

Application by RES UK & Ireland Limited, dated 27 March 2009
for consent under Section 36 of the Electricity Act 1989 to
construct and operate a 100MW wind turbine generating
station at Llanbrynmair, Powys

PROOF OF EVIDENCE ON CULTURAL HERITAGE

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CONTENTS

Section	Page No
1. Introduction	2
2. The position of other parties on cultural heritage	3
3. Scope of evidence	5
4. Cultural heritage information in the CSEI	6
5. The cultural heritage resource at Llanbrynmair	11
6. The potential effects of the development	13
7. Summary and Conclusions	18

1. Introduction

- 1.1 My name is Stephen Carter, I am a Senior Consultant with Headland Archaeology (UK) Ltd. Headland Archaeology is a Registered Organisation with the Institute for Archaeologists. I have been a full Member of the Institute for Archaeologists since 1991 and was elected a fellow of the Society of Antiquaries of Scotland in 2008.
- 1.2 I worked as a freelance field archaeologist for periods between 1978 and 1988 before taking up continuous employment in 1989. Between 1989 and 1995 I worked for the former Archaeological Operations and Conservation division of Historic Scotland, and then its commercial successor organisation AOC (Scotland) Ltd, as a specialist Geoarchaeologist and Project Manager. In 1996 I co-founded Headland Archaeology and was a Director of the company until 2008.
- 1.3 My experience of Environmental Impact Assessment has been built up since 1998, during which time I have prepared or been responsible for the cultural heritage chapters of numerous Environmental Statements. I have been involved with wind farms since 2000, initially working on Environmental Impact Assessments. More recently, as projects have moved through the planning process, I have also given evidence at Public Inquiries and Hearings, and managed mitigation works during the construction of wind farms. I am therefore familiar with all stages of the wind farm development process from site selection to construction. I have prepared or been responsible for the cultural heritage topic in over 25 wind farm Environmental Statements in Scotland, England, Wales and Northern Ireland.
- 1.4 I have provided evidence on cultural heritage matters for Public Inquiries or Hearings on for twenty wind farms including Mynydd y Gwair (Swansea, 2010) and Bryn Llywelyn (Cathmarthenshire, 2013).
- 1.5 My involvement with Llanbrynmair Wind Farm began in November 2012, at the start of the inquiry process, when I was commissioned by RES to give evidence on cultural heritage matters. I am author of the cultural heritage chapter of the final round of Consolidated Supplementary Environmental Information (the 'CSEI') submitted in August 2013) and also contributed to Statements of Case and Statements of Common Ground on behalf of RES..

- 1.6 In preparing my evidence, I have reviewed cultural heritage information contained in the original ES and various packages of Supplementary Environmental Information submitted before I became involved with the project. I have also read the representations on cultural heritage from Powys County Council, Cadw, Clwyd Powys Archaeological Trust (CPAT) and other parties. I have undertaken my own site visits to test the findings of the ES and I have undertaken my own assessment of operational effects of the wind farm, alone and in combination with other wind farms within TAN 8 SSA-B. The results of this assessment are presented in Chapter 7 of the CSEI.
- 1.7 The evidence which I have prepared and provide for this appeal in this proof of evidence is true and has been prepared and is given in accordance with the guidance of my professional institution (the Institute for Archaeologists) and I confirm that the opinions expressed are my true and professional opinions.

2. The position of other parties on cultural heritage

Powys County Council

- 2.1 The position of the Council on cultural heritage has changed during this public inquiry from an initial objection to a final position of no objection on cultural heritage grounds.
- 2.2 The Council first raised a cultural heritage objection to Llanbrynmair in its Letter of Objection dated 12/10/12 (CD/RES/BAC/006) This was maintained in its initial Outline Statement of Case in January 2013 (OBJ-002-OSOC-1) as RFO5, stating *“it is considered that the proposed development would have a detrimental impact on cultural heritage”*.
- 2.3 Subsequently, the Council updated its Outline Statement of Case in June 2013 (OBJ-002-OSOC-2); s7.5.2 reads as follows:
“The Council understand that the Applicant is in the process of producing further SEI in an attempt to demonstrate that the Council’s concerns in relation to the landscape and visual impact of this development can be overcome. No such SEI has been received. Once this SEI has been received the Council will complete its review of the individual and cumulative cultural heritage impacts of this development, they will update the Inquiry as soon as that review has been completed.”

