THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Cefn Croes Wind Farm, Ceredigion

ARCHAEOLOGICAL SURVEY AND WATCHING BRIEF

CPAT Report No 684

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February 2005

Report for Cambrian Wind Energy Ltd

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CPAT Report Record

Report and status

CPAT Report Title	Cefn Croes Wind Farm, Ceredigion: Archaeological Survey and Watching Brief		
CPAT Project Name	Cefn Croes Wind Farm		
CPAT Project No	1162	CPAT Report No	684
Confidential (yes/no)	No	draft/final	Final

Internal control

	name	signature	date
prepared by	R. Hankinson		10/2/05
checked by	R.J. Silvester	R.J.S.	10/02/2005
approved by	R.J. Silvester	R.J.S.	10/02/2005

Revisions

no	date	made by	checked by	approved by

Internal memo

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CONTENTS

1 INTRODUCTION

1.1 In 1999, the Field Services Section of the Clwyd-Powys Archaeological Trust (CPAT) carried out an archaeological evaluation of the site of a proposed wind farm at Cefn Croes, near Cwmystwyth, in northern Ceredigion (Hankinson 2000). The area had already been subjected to detailed archaeological survey by CPAT and Cambria Archaeology between 1996 and 1998. The results of the evaluation were subsequently incorporated in an environmental statement on the potential effect of the proposal on the area. The archaeological resource of the proposed electricity transmission line connecting the wind farm and the national grid was assessed separately by Cambrian Archaeological Projects Ltd, and the results were incorporated in a further environmental statement, dated March 2001.

1.2 In early January 2004, following the granting of planning permission for construction of the wind farm by Ceredigion County Council, CPAT was asked to provide a specification and quotation for undertaking further survey and watching brief work at the site, by West Coast Energy Ltd of Mold, North Wales. The work formed one element of the conditions attached to the planning permission for the wind farm.

1.3 The CPAT quotation was accepted in mid-January and a statement of the scheme of works required to discharge the archaeological element of the planning conditions was then prepared in conjunction with West Coast Energy Ltd (see Appendix 1). The statement formed the basis for discussions with Ms L Bourne, of Cambria Archaeology, who was then acting as the archaeological curator on behalf of the council. The proposals were accepted by Ms Bourne in the second half of January.

1.4 The first site visit was carried out on the 23rd January, with work continuing at the site during the groundworks, the main part of which were completed by August 2004, although some smaller groundworks were also monitored later in 2004. The erection of poles to carry the grid connection line for the wind farm was also monitored, beginning in June 2004. Following the completion of the wind farm construction works, the excavated areas were reinstated and a final visit was made in early 2005 to ensure that the mitigation measures employed during the construction of the wind farm had been successfully implemented, to minimise its impact on the archaeological resource of the Cefn Croes area.

1.5 The report that follows breaks down the archaeological work into its constituent parts in order to facilitate understanding:

i) the archaeological survey undertaken within afforested areas which were too densely planted to permit access prior to felling (Section 3)

ii) the protection of known archaeological sites from disturbance, wherever possible (Section 4)

iii) the watching brief carried out during groundworks related to wind-farm construction (Section 5)

iv) the monitoring carried out during the erection of poles for the grid connection (Section 6)

It should be stressed, however, that in practice the divisions were not as clear cut as this, as Appendix 3 makes clear. In addition, advice was regularly given to the contractors and to the site agents regarding the possible effects of the construction work on specific archaeological sites.

2 LOCATION, TOPOGRAPHY AND GEOLOGY

2.1 The wind farm occupies a part of north Ceredigion close to its border with Powys. The area consists of an upland plateau dissected by stream valleys, and is located 3km to the south of the upper Wye valley. Natural drainage is provided by tributary streams flowing south and west to Nant Rhuddnant and east to Afon Diliw. The elevation of the area varies from approximately 400m OD up to a maximum of almost 580m OD on Cefn Croes itself; the summit of Pen y Garn to the south of the wind farm is at 610m OD.

2.2 Much of the wind-farm area can be classed as moorland, having a vegetation cover of rough, boggy, grassland, with relatively small amounts of heather. Within this moorland, portions of ground have been subjected to improvement and are now colonised by better quality grassland infested with rushes. The remaining turbines fall within areas which were previously in use as coniferous forestry plantations.

