Very Slight	1	4
Lodge to the Britannia Park (LB 18913)	B - Regional Importance	3	Very Slight	1	4
Ysgol Treborth (LB 18918)	B - Regional Importance	3	Very Slight	1	4
Former field systems with Vaynol	D - Minor / Damaged	1	Very Slight	1	2

Quarries within Vaynol	D - Minor / Damaged	1	Very Slight	1	2
Development form		3.2	Slight	2	5.2
Development appearance		3.2	Slight	2	5.2
			Average		4.52
			Impact Score		6
			<b>Slight</b>		

## 5.4. IMPROVED FIELDS ABOVE PENTIR (HLCA54)

### *Baseline*

5.4.1. A baseline description of HLCA54 is provided at Section 4.3. The principal characteristics of the Improved Fields above Pentir are:

- An area of fertile agricultural land;
- May have formed the outer reaches of Maenol Bangor;
- Large, regularly laid-out fields;
- Estate farmhouses and gamekeepers' dwellings; and
- Ribbon developments of labourers' or quarrymen's cottages.

### *Indirect physical impacts*

5.4.2. As noted in Section 4.3, development within HLCA54 would be limited to a construction compound and construction of an access track. Both of these would be temporary impacts, with the ground being restored following completion of construction. Indirect physical impacts would therefore be limited to the temporary loss of field boundaries and the frustration of historic land use, in the form of grazing, within the limited affected area.

### *Indirect visual impacts*

5.4.3. The Listed Grade II complex of farm buildings at Ty'n Ilwyn (LBs 83169, 83170, 83279, 83280, 83281, 83282, 83283, 83284, 83285), to the east of the eastern end of the Order Limits would be located within HLCA54 (Improved Fields above Pentir), the proposed L6 pylon to the east of the existing Pentir Substation may be visible from the listed buildings. Effects on the setting of this group of listed buildings would be limited by the proposed mitigation planting along the boundary of Pentir Substation.

5.4.4. A wireframe view of the Proposed Development from within HLCA48 are illustrated in **Document 5.8.2.2** Part 6 (Viewpoint 6/19).

### *Overall Conclusion*

5.4.5. As set out in Table 5.3 the indirect impacts on HLCA54 would be **Moderate**.

Table 5.3 Assessment of indirect impacts on HLCA54					
Indirect Physical Impact					
Impact	Category	Score	Magnitude	Score	Sum
Temporary fragmentation of part of the 18/19th century field system	C – Local Importance	2	Very Slight	1	3
Frustration of grazing of pasture fields due to loss of part of the fields	C - Local Importance	2	Very Slight	1	3
			Average		3
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons, tunnel head house, SEC and substation extension on Caerhun MC Chapel (LB18906)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Capel y Gladdfa (Cemetery Chapel) (LB18928)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Church of St Cedol (LB18904)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on on Milestone opposite Bryn goleu (LB18904)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons, tunnel head house, SEC and substation extension on Ty'n Llwyn Farm and farm buildings (LB83283, 83284, 83281, 83282, 83169, 83280, 83170, 83279, 83285)	B - Regional Importance	3	Slight	2	5

Visual impact of pylons, tunnel head house, SEC and substation extension on Later prehistoric settlement	C - Local Importance	2	Very Slight	1	3
Visual impact of pylons, tunnel head house, SEC and substation extension on Post-medieval Field Boundaries	C - Local Importance	2	Very Slight	1	3
Visual impact of pylons, tunnel head house, SEC and substation extension on Roman roads	C - Local Importance	2	Very Slight	1	3
Development form		2.6	Slight	2	4.6
Development appearance		2.6	Moderate	3	5.6
			Average		4.02
			Impact Score		10
			<b>Moderate</b>		



## 5.5. FELINHELI OR PORT DENORWIC (HLCA27)

### *Baseline*

- 5.5.1. This HLCA comprises a port and estate village. The port was formerly used for the export of slates, and is now in use for yachts and pleasure vessels. The structure of the port survives largely intact, though there has been later 20th century development.
- 5.5.2. Principal characteristics are:
- Surviving port structure;
  - Largely 19th century building stock, many with ornamental features, such as verandas and railings; and
  - Range of building materials.
- 5.5.3. Much of HLCA27 comprises a 'ribbon' of settlement along the southern side of the valley of a valley leading down to the Menai Strait, with a watercourse opening out to form the port, and a continuation of the ribbon of settlement to the south of this. South of the port, the settlement occupies sloping ground facing out across Menai Strait, and so the settlement is generally contained and confined by the local topography.
- 5.5.4. The conservation area of Aberpwl is located within HLCA27, and this comprises a village at the northern end of the HLCA. There are a total of 25 listed buildings within HLCA27, and most of these are located within Aberpwl Conservation Area or grouped around the port. The listed buildings are therefore all located within the built up area of the HLCA, along the base of the valley, and this largely defines their setting. All of the listed buildings within HLCA27 are listed at Grade II and, they include the Dock System at Y Felinheli (LB17380). Part of the Vaynol Park Wall (LB 18344) is also within HLCA27, with the wall broadly marking the northern edge of the HLCA.
- 5.5.5. Features recorded within the HER that are within the HLCA largely reflect its historic function as a working slate port. There are various records of 19th century dock structures (many of these structures still surviving), including the *Outer Lock Gate* (HER15883) and *Inner Lock Gate* (HER 15885), and the *Dry Dock* (HER 15889). The Padarn Railway brought slate into the port, with the Penscoins Incline (HER20741) used to descend the gradient. A Tram Shed (HER 15893) is thought to have been used for maintenance.

#### *Indirect physical impacts*

- 5.5.6. HLCA27 is a minimum of 500 m from the Order Limits at its nearest point and there would be no indirect, physical impacts predicted to occur. This stage has therefore been omitted for this area.

#### *Indirect visual impacts*

- 5.5.7. Indirect visual impacts which have been assessed would be changes to the settings of the following historic elements within the HLCA:

- Aberpwl Conservation Area and listed buildings within it;
- Listed buildings and other structures relating to Port Dinorwig; and
- Structures associated with Padarn Railway.

- 5.5.8. Effects on the settings of these would be limited as their current settings are largely defined by their locations within the existing settlements of Port Dinorwig and Aberpwl.

#### *Overall Conclusion*

- 5.5.9. As set out in Table 5.4 the indirect impacts on HLCA27 would be **Slight**.

Table 5.4 Assessment of indirect impacts on HLCA27					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons on Aberpwl Conservation Area and listed buildings within it	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons on Listed buildings and other structures relating to Port Dinorwig	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons on Structures associated with Padarn Railway	C - Local Importance	2	Very Slight	1	3
Development form		2.6	Very Slight	1	3.6
Development appearance		2.6	Very Slight	1	3.6
			Average		3.64
			Impact Score		5
			<b>Slight</b>		

## 5.6. GWAUN (HLCA25)

### *Baseline*

- 5.6.1. HLCA25 is largely an area of former marsh which, was drained and enclosed in the second half of the 19th century, with forestry planting during the 20th century.
- 5.6.2. There are no designated heritage assets within HLCA25 and its history as a former marsh appears to be reflected in a very low number of features recorded on the HER. There is a small number of features which hint at some activity during the prehistoric period, and these are a group of circular and linear features at Coed Tyddyn-hendre (HER31745) which were identified on LiDAR data, a burnt mound at Efail Castell (HER16) and cropmarks, located east of Tan y Dderwen (HER55). There is little available information on any of these.

### *Indirect physical impacts*

- 5.6.3. HLCA25 is a minimum of 600 m from the Order Limits at its nearest point and there would be no indirect, physical impacts predicted to occur. This stage has therefore been omitted for this area.