- 2.4 Further SEI on cultural heritage was produced by the Applicant, to a specification agreed with the Council and its heritage advisor, Atkins Heritage. This was submitted in August 2013 as Chapter 7 of the CSEI (CD/RES/BAC/009).
- 2.5 This new information was reviewed by the Council and, in its most recent Statement of Case for SSA B in September 2013 (OBJ-002-SOC-SSA-B), the Council was able to withdraw its objection; s.5.6.1 states:
- “PCC raised a cultural heritage objection to the scheme principally due to their view that the works necessary to provide access for AILs had unacceptable impacts on listed buildings and other historical assets in and around Llanerfyl. PCC acknowledge that the work done in Llanbrynmair’s 2013 SEI has significantly overcome those concerns, and that any outstanding matters can be dealt with by way of detailed design. While there will still be cultural heritage impacts, PCC do not invite the Inspector to recommend refusal of the scheme on cultural heritage grounds.”*
- 2.6 The Council also makes clear in this Statement of Case that it would not be calling a cultural heritage witness for Session 2 (s.6.1)

The Alliance

- 2.7 The Alliance stated in its Outline Statement of Case dated January 2013 (ALL-OSOC) that *‘not one of the six developments should be allowed’* for various reasons including *‘adverse impact on notable features of cultural heritage’*. This general statement applied to all of the development proposals, so its relevance to Llanbrynmair was unclear.
- 2.8 The Alliance submitted a Statement of Case for SSA B in September 2013 (ALL-SOC-SSA-B). The section titled ‘Tourism and Visitors’, the Alliance stated (s.16):
- “Both for visitors and residents alike, the additional noise and distraction from turbines will add to their impacts and the adverse effects on aspects of heritage interest will add yet further to the overall impact (exacerbated by other associated infrastructure). Even heritage impacts assessed individually as ‘insignificant’ or ‘minor’ will cumulatively bring a significant adverse effect on the character and sense of place reinforcing yet further other impacts brought by the proposals.”*
- 2.9 This is the only reference to cultural heritage in the Alliance’s statement. I understand from this that the Alliance is not making a cultural heritage case *per se* at

Llanbrynmair but believes that adverse effects on heritage interest will impact on tourism, which is the focus of its objection.

Cadw

2.10 Cadw, the Welsh Government's Historic Environment Service, does not object to the Llanbrynmair application.

Clwyd Powys Archaeological Trust

2.11 The Clwyd Powys Archaeological Trust (CPAT), archaeological advisors to Powys CC) does not object to the Llanbrynmair application.

3. Scope of evidence

- 3.1 The purpose of this proof of evidence is to provide an overview of the predicted effects of the proposed Llanbrynmair Wind Farm on the cultural heritage resource of the area, as set out in the CSEI. In the absence of any objections on cultural heritage grounds, the scope of my evidence is as follows:
- A review of information provided in the CSEI in the context of relevant policy and guidance.
 - A summary of the cultural heritage resource of the application site and surrounding landscape.
 - A review of the potential effects of the proposed development, including measures taken to minimise or otherwise mitigate any adverse effects.
 - Conclusions regarding the effect of the development on the cultural heritage resource
- 3.2 It should be noted that my evidence will be restricted to the assessment of effects on historic assets. The matter of policy balance between adverse effects and benefits of the development will be addressed for RES by David Stewart.