2.3 The geology of the area consists of shales, mudstones and grits belonging to the Upper Llandovery Series of Silurian Age (Pringle and George 1948, 38), which have been locally worked for mineral (mainly lead and zinc) deposits. The soils of the plateau are upland soils consisting of peats and associated stagnopodzols, which have historically proved important in the summer grazing of livestock (Sambrook & Silvester, 1997).

3 ARCHAEOLOGICAL SURVEY

3.1 Most of the line of the access track for the wind farm had already been examined during past archaeological survey work in the locality (Sambrook and Silvester, 1997; Sambrook, Hankinson and Thomas, 1997). One part of the route still remained to be examined in detail when track construction commenced, namely the afforested area in the vicinity of Ffrwd Ergyr (SN 803822; see Fig 1), which was too densely planted to permit access during earlier surveys. At the time of the first site visit (23 January), the trees along the route had been felled, but remained lying on the route. The poor visibility of the corridor and difficulties of access due to the presence of these felled trees led to the survey being re-scheduled. The work was carried out on 18 February, when the trees had been cleared from the corridor, prior to the commencement of access track construction work on this section. The access route corridor was thoroughly searched but no additional archaeological sites were encountered.

3.2 The previous archaeological assessment of the wind-farm site had highlighted the lack of archaeological background information for the locations of the turbine groups situated within the afforested areas of Bryn Diliw, Bryn Rhudd, Banc Nant-rhys and Grafiau'r Llwynog. These sections of forestry had not been examined previously due to the density of the tree cover and their archaeological potential was therefore unknown. Following the removal of trees from these areas, the opportunity was taken to examine them while the test-pit excavations to determine the geological conditions of the turbine bases were being carried out on 15 & 16 April. The test-pit examinations formed part of the watching brief element of the scheme (see Section 5, below).

3.3 A total of three turbine groups, comprising fifteen turbines in all (Turbines 25-39; see Fig 1), were located within the recently deforested land. The lines of these turbine groups were walked and examined, but no surface evidence of any archaeological features was revealed. Two possibilities might be suggested for the lack of archaeological sites: firstly ploughing and planting of the forestry had removed all traces of any archaeological features which may have been present or, alternatively, that the ground conditions and topography were unsuitable and no sites were ever established in these localities. However, the pits indicated that, at many of these turbine locations, peat accumulated to depths of between 1.0m and 1.6m: in these circumstances it is not surprising that surface indications of archaeological features were absent, any prehistoric activity probably being completely submerged by peat.

4 PROTECTION OF KNOWN ARCHAEOLOGICAL SITES (Wind farm site; see Fig 1)

4.1 In the following sections the term *PRN* is used to signify the Primary Record Number of the site in question within the Sites and Monuments Record held by Cambria Archaeology, the Regional Archaeological Trust. Brief details of the sites referred to in the text can be consulted in Appendix 2. Other sites exist in the locality and will have been considered when the site infrastructure was planned, but, if there has been no effect from wind-farm construction, these have not been mentioned.

4.2 The group of sites which together form the mine complex known as the Old Esgairlle mine (PRN 25868) constituted the most significant element of the archaeological resource on the line of the main wind-farm access route. The main part of this mine is situated at NGR SN 795829, on the opposite site of the upper Castell valley to the wind farm entrance. To protect surviving features of this complex it was proposed in the Environmental Statement that the route of the track through the site should be tightly controlled.

4.3 As originally anticipated, this section of the access route followed the course of an existing forestry road, with only minor upgrading to allow access for large delivery vehicles. The control of works through the mine site was accomplished by setting up lines of highly visible bunting alongside the existing track (on 23 January, Plate 1), in order to prevent encroachment of the track into those areas which retained visible traces of mining features. The importance of adhering to these restrictions was discussed on site with representatives of the developer. This portion of the work was accomplished successfully and the recorded elements of the mine do not appear to have been adversely affected by track construction work.