### *Indirect visual impacts*

- 5.6.4. Pylons would be theoretically visible from part of the area only, with much of the HLCA screened by topography.

### *Overall Conclusion*

- 5.6.5. As set out in Table 5.5 the indirect impacts on HLCA25 would be **Very Slight**.

Table 5.5 Assessment of indirect impacts on HLCA25					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons on potential prehistoric archaeological remains	U - Further Information needed	1	Very Slight	1	2
Development form		1	Very Slight	1	2
Development appearance		1	Very Slight	1	2
			Average		2.00
			Impact Score		2.00
			<b>Very Slight</b>		

## 5.7. LLANDDEINIOLEN (HLCA24)

### *Baseline*

- 5.7.1. HLCA24 is an area which was owned by the Vaynol and Glascoed estates. It was enclosed by the late 18th century, possibly with elements of earlier enclosure. HLCA24 is within an area of low rolling hilling on the northern fringe of Snowdonia. It rises from the Afon Rhythallt to the south-west, rising to a high point of 160 mAOD, where a hill top is enclosed by Dinas Dinorwic Camp (CN017).
- 5.7.2. The principal characteristics of this HLCA are:
- Enclosure pattern established by the late 18th century, possibly with much earlier areas of enclosure;
  - Small irregular fields, winding lanes, relict archaeology ; and
  - Dominated by the hillfort at Dinas Dinorwic (CN017).
- 5.7.3. There are 4 scheduled monuments within HLCA24, and these are:
- Dinas Dinorwic (CN017);
  - Glascoed Round Cairn (CN150);
  - Glascoed Ancient Village (CN060); and
  - Cae Metta Hut Group (CN168).
- 5.7.4. Dinas Dinorwic Camp (SAM CN017) is a prominent multi ditched hillfort with expansive views in all directions, whilst both the Glascoed Ancient Village and Cae Metta Hut Group are enclosed hut circle groups, representing former settlements of prehistoric date.
- 5.7.5. There are two listed buildings within HLCA24, both of which are listed at Grade II. These are:
- Glascoed Hall (LB3682); and
  - Church of St Deiniol (LB14927).
- 5.7.6. Glascoed Hall originated as an early 17th century gentry house. It retains some original fabric, though has had considerable later alterations.

- 5.7.7. Further, non-designated features recorded on the HER also demonstrate prehistoric and Romano-British settlement in this area. These include a number of enclosed hut groups, as well as a range of artefact finds. The hut groups include Hut Group, Near Pen-y-bryn (HER12), of 2<sup>nd</sup> to 4<sup>th</sup> century date and with an associated field system, and a possible Hut Group at Tyddyn y Felin (HER5686). These suggest a pattern of settlement during the later prehistoric periods of small dispersed settlements comprising enclosed groups of huts with associated field systems.

*Indirect physical impacts*

- 5.7.8. HLCA24 is a minimum of 1.1 km from the Order Limits at its nearest point and there would be no indirect, physical impacts predicted to occur. This stage has therefore been omitted for this area.

*Indirect visual impacts*

- 5.7.9. The scheduled Iron Age Hillfort at Dinas Dinorwic Camp (SAM CN017), located at the eastern end of HLCA24 is located on a prominent hill with views to all directions. The Proposed Development would introduce new pylons in the view to the north at a distance of approximately 2.8 km. However, existing pylons are already visible in this direction and the change would not disrupt any intervisibility with other prehistoric monuments, or affect an appreciation of the local prominence of this hill-top monument.
- 5.7.10. A wireframe view of the Proposed Development from within HLCA24 is illustrated in **Document 5.8.2.2** Part 6 (Viewpoint 6/22).

*Overall Conclusion*

- 5.7.11. As set out in Table 5.6 the indirect impacts on HLCA24 would be **Slight**.

Table 5.6 Assessment of indirect impacts on HLCA24					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons on Dinas Dinorwic (CN017)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons on Glascoed Round Cairn (CN150)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons on non-designated hut groups of late prehistoric and Romano-British date	C - Local Importance	2	Very Slight	1	3
Development form		3.3	Very Slight	1	4.3
Development appearance		3.3	Very Slight	1	4.3
			Average		4.32
			Impact Score		6.00
			<b>Slight</b>		



## 5.8. HILLSLOPES BELOW MOEL Y CI/MOEL RHIWEN (HLCA53)

### *Baseline*

- 5.8.1. HLCA53 is a mix of enclosed and semi-enclosed pasture with block of forestry plantation, located between the hills of Moel Rhiwen and Moel yCi to the south and the improved fields above Pentir to the north. It therefore generally slopes down to the north from around 200 mAOD on the northern fringe of the hills to around 150 mAOD on the northern edge of the HLCA. The fully enclosed land represents 18th and early 19th century encroachment by the Vaynol and Penrhyn estates and is concentrated within low-lying land south of Rhiwlas, where a series of drains flow generally to the north.
- 5.8.2. This HLCA is marked by a series of hut groups which appear to represent prehistoric and Romano-British rural settlement. Four of these settlement sites have been designated as scheduled monuments, and these are:
- Enclosed Hut Group SW of Bronydd (CN227);
  - Enclosed Hut Group North-East of Caer Mynydd (CN225);
  - Enclosed Hut Group South-West of Caer Mynydd (CN226); and
  - Castell Llanddeiniolen (CN197).
- 5.8.3. There are no other designated heritage assets within HLCA53.
- 5.8.4. There are frequent remains of prehistoric and Romano-British rural settlement within the land southwest of Rhiwlas, and these include hut platforms (e.g. HER3172), hut circles (e.g. HER3175) and enclosures (e.g. HER3176).

### *Indirect physical impacts*

- 5.8.5. HLCA53 is a minimum of 1.7 km from the Order Limits at its nearest point and there would be no indirect, physical impacts predicted to occur. This stage has therefore been omitted for this area.

### *Indirect visual impacts*

- 5.8.6. The Proposed Development would introduce new pylons to the north at a minimum distance of approximately 3 km, but approximately 4 km from the location of most of the known prehistoric and Romano-British rural settlement remains located at the base of Moel Rhiwen. The pylons would theoretically be visible but at this distance, and with the intervening vegetation, visibility of the pylons is likely to be limited at most. Any such visibility would not affect an

appreciation of their relationship to the local topography on their base of hill slope location.

- 5.8.7. A wireframe view of the Proposed Development from within HLCA53 are illustrated in **Document 5.8.2.2** Part 6 (Viewpoint 6/24).

*Overall Conclusion*

- 5.8.8. As set out in Table 5.7 the indirect impacts on HLCA53 would be **Slight**.

Table 5.7 Assessment of indirect impacts on HLCA53					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of pylons on Enclosed Hut Group SW of Bronydd (CN227)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons on Enclosed Hut Group North-East of Caer Mynydd (CN225)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons on Enclosed Hut Group South-West of Caer Mynydd (CN226)	A - National Importance	4	Very Slight	1	5
Visual impact of pylons on Castell Llanddeiniolen (CN197)	B - Regional Importance	3	Very Slight	1	4
Visual impact of pylons on non-designated hut groups of late prehistoric and Romano-British date	C - Local Importance	2	Very Slight	1	3
Development form		3.4	Very Slight	1	4.4
Development appearance		3.4	Very Slight	1	4.4
			Average		4.40
			Impact Score		6.00
			<b>Slight</b>		

## 5.9. RHIWLAS (HLCA51)

### *Baseline*

- 5.9.1. Rhiwlas is a village located on a north facing slope to the north of Moel Rhiwen. It was formerly a small estate between the lands of the Vaynol and Penrhyn estates and originally developed as a settlement for slate quarry workers in the 19th century. It further expanded in the 20th century.
- 5.9.2. There are two listed buildings within HLCA51, and these are:
- Tros-y-Gonfa (LB22647); and
  - Cefn Braich (LB22640).