4. Cultural heritage information in the CSEI

The status of the CSEI

- 4.1 Cultural heritage information relevant to the Llanbrynmair Wind Farm is contained in the CSEI (CD/RES/BAC/009), submitted as SEI in August 2013. The main text is presented as Chapter 7 of Volume 1, appendices are in Volume 2 (Appendix 7.1 and 7.2) and related figures in Volume 3 (Figures 7.1-7.7). Visualisations relevant to the assessment of visual change in the setting of historic assets form part of the information for the Landscape and Visual Impact Assessment (Volume 1, Chapter 4 and related figures in Volume 3).
- 4.2 The cultural heritage information in the CSEI represents a compilation of information on the topic already presented in the original Environmental Statement and in the five other SEI packages prepared after the application was submitted in March 2009. Some of the information already presented has been superseded, due to modifications to the application, and only information still current has been included in the CSEI.
- 4.3 Preparation of the CSEI involved a final series of amendments and updates to the cultural heritage information:
- Revision of the assessment of operational effects to address concerns raised by Powys County Council regarding potential effects on Listed Buildings, and to address recent changes in guidance on assessment of the setting of historic assets;
 - Updating and revision of the assessment of cumulative effects to reflect the current status of windfarms in TAN8 SSA B;
 - Updating of assessment of construction phase effects resulting from further changes in the wind farm site layout (re-positioning of electricity sub-station and concrete batching plant); and
 - Updating of the assessment of offsite highway works to reflect changes in the proposed route from Llanerfyl and addition of a second route from Talerddig.
- 4.4 The CSEI therefore completes and updates the original cultural heritage information relevant to the final design. It entirely replaces any information on the cultural heritage topic in the original ES and earlier SEI packages.

Compliance with legislation, policy and guidance

4.5 The structure and content of the cultural heritage information in the CSEI has been designed to meet the requirements of relevant legislation and policy, providing all information required by the decision-maker to reach an informed judgement regarding the acceptability of the proposed development on cultural heritage grounds. The CSEI also follows the recommendations of relevant current guidance on cultural heritage matters.

Legislation

4.6 Legislation regarding Listed Buildings and Conservation Areas is contained in the Planning (Listed Buildings and Conservation Areas) Act 1990 (CPL-LEG-008). There is one Listed Building within the proposed wind farm site but this will not be directly affected by development. Potential effects are therefore limited to harm resulting from change in setting. With respect to 'setting', Section 66 of the Act states (in part):

"In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting".

4.7 The setting of an historic asset is defined as *"the surroundings in which an historic asset is experienced, its local context, embracing present and past relationships to the adjacent landscape."* (Cadw, *Conservation Principles*, 2011: Definitions. CPL-CUL-003)

4.8 The CSEI considers the settings of all Listed Buildings likely to be affected by the proposed development including all grades up to 5km from the wind turbines and higher grade assets up to 10km from the turbines (Section 7.7 of the CSEI, from 7.7.54 onwards). It explains why the settings of most Listed Buildings would not be affected and, in the one case where an effect is predicted, this is fully described and assessed.

4.9 The CSEI therefore contains all information necessary to allow the decision maker to fulfil their obligation under the Act to have 'special regard'.

4.10 There are no Conservation Areas within the application site. As the setting of Conservation Areas is not protected in statute, the 1990 Act is not relevant to the assessment of Conservation Areas in this case. They are covered by relevant planning policy, described below.

4.11 Legislation relating to archaeological monuments is contained in the Ancient Monuments and Archaeological Areas Act 1979 (CPL-LEG-010). There is one Scheduled Monument within the proposed wind farm site but this will not be directly affected by the development; potential effects on significance are therefore limited to harm resulting from change in setting. The Act makes no reference to the setting of Scheduled Monuments and therefore has no direct bearing on the issues raised in the present assessment.

4.12 7.3.4 No other types of historic asset are protected or controlled by statute.

Policy

4.13 Planning Policy Wales (5th Edition, November 2012; CD/COM/008) contains current land use planning policy for Wales. Chapter 6 (Conserving the Historic Environment) sets out the Welsh Government's objectives in respect of cultural heritage, and encompasses archaeology and ancient monuments, listed buildings, conservation areas and historic parks, gardens and landscapes (PPW5, 6.1.1).