4.4 It is noted above in para 3.1, that no other archaeological sites were encountered during the survey of the remaining section of the access route where it passed through afforested land. At the end of this section (NGR: SN 804814), however, the route emerged into pasture land, and then followed the line of an existing trackway. Between this point and the substation (SN 807808) a total of six sites had been recorded by past survey work, comprising four 19th-century boundary stones (PRNs 33226-8 and 33235), a possible fold (PRN 33236) and a series of mine trials (PRN 33237) (Sambrook & Silvester, 1997).

4.5 At the start of work on the pasture land section of the access road (19 April), a preliminary examination of the line with the site representative of Jones Bros (Ruthin), the groundworks contractor for the main wind farm site, was undertaken in order to define the location of the sites recorded by Sambrook and Silvester in 1997 and ensure their preservation. Between the time when the wind-farm assessment (Hankinson 2000) was produced and the commencement of construction work, an area of pasture land to the north-east of the existing trackway, mentioned in para 4.3, had been enclosed for use as forestry and the boundary of this new enclosure ran alongside the trackway. Surprisingly, it emerged that only two of the four boundary stones (PRNs 33227 and 33228) remained in place, and it seems possible that the two missing boundary stones (PRNs 33226 and 33235), which lay along the line of the boundary, had been removed and/or lost when the boundary fence was erected. Of the sites which survived alongside this section of the access route; PRN 33227 was marked to signify its presence; PRN 33228 was located on the north side of the new boundary fence and, although its presence was highlighted to the contractors, did not require specific preservation measures; PRN 33236 was also protected by the new fence (although note that its position was marked later due to work on the grid connection); and PRN 33237 was subsequently removed with the permission of the archaeological curator (see para 5.4).

4.6 Further consultations were undertaken with the site representatives of Jones Bros (Ruthin) regarding protection measures for two further sites, namely PRNs 33263 and 33266, both of which represent settlement, possibly of a seasonal nature. Each site was identified and described by the writer, to highlight its importance to the archaeological resource of the locality and to enable the contractor to implement internal procedures to protect the site. A consideration of the methods being employed for machining led to the implementation of a scheme whereby the crest of the intervening ridge (in both cases) was left intact, thereby acting as a protective barrier to prevent damage from material which might otherwise have fallen down the slope during site-road and turbine-base machining operations. The edges

of these areas were marked by steel pins and barrier tape to highlight their presence, particularly as no archaeological supervision was envisaged during re-instatement work.

4.7 The final visit to the wind farm site was undertaken on 24 January 2005. At this time the archaeological sites in close proximity to the wind farm infrastructure, including its access road, were examined to ascertain whether the mitigation measures had been successful. With the exception of relatively minor damage which had occurred to PRN 33236 (see para 6.5, below), the sites remained intact and had not been subject to any disturbance.

5 WATCHING BRIEF (Wind farm site)

5.1 The watching brief comprised a series of site visits during the construction phase of works to the main wind-farm site, its main access road, and the line of the grid connection. Contact was maintained with the construction contractors and other consultants during the course of the project to ascertain the most useful time for visits to take place. This has not been detailed in Appendix 2, as it was generally accomplished by phone. Many of the visits carried out during the early phases of access construction were combined with other archaeological input, as described in the two preceding sections. The various visits undertaken are presented in tabulated form in Appendix 2.

5.2 The initial test pits, designed to ascertain the geological nature of each turbine location, were examined on 15 & 16 April, either during or soon after their excavation. Each test pit generally consisted of a single box-section through the deposits, with the maximum depth of excavation being in the order of 3.5m. No buried archaeological features were revealed in any of the excavations. The spoil from the excavations was also examined for artefactual evidence but, again, nothing of archaeological significance was seen.

5.3 One factor of interest which emerged from the excavation of the test pits concerned the depth of peat deposits which were encountered over the site area. At their deepest on Bryn Rhudd and Banc Nant-rhys, the deposits were up to 1.6m thick, and sealed boulder clay. These areas had formerly been afforested but the situation in the adjoining pasture land was somewhat different, with the peat at turbine sites having a general thickness of 0.3m, up to a maximum of 0.6m on Cripiau Nantmelyn (Turbine 17). In part this reflected a preference for the siting of turbines on drier ground, as peat deposits of up to 1.3m in depth were subsequently encountered where the line of the site road between turbines 8 and 9 crossed pasture land on Banc Twlc. All of the peat deposits which were encountered have been subject to some disturbance and truncation, whether by land improvement and drainage in the fields, or by forestry planting and drainage elsewhere. Significant areas of peat and other deposits still remain undisturbed in the locality, of which the largely silted up Llyn Rhuddnant and the peat deposits on the nearby watershed between Nant Rhuddnant and the headwaters of the Afon Diliw, a tributary of the Ystwyth, provide the best examples.