### *Indirect physical impacts*

- 5.9.3. HLCA51 is a minimum of 1.8 km from the Order Limits at its nearest point and there would be no indirect, physical impacts predicted to occur. This stage has therefore been omitted for this area.

### *Indirect visual impacts*

- 5.9.4. The Proposed Development would introduce new pylons to the north at a minimum distance of approximately 3.2 km. The pylons would theoretically be visible throughout the HLCA but given its built form actual visibility of pylons would be likely to be limited to open areas at the southern edge of the HLCA, which are at the highest point within the HLCA. From there, the pylons would be a minimum of approximately 3.6 km and not likely to be readily discernible against the ground beyond. Any such limited visibility of pylons would not affect an appreciation of the surviving historic characteristics and elements of this settlement.
- 5.9.5. A wireframe view of the Proposed Development from within HLCA51 is illustrated in **Document 5.8.2.2** Part 6 (Viewpoint 6/23) and there is also a photomontage from this location (F6).

### *Overall Conclusion*

- 5.9.6. As set out in Table 5.8 the indirect impacts on HLCA51 would be **Slight**.

Table 5.8 Assessment of indirect impacts on HLCA51					
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Tros-y-Gonfa (LB22647)	B - Regional Importance	3	Very Slight	1	4
Cefn Braich (LB22640)	B - Regional Importance	3	Very Slight	1	4
Development form		3.4	Very Slight	1	4.4
Development appearance		3.4	Very Slight	1	4.4
			Average		3.50
			Impact Score		5.00
			<b>Slight</b>		

## 6. Evaluation of Relative Importance (Stage 4)

### 6.1. ARFON PLATEAU (HLCA23)

- 6.1.1. The Arfon Plateau comprises an undulating area of enclosed pasture with dispersed farmsteads, deriving from the 18th and 19th century enclosure and remodelling of tenancies completed by the Vaynol estate. It is therefore representative of this process undertaken, by the estate, though this is not a rare type of historic landscape nationally.
- 6.1.2. The Arfon Plateau also contains evidence of dispersed prehistoric settlement, though examples within this HLCA are generally not well-preserved in comparison to some other areas within the Dinorwig RLOHI, or nationally.
- 6.1.3. The overall Stage 4 valuation of HLCA23 is **47 Considerable**. This is based on evaluation steps (a), (b) and (c) as set out in Tables 6.1 and 6.3.

### 6.2. IMPROVED FIELDS ABOVE PENTIR (HLCA54)

- 6.2.1. The Improved Fields above Pentir comprises large post medieval fields, farmhouses and ribbon development of workers cottages. It was largely owned by the Vaynol and Penrhyn estates and is characterised by large, regularly laid-out fields, and by estate farmhouses. As an area of largely 18th century enclosure with some evidence for earlier settlement, this is not a rare historic landscape type on a national level.
- 6.2.2. The overall Stage 4 valuation of HLCA54 is **35 Moderate**. This is based on evaluation steps (a), (b) and (c) as set out in Tables 6.3 and 6.4.

### 6.3. VAYNOL (HLCA48)

- 6.3.1. Vaynol comprises the walled Vaynol Park, and much of this is retained as it was remodelled in the 19th century. It is a fine example of a walled and landscaped park of the period and also a central feature of the Dinorwig RLOHI.
- 6.3.2. The overall Stage 4 valuation of HLCA48 is **79 High**. This is based on evaluation steps (b) and (c) as set out in Table 6.5.

#### 6.4. FELINHELI OR PORT DENORWIC (HLCA27)

- 6.4.1. Port Denorwic was the port of export for the slates produced within the Dinorwig quarries. It therefore served an important function in the economic system of the estate and retains a relatively well-preserved 19th century harbour at its core.
- 6.4.2. The overall Stage 4 valuation of HLCA27 is **68 High**. This is based on evaluation steps (b) and (c) as set out in Table 6.6.

#### 6.5. GWAUN (HLCA25)

- 6.5.1. Gwaun is largely a former marsh which was drained and enclosed in the second half of the 19th century, with forestry planting during the 20th century. Whilst the 20th century forestry formed part of the agricultural improvement of the historic landscape, this is not a rare historic landscape type.
- 6.5.2. The overall Stage 4 valuation of HLCA25 is **53 Considerable**. This is based on evaluation steps (b) and (c) as set out in Table 6.7.

#### 6.6. LLANDDEINIOLEN (HLCA24)

- 6.6.1. Llanddeiniolen was owned by the Glascoed as well as the Vaynol estates and was part of the process of late 18th century enclosure. This is not a rare historic landscape type, but the hill top Dinas Dinorwic Camp (CN017) is a prominent feature within the historic landscape as a whole.
- 6.6.2. The overall Stage 4 valuation of HLCA24 is **55 Considerable**. This is based on evaluation steps (b) and (c) as set out in Table 6.8.

#### 6.7. HILLSLOPES BELOW MOEL Y CI/MOEL RHIWEN (HLCA53)

- 6.7.1. The Hillslopes below Moel Y Ci/Moel Rhiwen are a mix of enclosed and semi-enclosed pasture with block of forestry plantation, located between the hills of Moel Rhiwen and Moel Y Ci to the south and the improved fields above Pentir to the north. It comprises 18th and early 19th century enclosure but is most notable for the good survival of prehistoric and Romano-British rural settlement remains. These comprise an important group within the context of the historic landscape as a whole.
- 6.7.2. The overall Stage 4 valuation of HLCA53 is **57 Considerable**. This is based on evaluation steps (b) and (c) as set out in Table 6.9.

## **6.8. RHIWLAS (HLCA51)**

- 6.8.1. Rhiwlas is a village located on a north facing slope to the north of Moel Rhiwen. It was formerly a small estate between the lands of the Vaynol and Penrhyn estates and originally developed as a settlement for slate quarry workers in the 19th century. It further expanded in the 20th century
- 6.8.2. The overall Stage 4 valuation of HLCA51 is **37 Moderate**. This is based on evaluation steps (b) and (c) as set out in Table 6.10.



Table 6.1 Evaluation and relative importance of the part of HLCA23 directly affected by development										
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(a) Whole of historic character area					(b) Whole of historic landscape area on the register				
Rarity				X					X	
Representativeness			X						X	
Documentation					X					X
Group Value			X						X	
Survival			X					X		
Condition			X					X		
Coherence	X							X		
Integrity		X				X				
Potential			X						X	
Amenity				X						X
Associations					X					X
Score	5	4	15	4	2	5	0	9	8	3
Total score	(30/55) x 100=55 Considerable					(25/55) X 100=45 Considerable				

**Table 6.2 Evaluation and relative importance in the national context, of**

HLCA23					
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(c) National context				
Rarity					X
Representativeness				X	
Documentation					X
Group Value			X		
Survival				X	
Condition				X	
Coherence			X		
Integrity		X			
Potential				X	
Amenity				X	
Associations					X
Score	0	4	6	10	3
Total score	(23/55) x 100=42      Considerable				

**Table 6.3 Evaluation and relative importance of the part of HLCA54 directly affected by development**

Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	Whole of historic character area					Whole of historic landscape area on the register				
Rarity			X						X	
Representativeness				X					X	
Documentation										
Group Value			X					X		
Survival				X					X	
Condition				X					X	
Coherence				X						X
Integrity			X						X	
Potential				X						X
Amenity					X					X
Associations					X					X
Score	0	0	9	10	2	0	0	3	10	4
Total score	(21/55) x 100=38 Moderate					(17/55) x 100=31 Moderate				