4.14 PPW5 reiterates the obligation under Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 with regard to the setting of Listed Buildings but also establishes a number of material considerations: the desirability of preserving Ancient Monuments and their settings (6.5.1), Conservation Areas and their settings (6.5.17) and Registered Historic Parks and Gardens and their settings (6.5.25). With regard to landscapes included in the second part of the Register, PPW5 states that these should be taken into account "*in considering the implications of developments which are of such a scale that they would have a more than local impact on an area on the Register.*" (6.5.25).

4.15 The broad definition in PPW5 is fully reflected in the scope of the cultural heritage assessment in the CSEI with all relevant types of historic asset included. This includes consideration of the potential for effects on Scheduled Ancient Monuments up to 10km from the proposed wind turbines, Conservation Areas up to 5km, and assets in the *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales* up to 5km (Grade II Assets) and 10km away (Grade I and II* assets and landscapes).

4.16 Policies in the Powys County Council UDP (2001-2016) do not introduce any aspects of cultural heritage not already covered in national planning policy (PPW5) and

therefore the scope of the CSEI also provides all of the information required to address the Development Plan policies.

- 4.17 The most direct policy statement defining what cultural heritage information is required in support of the Llanbrynmair application is provided by the NPS for Energy (EN-1). This sets out the national policy for energy infrastructure, which encompasses onshore wind farms generating more than 50 MW. The necessary scope of the assessment is defined in NPS EN-1 as follows:

“...the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset.” (5.8.8)

“Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact.” (5.8.9)

“The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents.” (5.8.10)

- 4.18 This scope of assessment from NPS EN-1 provides all of the information required to inform the relevant national development management policies in Planning Policy Wales (PPW5 Figure 6.1 p.97) and policies in the Powys CC UDP. It also informs the statutory obligation, relating to Listed Buildings, under s66 of the Planning (Listed Building and Conservation Areas) Act 1990.

Guidance

- 4.19 Certain aspects of the methodology applied in the CSEI have been informed and shaped by guidance documents issued by Cadw and English Heritage. Key aspects of this guidance have been issued since the original ES was prepared for Llanbrynmair and these new developments were influential in revision of the assessment in 2013, particularly in relation to ‘setting’.
- 4.20 The overall approach to heritage ‘significance’ in the CSEI, including the recognition of ‘cultural values’ and the role of setting in significance, is based on the advice in *Conservation Principles* (Cadw, 2011; CPL-CUL-003).

- 4.21 The methodology for assessment of operational effects, relating to visual change in the setting of historic assets follows recent guidance from English Heritage (*The Setting of Heritage Assets*, 2011; VATT-CUL-001) along with wind-farm specific guidance in *Wind Energy and the Historic Environment* (English Heritage, 2005; CD/COM/CUL/001).
- 4.22 Finally, the assessment of predicted effects on the historic landscape character has been based on the ASIDOHL2 methodology promoted by Cadw in its *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process* (Cadw 2007, CPL-CUL-004).

Conclusions regarding the CSEI

- 4.23 I believe that the CSEI supplies all of the information required under policy and statute to permit a decision-maker to reach an informed decision regarding cultural heritage matters.
- It considers the full range of historic assets including both designated and undesignated assets, discrete sites and larger areas of historic interest as defined by Cadw (*Conservation Principles*, 2011, Definitions p.36; CPL-CUL-003) and PPW5 (6.6.1; CD/COM/008).
 - It adopts study areas of sufficient size to identify all assets that would be affected by the proposed development, including those where only the setting would be affected.
 - It addresses the potential for direct and indirect physical effects on an asset and effects relating to change in the setting of an asset.
 - It considers the potential for effects during construction, operation and decommissioning of the development and the potential for cumulative effects in combination with other wind farm developments.
 - It systematically identifies which assets would be affected and, conversely, explains why others would not be affected.
 - It describes the significance of affected assets, including the contribution made by setting, in sufficient detail to allow the predicted effect of the development to be understood.

- It refers to representative visualisations, where relevant, to support the assessment of effects.
- Overall, the scope and level of information provided is proportionate to the predicted effects of the development.