5.4 The only archaeological site which suffered some inevitable damage due to the construction of the main access track was the group of scoop-shaped features (PRN 33237; Plate 2), believed to represent trial mine-workings. A watching brief was carried out on 20 April, during the removal of five of these features, with the agreement of the archaeological curator. The removal was undertaken by machining under close archaeological supervision, prior to the start of track construction. No mineral veins were evident in the base of the features, which had been cut into shale deposits, but it was evident from their shape and arrangement that the original interpretation as exploratory trial mine-workings was correct. The maximum size of the individual features, including the resultant spoil, was 13m by 8m, with depths up to 1.4m below the adjacent ground level being attained. During this work it became clear that PRN 33236, which had originally been interpreted as a possible structure or fold, represented a further trial working of this type. Minor damage subsequently occurred to this feature during the erection of grid connection pole No 118 (see Section 6, below).

5.5 Work on the topsoiling and machining of turbine bases and their connecting site roads commenced at the beginning of May. Regular visits were implemented (from 5 May) to examine the topsoiled areas, although much of the initial topsoil removal was carried out

by bulldozer which provided far from ideal conditions for the recognition of archaeological features. The spoil produced by machining was also examined for artefactual evidence.

5.6 A large proportion (over 50%) of the total length of the site roads used by the scheme were constructed along the lines of existing forestry roads and farm tracks, where work was restricted to the re-grading and widening of the existing route (see Fig 1). These sections did not yield any useful data, perhaps due in part to the degree of previous disturbance which had occurred.

5.7 Where possible, new access road lines were examined while machining was progressing. The peat deposits on the line of the road which crosses Banc Twlc in the vicinity of Turbine 9 have already been mentioned, and were found to consist of a turf layer, overlying up to 1.0m of brown fibrous peat, itself sealing a 0.1m thick layer of black peat with a slightly bituminous texture. This area had been subject to some pasture improvement and no finds or features were encountered in the locality.

5.8 The watching brief included the period where the machining of the access road and turbine bases for turbines 19-21 were being carried out. In addition to the examination of the topsoiled area and resultant spoil, the machining work was checked while in progress. This was to ensure that the archaeological site (PRN 33263; Plate 4) which lay within 100m of turbine 20, to its south-west, was protected from damage in line with the agreement noted in paragraph 4.5.

5.9 Machining work relating to the base of turbine 12, and for the cable link between there and turbine 7, occurred in the vicinity of a further archaeological site which had been recorded in 1997 (PRN 33266; Plate 3). As mentioned in para 4.5, this site had been notified to the construction contractors, and the recognition of the importance of the site resulted in discussions regarding the most suitable route for the link. Subsequent consultation with the archaeological curator led to the line of the link being moved into the adjoining forestry, approximately 40m distant, to minimise any potential for disturbance to the immediate environs of this settlement site during machining of the trackway used by installation vehicles. The trackway between turbines 7 and 12 was re-instated following installation of the cable link. The settlement site remained undisturbed following completion of this work.

5.10 The paragraphs above mention the more significant areas which were examined during the watching brief, and are not intended to be a detailed resume of the archaeological work which was carried out. This is better understood by reference to Appendix 2. As far as can be ascertained, no new archaeological sites or features were exposed by the groundworks. No artefacts were recovered from the groundworks spoil, despite a comprehensive examination.

6 CEFN CROES GRID CONNECTION (See Fig 2)

6.1 Work on erecting the wooden poles, which support the electricity transmission line of the Cefn Croes grid connection, commenced in June 2004. The archaeological sites present along the route had been identified during an assessment of the corridor undertaken by Cambrian Archaeological Projects Ltd on behalf of Renewable Development Company Ltd. The assessment formed part of the Environmental Statement for the grid connection, dated March 2001.