Table 6.4 Evaluation and relative importance in the national context, of HLCA54					
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	National context				
Rarity					X
Representativeness				X	
Documentation					X
Group Value				X	
Survival				X	
Condition				X	
Coherence		X			
Integrity			X		
Potential					X
Amenity					X
Associations					X
Score	0	4	3	8	5
Total score	(20/55 x 100=36) Moderate				

Table 6.5 Assessment of Relative Importance of HLCA48										
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity	X					X				
Representativeness					X					X
Documentation		X					X			
Group Value		X					X			
Survival	X					X				
Condition		X					X			
Coherence		X					X			
Integrity	X					X				
Potential			X					X		
Amenity		X					X			
Associations	X						X			
Score	20	20	3	0	1	15	24	3	0	1
Total score	(42/55) x 100=80 Very High					(43/55) x 100=78 High				

Table 6.6 Assessment of Relative Importance of HLCA27										
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity	X								X	
Representativeness				X					X	
Documentation		X						X		
Group Value			X					X		
Survival		X						X		
Condition		X						X		
Coherence		X					X			
Integrity		X						X		
Potential			X						X	
Amenity	X						X			
Associations		X					X			
Score	10	24	6	2	0	0	12	15	6	0
Total score	(42/55) x 100=76 High					(33/55) x 100=60 High				

Table 6.7 Assessment of Relative Importance of HLCA25										
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity				X					X	
Representativeness				X					X	
Documentation				X					X	
Group Value				X					X	
Survival					X					X
Condition					X					X
Coherence				X					X	
Integrity				X					X	
Potential				X						X
Amenity				X					X	
Associations				X						X
Score	0	0	0	18	2	0	0	0	14	4
Total score	(20/55) x 100=36 Moderate					(18/55) x 100=33 Moderate				

**Table 6.8 Assessment of Relative Importance of HLCA24**

<b>Value:</b>	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity		X						X		
Representativeness				X					X	
Documentation				X					X	
Group Value				X					X	
Survival			X						X	
Condition		X						X		
Coherence		X						X		
Integrity			X						X	
Potential		X						X		
Amenity		X						X		
Associations				X						X
Score	0	20	6	8	0	0	0	15	10	1
Total score	(34/55) x 100=62 High					(26/55) x 100=47 Considerable				



**Table 6.9 Assessment of Relative Importance of HLCA53**

<b>Value:</b>	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity		X						X		
Representativeness				X					X	
Documentation				X					X	
Group Value			X					X		
Survival		X						X		
Condition		X						X		
Coherence			X					X		
Integrity		X						X		
Potential		X					X			
Amenity				X						X
Associations				X						X
Score	0	20	6	8	0	0	4	18	4	2
Total score	(34/55) x 100=62 High					(28/55) x 100=51 Considerable				

Table 6.10 Assessment of Relative Importance of HLCA51										
Value:	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor	V. High/ V. Good	High/ Good	Mod/ Med	Low	V. Low/ Poor
in relation to: CRITERION:	(b) Whole of historic landscape area on the register					(c) National context				
Rarity			X						X	
Representativeness					X					X
Documentation			X						X	
Group Value					X					X
Survival			X						X	
Condition		X						X		
Coherence				X					X	
Integrity				X					X	
Potential					X					X
Amenity					X					X
Associations					X					X
Score	0	4	9	4	5	0	0	3	10	5
Total score	(22/55) x 100=40 Considerable					(18/55) x 100=33 Moderate				

## 7. Assessment of Overall Significance of Impact (Stage 5)

- 7.1.1. In accordance with the ASIDOHL guidance, the results of the Stage 2, 3 and 4 assessments have been incorporated into an overall assessment of the effects of the Proposed Development on the historic landscape. The assessment scores derived from Stages 2, 3 and 4 forms the basis of professional judgement as set out in Section 3.5, and the results of the assessment are summarised in Table 7.1.

Table 7.1 Historic Landscape Character Overall Assessment Summary			
HLCA	Value (Stage 4)	Impact (Stages 2 and 3)	Reduction of Value of the Historic Landscape on the register
Arfon Plateau (HLCA23)	The 18th and 19th century enclosure of the Arfon Plateau is representative of the of the land organisation undertaken by the Vaynol estate, but is not a rare type of historic landscape nationally.	This area of post medieval fieldscape would be affected by construction and operation of the development, with some loss of possible prehistoric field system remains. However, total loss of land within the HLCA would be less than 1%. The presence of Tŷ Fodol THH/CSEC and four pylons within this area would also affect the settings of some assets.	There would be some effect on remains associated with prehistoric settlement. However, the 18th and 19th century agricultural enclosure of the Arfon Plateau is not directly related to the slate mining remains, which are the principal historic element of the landscape on the register.
	Score: 4	Score: 5	Score: 4
Total Score: 13 Overall Significance of Impact: Moderate			
Improved Fields above Pentir (HLCA54)	Large post medieval fields resulting from largely 18th century enclosure, which is not a rare historic landscape type on a national level.	Construction would result in disturbance to only a very small (0.54%) part of this area, immediately adjacent to the existing Pentir Substation.	There would be a very limited amount of direct disturbance in this area. However, the 18th and 19th century agricultural enclosure of the Arfon Plateau is not directly related to the slate mining remains, which are the principal historic element of the

			landscape on the register.
	Score: 3	Score: 3	Score: 2
<p>Total Score: 8</p> <p>Overall Significance of Impact: Slight</p>			
Vaynol (HLCA48)	Vaynol Park is a fine example of a walled and landscaped park of the period and also a central feature of the Dinorwig RLOHI.	Tunnelling underneath this HLCA is not expected to affect its historic character so any impacts would be limited to visual impacts from the presence of pylons. Visibility of pylons in the 'significant view' looking south from Vaynol Hall would be limited by topography and vegetation cover.	Vaynol Park is an important part of the landscape on the register, the location and design of the development has limited effects on it.
	Score: 8	Score: 2	Score: 2
<p>Total Score: 12</p> <p>Overall Significance of Impact: Moderate</p>			
Felinheli or Port Denorwic (HLCA27)	A relatively well-preserved 19th century harbour which played an important part in the former slate industry of the Dinorwig RLOHI.	HLCA27 is a minimum of 500 m from the Order Limits, and the settings of the assets within it are defined by their locations within the existing settlements of Port	Port Denorwic is an important part of the landscape on the register, but would not be affected by the Proposed Development.