5. The cultural heritage resource at Llanbrynmair

- 5.1 The effect of the proposed development, in terms of the nature and degree of harm to the significance of historic assets, fundamentally reflects the character of the cultural heritage resource of the application site and surrounding landscape. It is therefore important to summarise the types of historic asset present and their distribution before moving on to a consideration of the predicted effects of the development. This topic is addressed in more detail in Section 7.5 of the CSEI.
- 5.2 The character of the historic landscape in the application site and the area up to 10km from it falls into one of two main types (illustrated by the LANDMAP Historic Landscape aspect areas, see CSEI Appendix 4.2). It comprises blocks of upland plateaus and ridges separated by relatively deep and narrow valleys. The uplands are currently uninhabited and have been for much of prehistory and the historic past; the valleys are areas of permanent agricultural settlement.
- 5.3 The uplands are currently marginal land, a mosaic of enclosed improved land and open moorland, used for livestock grazing and forestry. Historic assets include ritual and funerary monuments of Neolithic and Bronze Age date (barrows, stone circles and stone rows) and some prehistoric settlement sites (hut circles). These have survived as upstanding features because of the limited impact of more recent settlement and agriculture on the higher areas of moorland. Some of the prehistoric features have been designated as Scheduled Monuments. There are also a range of undesignated archaeological features of more recent date (medieval or post-medieval) that relate to short-lived episodes of settlement and cultivation: isolated buildings (hafodau), clearance cairns, field boundaries and sheepfolds.
- 5.4 The valleys contain an irregular fieldscape with hedged boundaries and a settlement pattern comprising isolated farmsteads of late medieval or post-medieval date with only

a few small nucleated settlements. One result of this dispersed settlement pattern is the designation of only two Conservation Areas within the study area.

- 5.5 There are very few recorded assets of prehistoric date in the valleys; it may be assumed that sub-surface archaeological deposits exist but visible evidence has been almost entirely erased by more recent agricultural land use and settlement. The earliest surviving buildings in the valleys are a few medieval churches, for example at Llan, Llanerfyl and Llangadfan (all Listed Buildings, Grade II* or II). These churches were contemporary with the now abandoned earthwork castles near Llanbrynmair and Llanerfyl (both Scheduled Monuments). There are also at least two surviving timber-framed farmhouses of late-medieval or early post-medieval date in the study area.
- 5.6 The majority of the buildings of historic interest in the valleys are stone-built farmhouses, agricultural buildings and a few more specialised buildings such as inns and chapels. These are generally of 18th and 19th century date and some are Listed Grade II. There is a notable absence of larger and architecturally ambitious houses with only two more substantial houses of 17th century date present (both Grade II*). This appears not to have been a wealthy area and buildings tend to be modest in scale and strictly functional in nature. These qualities extend to the medieval churches, which are plain and small, and are also reflected in the absence of any Grade I Listed Buildings or registered parks and gardens of historic interest within the study area.
- 5.7 The strong contrast between the types of historic asset in the upland and valley landscapes results in distributions of Scheduled Monuments on the one hand and Listed Buildings and Conservation Areas on the other that are largely mutually exclusive. The uplands are characterised by Scheduled Monuments of prehistoric date, although these are not uniformly distributed and tend to occur in loose clusters. The valleys are characterised by Grade II Listed Buildings, mostly vernacular farm buildings of 18th and 19th century date with rare examples of earlier, more important buildings (including medieval churches) that merit Listing at Grade II*.
- 5.8 The proposed Llanbrynmair Wind Farm is located within one of the blocks of upland landscape which contains the mix of undesignated prehistoric and medieval/post-medieval assets noted above; these are described in Section 7.5 of the CSEI. This area does not contain one of the clusters of prehistoric ritual and funerary monuments

found on some hill tops in this area and, as a result, there is only one Scheduled Monument (a round barrow) within 2km of the proposed wind turbines.