6.2 Close consultation was maintained with the site representative of ESBI Ltd, the contractors responsible for pole erection and wiring, in an attempt to ensure that the identified archaeological sites were avoided by the works. One of the main areas of concern related to mine workings, particularly those of the Craignant Bach lead mine on Mynydd Pont-erwyd (poles 17 and 18), the Nant Nod mine (poles 82 and 83) and the Esgairlle mine (poles 95 and 96). Slight variations in the siting of pole nos 17 and 95 (Plate 7) were suggested by the writer and accepted by the contractor, which allowed the adjoining archaeological features to be safely avoided; poles 82 and 83 proved to be sufficiently distant from the Nant Nod workings to preclude any disturbance. Pole 17, on the other hand, was situated in close proximity to an open mine shaft with evidence of near-surface

underground stoping (mineral extraction), although these workings remained undisturbed by the excavations.

6.3 Unfortunately, the Craignant Bach mine area proved to be the only possible route of access for construction traffic used in the erection of poles 17 to 22. The importance of the mine workings was highlighted to the site representative of ESBI Ltd, during a visit to the workings. While the site traffic largely avoided direct interference with the mine workings and spoil tips, the trackways which were created by the passage of vehicles have not been re-instated (Plate 8). This has left the mine area looking particularly untidy and appearing as if it has been subject to a far greater impact than has actually been the case.

6.4 During the works on Mynydd Pont-erwyd, a mine leat or artificial watercourse (Site 1 in Appendix 2; Plate 6), which seems to have served the Llywernog Mine, was recognised. This had not been identified in the corridor assessment (see para 6.1), and one pole (no 22) was due to be sited on the course of the leat. Discussions with the contractor led to the slight repositioning of the pole, which was re-sited 4m upslope from the leat. The discovery of the leat at this late stage, when nearby poles had already been erected, did not allow pole 22 to be sufficiently re-sited to ensure that avoidance measures were effective. As a result, in the process of gaining access to the pole location with a machine excavator and the backfilling of the hole on this steep slope, some disturbance occurred to the line of the leat, approximately 40m of which has been affected to some degree (Plate 8). The leat proved to be a simple gully, c.1.5m wide overall, which contoured this north-east facing hillslope; it remains in a well-preserved condition in the field to the south of the area of forestry in which pole 22 is located.

6.5 At its south-east end, the line of the grid connection followed the approximate line of the main wind-farm access track. The position of the archaeological sites here were shown to the ESBI site representative prior to the erection of poles, but only one of the poles (no 118) was in close proximity to a known archaeological site, namely PRN 33236, which had originally been recorded as a possible structure or fold, but was subsequently re-assessed as a trial mine excavation (see para 5.4, above). Wooden posts were placed to signify the extent of the site prior to the start of pole erection. Unfortunately, perhaps in part due to a change in ESBI management personnel, the significance of the posts was not appreciated when pole erection was started and a machine travelled over the site. Some surface damage to the site occurred (see Plate 5) as a result of this encroachment into the site area, which took place when no CPAT personnel were present.

6.6 The remaining archaeological sites which had been identified in the grid connection Environmental Statement were successfully avoided. These included the fold which forms part of the Blaen Peithnant farm complex (PRN 28218; at pole 64), the Blaen Peithnant sheepfold (PRN 36150; on opposite side of stream to pole 69), the Carn Llwyd level (PRN 25862; near pole 51), the Blaen Ergyr mine level (PRN 35277; near pole 101) and the surviving boundary stones on the main wind-farm site (PRNs 33227 and 33228; no poles in the vicinity of either site). As has been mentioned above (para 4.4), the two additional boundary stones (PRNs 33226 and 33235) recorded by Sambrook and Silvester in 1997 had been lost prior to the commencement of the development. The Carn Llwyd level was examined in passing and found to have been recently gated to prevent access. The level was found to be extremely short, less than 2m in length, with the spoil tip being composed of material from the cutting which leads to it, rather than any significant underground workings.

6.7 Contractual discussions between ESBI Ltd and the wind-farm operators, on completion of the grid connection, led to the excavation of test pits to examine the soil/rock profiles along its course. Phone discussions were held with the contractor carrying out this work, owing to the sensitive nature of some pole locations, and it was agreed that no test pits would be excavated in the vicinity of any of the archaeological sites along the grid connection route. As a result of this, no visits were required during the excavation of these test pits. A subsequent brief examination of selected localities during the final visit to the site on 24 January confirmed that this had been adhered to by the contractor.