		Dinorwig and Aberpwll, which would not be affected.	
	Score: 7	Score: 1	Score: 1
Total Score: 9 Overall Significance of Impact: Slight			
Gwaun (HLCA25)	Enclosed and drained former marsh with 20th century forestry plantations.	Much of this HLCA would be screened from views of the proposed development by topography.	This is an area with 20th century forestry plantations and would not be affected by the Proposed Development.
	Score: 3	Score: 1	Score: 1
Total Score: 5 Overall Significance of Impact: Slight			
Llanddeiniolen (HLCA24)	Post-medieval fieldscape formed largely by 18th century enclosure, but the hill top Dinas Dinorwic Camp (CN017) is a prominent feature within the historic landscape as a whole.	Pylons would be visible from Dinas Dinorwic Camp at a distance of approximately 2.8 km. Existing pylons are already visible in this direction and the change would not disrupt any intervisibility with other prehistoric monuments, or affect an appreciation of the local prominence of this hill-top monument.	The principal effect on this area would result from the visibility of new pylons in a view from Dinas Dinorwic Camp. However, at a distance of 2.8 km and in a view in which existing pylons can be seen, this would have little effect on the value of the landscape on the register.
	Score: 5	Score: 2	Score: 2

Total Score: 9			
Overall Significance of Impact: Slight			
Hillslopes below Moel Y Ci/Moel Rhiwen (HLCA53)	Most notable for the good survival of prehistoric and Romano-British rural settlement remains.	Pylons would theoretically be visible at a minimum distance of approximately 4 km from the location of most of the known prehistoric and Romano-British rural settlement remains located at the base of Moel Rhiwen. At this distance, and with the intervening vegetation, visibility of the pylons is likely to be limited at most.	This area contains what is possibly the best preserved area of prehistoric settlement remains within the landscape on the register. Pylons would be theoretically visible from this area but at a distance of 4 km the effect would be limited.
	Score: 6	Score: 2	Score: 2
Total Score: 10			
Overall Significance of Impact: Moderate			
Rhiwlas (HLCA51)	19th and 20th century settlement.	Visibility of pylons would be likely to be limited to open areas at the southern edge of the HLCA, which are at the highest point within the HLCA. From there, the pylons would be a minimum of approximately 3.6 km and not likely to be readily discernible against the ground beyond. Any such limited visibility of pylons would not	As an area of 19th and 20th century settlement, this makes only a modest contribution to the historic character of the area on the register, and effects on this would be limited.

		affect an appreciation of the surviving historic characteristics and elements of this settlement.	
	Score: 3	Score: 2	Score: 2
<p>Total Score: 7</p> <p>Overall Significance of Impact: Slight</p>			



## 8. Concluding Statement

- 8.1.1. This ASIDOHL has assessed the effects of the North Wales Connection Project on the Dinorwig RLOHI. The North Wales Connection Project would connect Wylfa Newydd power station on Anglesey to the existing Pentir Substation, in Gwynedd. As Pentir Substation is within the Dinorwig RLOHI it is inevitable that the connection would need to cross through part of the landscape on the register and would have some effect on it. However, the adoption of a tunnel under the Menai Strait reduces the overall above ground permanent and temporary footprint within the landscape on the register to the following:
- Tŷ Fodol THH/CSEC;
  - Four pylons, with associated working areas;
  - Temporary access tracks;
  - OHL pylon construction compound;
  - Substation extension.
- 8.1.2. Much of this would be located within one HLCA, the Arfon Plateau (HLCA23), though a small part would be within Improved Fields above Pentir (HLCA54). The ASIDOHL has therefore considered the direct, physical impacts on these areas in terms of the total area affected as a proportion of the HLCA in question and the value of any historic features within the affected areas. Indirect, physical impacts such as severance, increased risk of exposure or erosion, or frustration of historic land use practices have also been considered.
- 8.1.3. The Proposed Development would also be visible from other HLCAs within the landscape on the register. Most clearly, this would be in the form of the four pylons which would be located within the historic landscape, but also the Tŷ Fodol THH/CSEC. The ASIDOHL has therefore included an assessment of indirect, visual impacts resulting from the visibility of these elements of the Proposed Development in views of and from locations within the historic landscape.
- 8.1.4. The Dinorwig area is included on the Register of Landscapes of Outstanding Historic Interest comprises an area extending from the uplands of the Snowdon massif at its southern edge, down to the gently undulating Arfon Plateau and the edge of the Menai Strait beyond. The mountainous uplands are cut by the

Dinorwig valley, or Nant Peris, which is a steeply sloping valley and is the location of extensive remains of the former slate mining industry. The slate quarries are the dominant visible remains of human activity within the Dinowig RLOHI, supporting its inclusion on the register. The quarries were linked to Port Dinorwig, from where the slate was carried by boat. The quarries were also owned by the Vaynol estate and the profits from this industry contributed to the development of the walled Vaynol Park. The historic landscape also contains agricultural land which was owned by the estate, much of which was enclosed during the 18th and 19th centuries, as well as some 20th century forest plantations.

- 8.1.5. The historic landscape also contains considerable evidence for prehistoric land use and settlement in the form of hut groups and associated field systems, as well as the Dinas Dinorwig hillfort. It is acknowledged, however, that much of the prehistoric settlement remains are not as well-preserved as those which can be found elsewhere in Wales.
- 8.1.6. The landscape also includes a number of substantial modern elements. The existing Pentir Substation is located within the Arfon Plateau and three existing OHLs converge on the substation, and the historic landscape is also cut by a number of trunk roads including the A55 and the A487.
- 8.1.7. Most of the HLCAs considered within the scope of this ASIDOHL are largely comprised of agricultural land which had been enclosed by the 18th or 19th centuries. Much of this enclosure was carried out by large landed estates which dominated land ownership in the 19th century. Most prominent was the Vaynol estate, which remodelled its tenancies and enclosed common land from the 18th century. Vaynol Park is also included in the scope of this ASIDOHL, as is Port Dinorwig on its southern side.
- 8.1.8. A detailed assessment of effects on the character of each of the individual character areas has been completed, taking account of potential effects on the settings of individual assets where appropriate. A summary of the assessment of effects on each of the individual HLCAs is included in Table 7.1, but in each case it is concluded that effects would be **Slight** or **Moderate**. This reflects a number of factors including:
- The limited extent of direct physical impacts as a proportion of the relevant HLCAs;
  - The limited extent of indirect, physical impacts;
  - The relative lack of visibility of the Proposed Development from within Vaynol Park and Port Dinorwig, which are important components of the historic landscape on the register; and,

- In some cases, the presence of existing modern elements of industrial use or infrastructure which affect the historic character of areas or principal assets.

8.1.9. The highest level of impact is predicted for the following areas:

- Arfon Plateau (HLCA23);
- Vaynol (HLCA48); and
- Hillslopes below Moel Y Ci/Moel Rhiwen (HLCA53).

8.1.10. Arfon Plateau would inevitably experience the greatest degree of impact as a result of the Proposed Development. Most of the Proposed Development which is located within the landscape on the register would be located within the Arfon Plateau, though would still cover less than 1% of the HLCA. The Proposed Development would also be most visible from within this HLCA, due to proximity. The Arfon Plateau was relatively little touched by the Dinorwig slate industry and so the only associated remains of this industry is the course of the Padarn Railway, which carried slate to Port Dinorwig. Prehistoric remains within the Arfon Plateau are also generally not well preserved, due to the extent of 18th and 19th century agricultural improvement. It is therefore concluded that in comparison to HLCAs with important and prominent elements of the slate industry and the Vaynol estate, impacts on this HLCA would carry relatively less weight overall in considering impact on the landscape of the register.

8.1.11. Vaynol Park does form an important HLCA in the context on the landscape on the register, and nationally. Whilst the Order Limits do cross this HLCA, this section is wholly within a tunnel and so there would be no physical impact. An important consideration in the assessment of indirect visual impacts has been the extent of any change in designed views from within the park. In this regard, the view from the south facing front of Vaynol Hall is of particular importance and it is concluded that pylons which be largely screened by trees and topography.

8.1.12. The Hillslopes below Moel Rhiwen comprise an important HLCA in the context of the landscape on the register as it contains the most well-preserved groups of prehistoric settlement sites within the register. However, these would be 4 km from the location of the pylons and their settings would not be affected.

8.1.13. Overall therefore, the Proposed Development would have a **Slight to Moderate** impact on the landscape of the register. The selection of a tunnel to cross the Menai Strait means that the above ground elements of the North Wales Connection Project that would be within the Dinorwig RLOHI would be confined to a relatively limited extent near to the existing Pentir Substation. The

development would involve the introduction of an additional, short section of OHL into the Pentir Substation, which would be seen alongside the three OHL which currently lead into Pentir. As well as some change in views, this would involve ground disturbance involving some loss of archaeological remains and some alteration of the 18th and 19th century fieldscape. There would therefore be localised impact within the landscape on the register but overall, its historic meaning and coherence would remain understandable and legible.