- 5.9 The application site is also remote from most Listed Buildings and there are only three Grade II Listed Buildings (all farmhouses) within 2km of the proposed wind turbines. Most Listed Buildings are located well to the north and south of the application site in the valleys of the Afon Banwy and Afon Twymyn. With the exception of the church at Llan, listed Grade II*, all Listed Buildings within 5km of the proposed wind turbines are Grade II assets (see CSEI Figure 7.2).
- 5.10 It may be concluded that the rarity of high-grade designated assets, the absence of designed landscapes and the concentration of designated assets away from the Llanbrynmair application site all contribute to the very low level of adverse effects predicted for this development in the CSEI.

6. The potential effects of the development

- 6.1 The potential effects of the Llanbrynmair development alone are assessed in Section 7.7 of the CSEI with cumulative effects assessed in Section 7.10. The results of these assessments, and measures proposed to mitigate any adverse effects, are summarised in the Statement of Significance at Section 7.11.

Construction phase effects

- 6.2 The potential construction phase effects at Llanbrynmair are, based on my experience of other developments in similar landscapes in Wales, Scotland and northern England, entirely typical of a large upland wind farm. The heritage resource comprises a variety of visible assets that can generally be avoided by careful design of the wind farm layout, reflecting the characteristic small footprint of the development and a degree of flexibility in the layout.
- 6.3 Of the 88 recorded historic assets within the application site, only three cannot be avoided by construction works (CSEI 2103 Table 7.11). These assets are an area of peat cuttings (N24), a group of clearance cairns (N10) and an isolated cairn (N36). Failure to avoid these assets during the design process reflected the need to take account of constraints due to other environmental factors, such as peat deposits,

vegetation and birds where the balance of interest was deemed to lie with avoidance or reduction of harm to those other interests. The three affected assets are all considered to be of low importance and do not merit preservation in situ; any loss or damage will be entirely mitigated through a suitable programme of archaeological recording.

- 6.4 Overall, I consider the high level of avoidance of known assets to be a successful outcome of the wind farm design process, minimising adverse effects within the limitation of conflicting constraints on the layout.
- 6.5 A further nine assets are considered to be located sufficiently close to proposed wind farm construction works to merit protection during those works. These are listed at Section.7.7.16 and their locations are shown in Figure 7.4 of the CSEI. Again, this is a typical outcome for upland wind farms that will be addressed through construction management procedures, ensuring that suitable fencing is in place and contractors are suitably briefed about the need to protect these areas.
- 6.6 There is also the inevitable potential for currently unrecorded sub-surface archaeological features (CSEI, 7.7.15). Whilst there is an unavoidable degree of unpredictability regarding sub-surface features, my experience to date of wind farm construction in upland areas of Scotland and Wales indicates that the overall level of unexpected discoveries is low. Any features encountered can be excavated and recorded to a suitable standard as part of the construction process.
- 6.7 The potential effects of the more-limited offsite highway works are even less than those assessed for the wind farm site (CSEI, 7.7.110). All recorded heritage assets have been avoided, leaving just the limited potential for currently unrecorded remains in the few areas of more extensive groundworks.
- 6.8 Mitigation of any adverse effects that might arise during construction works will be secured through an appropriately worded condition.

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Operational period effects

The assessment of visual change in setting

- 6.9 The potential for operational period effects relates to those historic assets where visual change in their setting due to the presence of the wind farm would adversely affect the significance of the asset.

- 6.10 Approaches to the setting of historic assets has evolved rapidly in the past few years and the most detailed current guidance on the topic is that issued by English Heritage (The Setting of Heritage Assets, 2011, VATT-CUL-001). This guidance is entirely compatible with the relatively brief references to setting in Welsh policy and guidance, for example in PPW5 and Cadw's *Conservation Principles* (2011). In this latter document Cadw borrows explicitly from English Heritage's own document with the same title, including its chosen definition of 'setting' and the concept of heritage significance. I therefore find no difficulty in applying the English Heritage approach to setting in Wales.
- 6.11 The key concept underpinning the English Heritage approach is that change in the setting of an asset does not automatically constitute an effect on the significance of that asset. The change, which in the present case would be visual change, would only constitute an effect if it affected the contribution which the setting made to the significance of the asset. To establish whether this is the case it is necessary to understand how the setting contributes to the significance of the asset. It is therefore entirely feasible, indeed it is highly likely, that examples of two different type of historic assets experiencing the same visual change will be affected differently.