7 CONCLUSIONS

7.1 The archaeological input during the construction phase of the wind farm consisted of survey, site protection and watching brief work. The watching brief encompassed the examination of topsoiled areas, with the resultant spoil also being examined for artefactual evidence. No previously unknown archaeological sites were revealed by the survey and watching brief elements of the work on the main site, and no artefacts were recovered. A single unrecorded leat was discovered by the watching brief during erection of an electricity transmission line pole for the grid connection.

7.2 One site, the series of exploratory trial mine workings (PRN 33237), was removed during construction of the wind-farm access road. The individual workings were photographed and described prior to their excavation by machine under close archaeological supervision, with the agreement of the archaeological curator. The results of this work confirmed the nature of the site. The main mine site in the locality, that of the Old Esgairlle Mine, was traversed by the access road. The access route followed that of an existing forestry road, but was tightly controlled as it passed through the mine area to ensure that no disturbance resulted. This was successfully accomplished.

7.3 Two boundary stones, which had been previously recorded alongside the access road, were found to have been lost prior to the commencement of construction work. This may have been as a result of the erection of a fence to delineate a newly afforested area which borders the trackway whose line was followed by the access route. Two additional boundary stones in this area remain unaffected by construction work. A further site (PRN 33236) was avoided by track construction, only to be subject to minor damage during the erection of an electricity transmission line pole for the grid connection. The site was originally though to represent an enclosure, but was re-assessed during the PRN 33237 watching brief, which covered the adjoining area. This examination suggested strongly that PRN 33236 was a further exploratory trial mine working.

7.4 Work in relation to the erection of poles for the grid connection on Mynydd Pont-erwyd has left the Craignant Bach mine area looking particularly untidy, although the direct effect on the surviving elements of the mine has been minimal. Approximately 40m of a leat, which was not recorded in the archaeological assessment of the grid connection, has been affected by the erection of one of the poles in this area. Unfortunately, the discovery of the leat came too late to allow the re-siting of the pole. With the exception of this area and PRN 33236, mentioned above, the remaining sites alongside the grid connection were successfully avoided.

7.5 The results of the archaeological assessment of the main wind farm site were utilised in the planning stage to minimise the potential threat to archaeological sites from construction of the wind farm infrastructure. Accordingly, only two sites (PRNs 33263 and 33266, both former settlements) were in the vicinity of turbines or site roads. Protection measures were instituted for both these sites and they remain undisturbed following the completion of wind-farm construction and re-instatement.

8 ACKNOWLEDGEMENTS

8.1 The writer would like to thank the following people for their assistance during the project: Mr J Hennie of West Coast Energy, for his help and advice; Mr I Grant of CPAT, for his assistance with the survey of the main access route; Ms K Taylor of Scott Wilson, for assistance with the marking out of archaeological sites and survey of the main access route; Mr Hefin Lloyd-Davies, and the site representatives of Jones Bros (Ruthin), the groundworks contractor, for their help in facilitating the watching brief and site avoidance on the main Cefn Croes site; and Mr J Killen and Mr C Davies, ESBI, for facilitating the work in relation to the Cefn Croes grid connection.

9 REFERENCES

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Cambrian Archaeological Projects Ltd, 2001, Environmental Statement relating to the Cefn Croes grid connection.

APPENDIX 1

Scheme of Archaeological Investigation for the Cefn Croes windfarm (November 2003)

1) General

a) All archaeological works listed herein will be conducted by an appropriately qualified field archaeologist.

b) The works contractors will be expected to pay due regard to the historic environment and its individual elements. It is anticipated that works that impact on these elements may be reasonably delayed while archaeological mitigation occurs.

2) Survey (in advance of construction)

Areas under forestry plantations, earmarked for construction works will be subject to archaeological survey following removal of the tree cover, assuming that ground conditions, including the removal of any brash, are satisfactory. The survey will be followed by the proposal of suitable mitigation measures for any archaeological sites which might be so revealed. Areas which will be cleared of trees are considered to be sufficiently extensive to permit line revisions should these prove necessary.