- 8.1.14. The significance of this effect in terms of the EIA is described in Section 9.6 of the Historic Environment Chapter of the ES (**Document 5.10**). This concludes that the Slight to Moderate effect is of low magnitude in EIA terms. As an area included in the Register of Landscape of Historic Interest in Wales, the Dinorwig LOHI is of national importance and therefore of high heritage value. Overall therefore, the significance of this effect in EIA terms would be minor and **Not Significant**.
- 8.1.15. The Archaeological Strategy (Document 7.8) set out the measures for the identification and recording of archaeological remains which would be lost as a result of construction of the Proposed Development. The measures set out in the Archaeological Strategy would be implemented within the Dinorwig RLOHI and would be expected to result in an increase in the archaeological knowledge of this area.

## 9. Bibliography

Cadw, 1998a Conwy, Gwynedd and the Isle of Anglesey, register of landscapes, parks and gardens of special historic interest in Wales. Part 1: Parks and gardens

Cadw, 1998b Landscapes of historic interest in Wales. Part 2: Register of landscapes, parks and gardens of special historic interest in Wales, part 2.1: Landscapes of outstanding historic interest.

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# Annex A

## Entry for Dinorwig in the Register of Landscapes of Outstanding

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## DINORWIG



*Chwareli Dinorwig.  
Dinorwig quarries.*

## Disgrifiad o'r tirwedd

Mae Dyffryn Dinorwig neu Nant Peris yn ochr ogledd orllewinol masiff Eryri. Gwelir effaith rhewliffiad yn gryf ar y dyffryn, sydd â'i ymylon clegyrrog yn codi'n serth ar y ddwy ochr. Yr Wyddfa yw'r copa uchaf yng Nghymru, yn 1085m uwchben SO ac yn sefyll yn uchel uwchben y dyffryn gan ddynodi terfyn deheuol yr ardal hon. Mae'r dyffryn, â'i ddau llyn Padarn a Pheris, yn agor tua'r gogledd orllewin i lwyfandir Arfon, sy'n ymdonni'n ysgafn ac yn sefyll tua 100m uwchben SO. Nid yw'n syndod fod y mwyafrif o'r twristiaid ac arlunwyr hynafiaethol a ymwelodd â'r ardal yn y 18fed a'r 19edd ganrifoedd wedi clodfodi harddwch golygfeydd yr ardal.

Parhaodd tystiolaeth sylweddol yn yr ardal o'r defnydd tir ac aneddiadau yn y cyfnod cynhanesyddol diweddar ac o ddaliadaeth tir yn y Canol Oesoedd, ond ar ben y patrymau cynharach ac yn goruchafu'r tirwedd presennol, mae gweddillion helaeth chwareli llechi o'r 19edd a'r 20fed ganrifoedd a'r aneddiadau ac isadeilaeth cludiant yn gysylltiedig â hwy. Digwyddodd y datblygiadau hyn oherwydd, ac yn gysylltiedig ag, Stad y Faenol, un o'r deiliaid tir pwysicaf a chryfaf yng Ngogledd Orllewin Cymru yn ystod y cyfnod ôl-ganoloedd.

Nid yw'r dystiolaeth o drefn y tirwedd yn ystod y cyfnod cynhanesyddol diweddar wedi cael ei chadw cystal ag mewn mannau eraill oherwydd gwelliannau amaethyddol a wnaed yma'n ddiweddarach. Bu tuedd i ddim ond y safleoedd aneddiadau mwyafrif, cryfaf, lwyddo i oroesi. Er hynny, mae modd yn aml canfod ble bu aneddiadau a chyfundrefnau caeau a ddinistriwyd erbyn hyn trwy edrych ar y rhannau bach a

## Landscape description

The Dinorwig valley, or Nant Peris, is situated on the north west side of the Snowdonian massif. The valley has been heavily glaciated with its craggy edges rising steeply on both sides. The summit of Snowdon, the highest peak in Wales at 1085m above OD, towers above the valley and defines the southern extent of this area. The valley, with its twin lakes Padarn and Peris, opens north westwards onto the gently undulating Arfonian plateau at about 100m OD. Not unexpectedly, the scenic grandeur of the area was celebrated by most of the antiquarian tourists and artists who visited the area in the late 18th and the 19th centuries.

The area has retained considerable evidence for late prehistoric land use and settlement, and for medieval land holdings, but superimposed over these earlier patterns, and dominating the present landscape, are the extensive remains of 19th and 20th centuries slate quarries, their associated settlements and transport infrastructure. These developments were made possible by, and were linked to, the Vaynol Estate, one of the most significant and powerful post-medieval landholdings in North West Wales.

The evidence for late prehistoric landscape organisation is not as well-preserved as in other areas because of later agricultural improvements. Only the more massive, robust settlement sites have tended to survive. However, it is often possible to trace the former extents of destroyed settlements and field systems where surviving fragments have been incorporated into later features. The multivallate Iron Age

oroesodd ac a gynhwyswyd mewn nodweddion diweddarach. Yr enghraifft orau efallai o hyn yw bryngaer amlgloddiog Oes yr Haearn Dinas Dinorwig, a saif ar wahân ar fryn gan oruchafu'r golygfeydd dros lwyfandir Arfon i bob cyfeiriad, ac o'i chwmpas olion tameidiog aneddiadau cytiau ac amgaeadau a mân olion cyfundrefnau a chloddiau caeau cysylltiol o'r un cyfnod, llawer ohonynt wedi'u cofnodi fel rhai a ddilewyd wrth glirio a gwella tir yn y 19edd ganrif. Goroedd gweddillion mwy cyflawn mewn rhai mannau ar y tir ymyl gwaeth na chafodd ei wella ar gyfer amaethyddiaeth, fel ar lethrau Moel Rhiwen i'r de ddwyrain o Dinas Dinorwig.

Adeiladwyd Castell Dolbadarn yn y 13edd ganrif, gan Llywelyn ab Iorwerth mae'n debyg, a saif ar gefn isel uwchben y culdir sy'n gwahanu Llynnoedd Padarn a Pheris. Cyfeirir mewn dogfennau o'r 14edd ganrif at hafodau yn Nolbadarn oedd yn perthyn i'r Tywysog, sydd bron yn sicr yn cydfynd â safleoedd archeolegol ac enwau lleoedd oddi amgylch Cwm Dwythwch ar lethrau isaf yr Wyddfa.

Tua diwedd y 18fed a dechrau'r 19edd ganrifoedd, daeth Castell Dolbadarn a'i gefndir yn destun poblogaidd i artistiaid oedd yn dymuno adlewyrchu syniadau esthetig yr oes o'r Prydferth, yr Aruchel neu'r Darlunaidwy. Mae darlun enwog

hillfort of Dinas Dinorwig is perhaps the best example, sitting on an isolated hill with dominant views of the the Arfonian plateau in all directions, but surrounded by a fragmentary complex of contemporary hut settlements and enclosures with traces of associated field systems and field banks, many of which are recorded as having been obliterated by land clearance and improvements in the 19th century. More complete remains do occasionally survive on the poorer, unimproved margins, such as on the slopes of Moel Rhiwen to the south east of Dinas Dinorwig.

Dolbadarn Castle, built in the 13th century, probably by Llywelyn ab Iorwerth, stands on a low ridge above the isthmus separating Lakes Padarn and Peris. Documentary evidence of the 14th century refer to Prince's 'havotries' or summer dwellings in Dolbadarn, which almost certainly correspond with surviving archaeological sites and placenames around Cwm Dwythwch on the lower slopes of Snowdon.