Assessment of operational effects at Llanbrynmair

- 6.12 Assessment of the potential operational effects of the Llanbrynmair Wind Farm (CSEI, 7.7.19 to 7.7.101) identified only three historic assets that would be adversely affected due to visual change in their setting. These are the Moel Ddolwen hillfort, a Scheduled Monument (MG149) 2km east of the proposed windfarm; the Church of St Mary in Llan, a Grade II* Listed Building (7605) 5km south-west of the windfarm; and Llan Conservation Area, also 5km to the south-west.
- 6.13 In each case the magnitude of effect was assessed as slight and would be entirely reversed on decommissioning of the wind farm; these were considered to be adverse effects of minor significance. This judgement on significance of effect takes account of fact that the effects would be reversed, reducing the significance relative to permanent effects of equal magnitude.
- 6.14 A fourth asset was also the subject of detailed assessment (Ffridd Cwm y Ffynnon round barrow, Scheduled Monument MG314) but it was concluded that there would

be no adverse effect on significance. Detailed assessments of these four short-listed assets are provided in the CSEI at Section 7.7.76 to 7.7.101.

- 6.15 The conclusions on these four assets were reached after systematically considering the potential for effects on all 100 designated assets within the 5 and 10km study areas used for the assessment. Three filters were applied in sequence to identify which assets had potential to be affected and therefore merited detailed individual assessment.
- 6.16 The first filter utilised predictive zones of theoretical visibility to identify which assets might experience little or no visual change (defined as no more than three blade-tips), either at the asset or in relevant views of the asset. Any asset that is not experienced in combination with the wind farm is highly unlikely to be affected by it so does not merit further consideration. It should be noted that the ZTV model assumes bare ground so will tend to overstate the degree of visual change.
- 6.17 This filter excluded the majority of Listed Buildings from the assessment, reflecting their valley floor locations which tended to be screened from the turbines by the landform. A smaller proportion of the Scheduled Monuments was also excluded for the same reason.
- 6.18 The second filter involved consideration of the type of asset. The contribution that setting makes to the significance of an asset is closely linked to the type of asset. Some asset types, such as prehistoric houses, are appreciated in a local topographic setting and wider landscape views to or from the asset do not contribute to significance. In contrast, prehistoric ridge-top funerary monuments may be placed to exploit long-range views, both towards and from the asset, so the wider landscape setting is likely to contribute to significance.
- 6.19 Having identified asset types with potential to be affected a third and final filter was applied to individual assets within these types. This combined an understanding of how setting contributed to the significance of the asset with the likely level of visual change to decide whether there was potential for material (i.e more than a negligible magnitude) effect on significance.
- 6.20 In the case of the Scheduled Monuments, most were excluded because they were considered to be too distant from the wind farm for visibility of turbines to affect significance. The two Scheduled Monuments that were retained for assessment (a

hillfort and a Bronze Age barrow) are the assets closest to the wind farm that would be in full view of the turbines.

- 6.21 In the case of the Listed Buildings, the medieval church in Llan was the only asset retained because it was the only building that is valued as a visible landmark in the wider landscape that might experience sufficient visual change to be adversely affected. Llan Conservation Area was also retained for assessment because the same visual relationship predicted for the church was considered likely to affect the character of the village.
- 6.22 I consider that this filtering approach provides a robust and transparent assessment of setting effects that meets the requirement in NPS EN-1 to provide information regarding the extent of the impact of the proposed development on the significance of heritage assets, but no more than is sufficient.