In the late 18th and early 19th centuries, Dolbadarn Castle and its setting became a popular subject for artists wishing to reflect the contemporary aesthetic notions of the Beautiful, the Sublime or the Picturesque. Turner's famous work, which was exhibited at the Royal Academy in 1802, captures the





*Llanberis, dyfrlliw gan Anthony Vandyke Copley Fielding (1787–1855), tua 1810. Llyfrgell Genedlaethol Cymru.*

*Llanberis, watercolour by Anthony Vandyke Copley Fielding (1787–1855), about 1810. National Library of Wales.*

notion of the Sublime perfectly, with the castle depicted as a gloomy, isolated tower set within a stark, windswept, mountain landscape, although most contemporary studies of the site were executed in less dramatic, Beautiful or Picturesque modes, typified by the scene opposite. The scenic popularity of the area continued throughout the 19th century, and in 1896, the 7.6km long Snowdon Mountain Railway, which is regarded as one of Britain's finest historic engineering achievements, was constructed from Llanberis to carry passengers to the summit of Snowdon.

During the same period, the area is linked with the growth, development and eventual domination of the Vaynol Estate, a process which has been charted in some detail. The estate no longer exists, but Vaynol Hall and its great walled park survive in the north west of the area on the banks of the Menai Strait. By the late 16th century, the estate was the principal landowner and ruthlessly consolidated its interest by the acquisition and extinction of any remaining medieval bond hamlets within the area. From the mid-18th century, following a period when they were in poor condition, tenancies were remodelled as they fell vacant, and the estate was improved and expanded by the enclosure of common land. From the 1850s onwards, capital was spent on improvements and plantations, and the great wall around Vaynol Park dates from this time.

As the economic potential of slate quarrying became evident, the industrial resources of the estate were also developed. In 1809, the Vaynol Estate followed the lead set by the Penrhyn Estate in the Ogwen valley (pp. 105–108) and developed the Dinorwig quarries of Nant Peris. Here, the main outlet for the slate was Port Dinorwig on the Menai Strait, which had had an artificial harbour since 1793. A road was built to the coast in 1790 for the easier export of slate, followed by an unsuccessful horse tramway which had to be later replaced by a new line, and finally, in 1848, by a new railway on a different route along the shores of Lake Padarn to Port Dinorwig. This ceased operating in 1962, just before the final closure of the Dinorwig quarries in 1969.

The quarries and their attendant settlements have left an indelible mark on this landscape. The main complex of workings on either side of the Peris valley is dominated by the Dinorwig quarries on the north side, with their massive waste tips and stepped working floors. There is a wealth of industrial archaeological remains, some of which, including a quarry hospital, have been preserved, or moved for safe-keeping, at the Vivian quarry and at the Dinorwig quarry workshop complex. The patchwork of quarrymen's tyddynod or smallholdings can also be seen on former common land on the surrounding slopes, while the settlements of Llanberis, Dinorwig, Deiniolen, Cwm-y-glo, Llanrug, Bethel and Port Dinorwig owe their development and present character to the industry. Social and economic conditions in Bethel in the early 20th century were graphically described by the Welsh litterateur W.J. Gruffydd in his autobiography, *Hen Atgofion*.

During the late 19th and early 20th centuries, the slate industry gradually declined which, partly as a consequence,

llechi fu'n gyfrifol am ddatblygiad a chymeriad presennol aneddiadau Llanberis, Dinorwig, Deiniolen, Cwm-y-glo, Llanrug, Bethel a'r Felinheli. Ceir darlun byw o'r amgylchiadau cymdeithasol ac economaidd ym Methel yn gynnar yn yr 20fed ganrif yn hunangofiant y llenor Cymraeg, W.J. Gruffydd, *Hen Atgofion*.

Yn rhan olaf y 19edd a rhan gyntaf yr 20fed ganrifoedd, bu dirywiad graddol yn y diwydiant llechi a fu'n rhannol gyfrifol am ddiwedd Stad y Faenol. Yr oedd yn broses hir a bu sawl anghydfod blin rhwng chwarelwyr a'r perchennog, rhwng tîrfeddiannwr a thenant, a adawodd olion cymdeithasol parhaol yn ogystal ag achosi newidiadau materol yn y tirwedd. Yn ystod yr 1960au, bu ad-drefnu amaethyddol helaeth mewn beth oedd mewn gwirionedd yn ymdrech olaf y stad i greu unedau llawn-amser hyfyw, ond ymddatodwyd y stad yn derfynol ym 1967, pan ddaeth 8,600 ha o dir ar yr Wyddfa ac o'i hamgylch ar y farchnad. Caodd y chwareli yn fuan wedyn ym 1969.

Tua diwedd y 1970au a dechrau'r 1980au, daeth rhan o safleoedd chwareli Dinorwig yn safle cynllun trydan-dŵr cronfa bwmp Dinorwig, y mwyaf yn Ewrop a'r trydydd mwyaf yn y byd. Crëwyd y gronfa uchaf ym Marchlyn Mawr, i ddyfrhau'r gronfa isaf yn Llyn Peris trwy bibellau a gorsaf gynhyrchu a leolwyd mewn siambr anferth a gloddiwyd o dan y ddaear, er mwyn cael cyn lleied ag y bo modd o effaith ffisegol ar y tirwedd.

#### CRYNODEB

<i>Rhif cyf</i>	HLW (Gw) 6
<i>Rhif map mynegai</i>	24
<i>Map AO</i>	Landranger 115
<i>Sir flaenorol</i>	Gwynedd
<i>Awdurdod unedol</i>	Gwynedd
<i>Prif ddynodiadau helaeth</i>	Mae hanner ddeheuol yr ardal o fewn Parc Cenedlaethol Eryri. Mae'r ardal yn cynnwys rhan o Warchodfeydd Natur Cenedlaethol a Safleoedd o Ddiddordeb Gwyddonol Arbennig y Gludeiriau a Chwm Idwal a'r Wyddfa. Cynhwysir hefyd: Safleoedd o Ddiddordeb Gwyddonol Arbennig Coed Dinorwig, Cwm Dwythych a Llyn Padarn; Safle Gwarchodaeth Castell Dolbadarn; Henebion Cofrestredig gweithdai chwarel Dinorwig a chwarel lechi Vivian; Ardaloedd Cadwraeth Aberpwl (Y Felinheli) a Nant Peris. Dosbarthwyd Plas y Faenol yn Adeiladau Rhedredig Graddfeydd I a II*.
<i>Meini prawf</i>	2, 3, 5
<i>Cynnwys ac arwyddocâd</i>	Llwyfandir arfordirol isel a dyffryn rhewlifol gerllaw ar ochr ogledd orllewinol yr Wyddfa, yn cynnwys tystiolaeth o ddefnydd tir ac anheddiad o'r cyfnod cynhanesyddol ymlaen, ac ar ben hynny weddillion helaeth ac amlwg y diwydiant llechi yn ystod y 19edd a'r 20fed ganrifoedd. Mae'r ardal yn cynnwys: bryngaerau, aneddiadau a chaeau o Oes yr Haearn; Castell Dolbadarn; aneddiadau canoloesol; chwareli, tomennydd rubel, aneddiadau, cyfundrefnau cludiant a phorthladd diweddar, Plas a Pharc y Faenol; cynllun trydan-dŵr cronfa bwmp tanddaearol pumpio a chronni Dinorwig; cysylltiadau llenyddol ac artistig hanesyddol.