Cumulative operational effects

- 6.23 The simultaneous operation of two or more wind farms within the setting of a historic asset has the potential to generate adverse cumulative effects on the contribution that setting makes to the significance of that asset.
- 6.24 In the present case, there is potential for cumulative effects to arise from the operation of the proposed Llanbrynmair wind farm in combination with a number of other wind farms with TAN8 SSA B and the area immediately surrounding it, including operational and consented developments and those still in the planning system.
- 6.25 This can only occur if a historic asset is predicted to be adversely affected by the operation of Llanbrynmair alone, that is to say the assessment is not concerned with the potential for cumulative effects resulting from the operation of two or more windfarms other than Llanbrynmair. It follows that only the three historic assets with predicted operational effects for Llanbrynmair alone (noted above and listed in the CSEI, Table 7.12) could possibly experience cumulative effects.
- 6.26 These three assets were assessed in Section 7.10 of the CSEI against two cumulative scenarios: Scenario A comprising Llanbrynmair with five operational or consented wind farms and Scenario B comprising those in A plus six application or pre-application stage schemes.

- 6.27 The assessments in the CSEI found cumulative adverse effects would occur in combination with two of the Scenario B wind farms: Carnedd Wen in the case of the two assets in Llan and both Carnedd Wen and Mynydd Waun Fawr in the case of the hillfort on Moel Ddolwen. This finding reflects the location of the assets. Carnedd Wen is the only other proposed wind farm that would be visible from Llan. Carnedd Wen and Mynydd Waun Fawr are the only proposed wind farms close enough to Moel Ddolwen to affect its setting.
- 6.28 In all cases, the cumulative effect was assessed at the same level of magnitude as Llanbrynmair alone. This reflects the slight magnitude of effect in all cases and the small additional incremental effects due to the other proposed wind farms.
- 6.29 Since this assessment was completed in July 2013, the application for Mynydd Waun Fawr (one of the Scenario B schemes) has been withdrawn. As a result, the predicted contribution of this wind farm to the cumulative effects on the hillfort at Moel Ddolwen is no longer relevant.
- 6.30 In the absence of Mynydd Waun Fawr, Scenario B would no longer lead to a cumulative adverse effect on the hillfort. This is because Carnedd Wen would largely be seen as part of Llanbrynmair and not increase the number of in-combination views over and above those already identified for Llanbrynmair alone (see CSEI 7.10.21)

7. Summary and Conclusions

- 7.1 The CSEI provides a complete and up to date assessment of the predicted effects of the Llanbrynmair Wind Farm on the cultural heritage resource. The scope and approach adopted to the assessment meets fully the requirements of current policy and follows relevant guidance.
- 7.2 This assessment has identified that the proposed development would result in adverse effects on historic assets during the construction phase and operational period. None of the resulting residual effects would be EIA significant. Careful management of the decommissioning phase would ensure that no further adverse impacts occur on assets already damaged by construction works.
- 7.3 Construction works within the wind farm site would damage three undesignated assets: an area of peat cutting, an area of clearance cairns and a single cairn. These

are considered to be adverse effects of no more than Minor Significance. No adverse effects on recorded assets have been identified due to proposed off-site highway works.

- 7.4 Construction works could also damage currently unrecorded sub-surface archaeological features; this is considered to be an adverse effect of no more than Moderate Significance. All adverse effects due to construction works would be fully mitigated by an appropriate programme of archaeological excavation and recording.
- 7.5 Operation of the wind farm would affect the heritage significance of three historic assets through visual change in their settings. There would be adverse effects of Minor Significance on a hillfort at Moel Ddolwen (Scheduled Monument), the Church of St Mary, Llan (Listed Building Grade II*) and Llan Conservation Area. Operation of the wind farm in combination with the proposed wind farm at Carnedd Wen would lead to cumulative adverse effects on the significance of the Church of St Mary, Llan and Llan Conservation Area. In both cases the magnitude and significance of effect would not be substantively greater than the effect due to Llanbrynmair alone.
- 7.6 Any effects on the significance of historic assets due to change in their setting would occur for the duration of the operational life of the wind farm and then be fully reversed on decommissioning. Mitigation has been achieved, where possible, through design of the windfarm and minimises the level of harm to the historic assets.