#### SUMMARY

<i>Ref number</i>	HLW (Gw) 6
<i>Index map no.</i>	24
<i>OS map</i>	Landranger 115
<i>Former county</i>	Gwynedd
<i>Unitary authority</i>	Gwynedd
<i>Principal area designations</i>	The southern half of the area is within the Snowdonia National Park. The area includes parts of Gludeiriau and Cwm Idwal, and Yr Wyddfa (Snowdon) National Nature Reserves and Sites of Special Scientific Interest. It also includes: Coed Dinorwig, Cwm Dwythych and Llyn Padarn Sites of Special Scientific Interest; Dolbadarn Castle Guardianship Site; Dinorwig quarry workshop complex and Vivian slate quarry Scheduled Ancient Monuments; Aberpwl (Port Dinorwig) and Nant Peris Conservation Areas. Vaynol Hall is categorised as Grades I and II * Listed Buildings.
<i>Criteria</i>	2, 3, 5
<i>Contents and significance</i>	A low coastal plateau and adjoining glaciated valley situated on the north west side of Snowdon, containing evidence of land use and settlement from the prehistoric period onwards, superimposed by recent extensive and outstanding remains of the 19th and 20th centuries slate industry. The area includes: Iron Age hillforts, settlements and fields; Dolbadarn Castle; medieval settlements; recent quarries, waste tips, settlements, transport systems and port, Vaynol Hall and Park; the underground, Dinorwig hydro-electric pumped storage scheme; historic literary and artistic associations.

#### Ffynonellau detholedig / Selected sources

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## Annex B

# Historic Landscape Character Area Descriptions

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### Historic Landscape Characterisation

#### Arfon - Area 23 Arfon plateau



##### Historic background

The rolling landscape of the Arfon plateau is made up largely of improved pasture, most of which was formerly Vaynol land. The pattern of substantial nineteenth century farmhouses (e.g. Carreg Goch, Tyddyn Conclog, Tyddyn Oer) and outbuildings is typical of the estate. Relict prehistoric settlements (hut groups and small forts) are dotted across the landscape, usually in the corners of fields, and some fields display a curvilinear pattern characteristic of this period.

##### Key historic landscape characteristics

*Lowland plain, some relict archaeology*

A wide area of disparate character, with the most prominent features being large enclosures and scattered farmsteads.



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### Historic Landscape Characterisation

#### Arfon - Area 24 Llanddeiniolen/Dinorwic



##### Historic background

An area which was owned partly by the Vaynol estate, partly by the Glascoed estate. It was enclosed by the late eighteenth century, possibly much earlier.

##### Key historic landscape characteristics

*Small irregular fields, winding lanes, relict archaeology*

An area of small irregular enclosures and woods, and winding lanes, dominated by the hillfort at Dinas Dinorwic. It includes the church at Llanddeiniolen.

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### Historic Landscape Characterisation

#### Arfon - Area 25 Gwaun



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#### Historic background

An area now largely given over to small enclosures and woods, centred on the medicinal spring known as Ffynnon Cegin Arthur. The enclosures appear to date from the second half of the nineteenth century, before which the area was a notorious marsh.

#### Key historic landscape characteristics

*Forestry, small enclosures, drainage features*

Area of former marsh now largely planted over by 20th century plantation, with boggy fields in remainder of area.

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### Historic Landscape Characterisation

#### Arfon - Area 27 Y Felinheli (Port Dinorwic)



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#### Historic background

An unusual combination of port and estate village, of decidedly genteel character. The port remains in use for yachts; the port landscape and its constituent elements largely survive, though maisonettes have been constructed on the slate quay. The waterfront to the west preserves a number of early features e.g. sail loft and ferry landing point.

#### Key historic landscape characteristics

##### *Industrial settlement (port)/estate village*

The building stock is largely nineteenth-century and includes a variety of architectural style and of building materials. There is some use of non-local stone, including Aberdeen granite brought in as ballast on the ships. There is considerable use of yellow brick, as in the former station and the substantial Arvonian stores, though many structures are pebble-dashed. There are many buildings with ornamental features, such as verandas and railings.

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### Historic Landscape Characterisation

#### Arfon - Area 48 Vaynol



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#### Historic background

A high-status site since Medieval times, when the land here formed part of Maenol Bangor, but the estate increasingly fell into secular hands. Much of it became the demesne of the Vaynol estate, granted by William of Orange to Smith, the speaker of the House of Commons. This became by the nineteenth century the second largest estate in Caernarvonshire, enclosed from the 1830s by one of the characteristic stone walls which surround the homes of the local nobility and wealthier gentry, and which also took in other local gentry houses which Vaynol brought up, such as Bryntirion. Treborth is a development of the railway period.

#### Key historic landscape characteristics

##### *High-status dwelling and associated demesnes*

As well as Vaynol Old Hall, in origin a late Medieval building, and the later Vaynol, an undistinguished structure of 1842 in which earlier work may be incorporated, the grounds include some very well preserved outbuildings dating from c. 1605 to the nineteenth centuries. The demesne grounds have been partly developed as a business park and office space; however, most of the Vaynol demesne has been little touched since the estate's demise in the 1960s. Y Faenol Cyf. is currently in the process of establishing an architectural conservation school in the outbuildings with inward investment from the Slate Valleys Initiative/Menter Ardal y Lechen and the present owners of the site. Work is currently (January 2000) well advanced on conversion of some of the nineteenth century dairy buildings.

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### Historic Landscape Characterisation

#### Arfon - Area 51 Rhiwlas



#### Historic background

A north-facing slope which in the early nineteenth century formed a small estate in between Penrhyn and Vaynol lands and which came to be developed for housing. From the 1960s onwards there have been further housing developments, notably to provide housing for people working on the construction of Marchlyn Mawr reservoir. The village now appears at odds with its surrounding landscape.

#### Key historic landscape characteristics

##### Settlement

A mixture of nineteenth century dwellings and their associated infrastructure, and 1960s urban-type developments.



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### Historic Landscape Characterisation

#### Arfon - Area 53 Hillslopes below Moel y Ci / Rhiwen



#### Historic background

This area contains a fine distribution of relict archaeological sites, including hut circles and deserted rural settlements, many of which have been recently scheduled. Many of the circular patterns of field boundaries characteristic of the area (for example around Cae Mawr (SH580651) are almost certainly prehistoric in origin. Overlying these are areas of late eighteenth or early nineteenth century encroachment on the Gwaen Gynfi, latterly forming part of the Vaynol and Penrhyn estates. There are remains of a twentieth century wartime military camp at SH571648 interspersed with earlier relict remains.

#### Key historic landscape characteristics

##### *Relict archaeology, field patterns*

Visually, an area dominated by a pattern of small irregular fields mixed in with recent forestry plantations and a number of smallholdings. The importance and wealth of the relict archaeology has only relatively recently been recognised, but requires greater study.



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### Historic Landscape Characterisation

#### Arfon - Area 54 Improved fields above Pentir



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#### Historic background

An area of fertile agricultural land in the southern part of the former parish of Pentir, which in the Medieval period may have formed the outer reaches of Maenol Bangor (and which may be the origin of the name, Pen-tir), but which by the late eighteenth century onwards was owned partly by the Vaynol estate and partly by the Penrhyn estate.

#### Key historic landscape characteristics

##### *Improved agricultural land*

The area is characterised by large, regularly laid-out fields, and by estate farmhouses and gamekeepers' dwellings. These are typically substantial two-storey dwellings hung with slate on the first floor, and with a number of ornamental features such as decorated porches.

In a number of locations, ribbon developments of labourers' or quarrymen's cottages have come into being alongside the road, with in a number of places substantial chapels. The nearest to a nucleated community is the group of houses and the public house at Pentir.

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