3) Site protection (in advance of construction)

The following sites will be fenced off, using unique and readily visible fencing. This will be done under archaeological supervision and before any construction work commences on site, in order to protect them from accidental damage or destruction:

PRN 25868 - mine site. (integrating PRNs 36792, 36793, 36794, 36797, 36798, 36799, 36801,36802, 36803)
PRN 33226 - boundary stone
PRN 33227 - boundary stone
PRN 33228 - boundary stone
PRN 33235 - boundary stone
PRN 33236 - possible fold
PRN 33237 - mine trials
PRN 33263 - possible long hut. *Fencing will also be put in place above the site to prevent accidental slippage.*
PRN 33266 - long hut
PRN 35277 - mine site

4) Retention of tree cover

PRN 33233 - boundary stone. Retention of tree cover

5) Specific watching briefs (during construction)

These will be held on the following sites:

PRN 25868 - mine site. (integrating *PRNs 36792, 36793, 36794, 36797, 36798, 36799, 36801,36802, 36803*). During access route construction
PRN 33263 - possible long hut. During construction works.

6) *General watching brief (during construction)*

A watching brief will be maintained during the ground works on the turbine sites, the access roads and the infrastructure. Each individual turbine site will fall within the watching brief, while access roads and trench lines will be examined as appropriate and as circumstances permit. The watching brief will also extend to other groundworks, including quarries or borrow pits, test pits, and site compounds.

In the event of a find or feature of importance being discovered, that find or feature will be evaluated after consultations with the nominee of the Council (see para 7 below). Where a find or feature is perceived to be of potential national importance, it will be evaluated and, where practicable, will be preserved *in situ*.

7) *Monitoring and Access*

Safe access will be granted, at any reasonable time, to any person nominated by the Council in order to assess the nature and importance of any find.

Appendix 2

Archaeological sites mentioned in the text

PRN	Name	Site type	Period	NGR
9169	Craignant Bach mine	Lead/zinc mine	Post-medieval	SN 740815
9176	Nant Nod mine	Lead/zinc mine	Post-medieval	SN 791839
25862	Carn Llwyd level	Mine level	Post-medieval	SN 762833
25868	Old Esgairlle mine	Lead/zinc mine	Post-medieval	SN 795829
28218	Blaen Peithnant	Farm	Post-medieval	SN 770842
33226	Llynoedd Ieuan	Boundary stone	19th century	SN 804814
33227	Llynoedd Ieuan	Boundary stone	19th century	SN 804812
33228	Llynoedd Ieuan	Boundary stone	19th century	SN 805811
33233	Nant Diliw Fechan	House	Post-medieval	SN 841774
33235	Cefn Croes	Boundary stone	19th century	SN 807811
33236	Cefn Croes	Mine trials	Post-medieval	SN 807811
33237	Cefn Croes	Mine trial	Post-medieval	SN 807810
33263	Cripiau Fagwyr Fach	Long hut ?	Medieval ?	SN 812792
33266	Llyn Rhuddnant	Long hut	Medieval	SN 802782
35277	Blaen Ergyr mine level	Mine level	Post-medieval	SN 799825
36150	Blaen Peithnant	Sheepfold	Post-medieval	SN 776841
Site 1	Mynydd Pont-erwyd	Leat	Post-medieval	SN 743815

Appendix 3

Visits undertaken to the Cefn Croes Wind Farm during construction and re-instatement

Visit date	Work undertaken	Site locality
23/01/04	Marking of archaeological sites; monitoring of forestry felling along access route	Main site access road
18/02/04	Line of access road through forestry surveyed for archaeological sites	Main site access road
15/04/04	Monitoring of test pit excavations; survey of former forestry areas for archaeological sites	Main site
16/04/04	Monitoring of test pit excavations; survey of former forestry areas for archaeological sites	Main site
19/04/04	Main site access road advice & monitoring	Main site access road
20/04/04	Watching brief and recording during removal of trial mine workings on access road	Main site access road
05/05/04	Site road/turbine base groundwork advice & monitoring	Turbines 1-7; On-site compound near Banc Fawr
07/05/04	Site road/turbine base groundwork advice & monitoring	Turbines 17-18, 22-24
10/05/04	Site road/turbine base groundwork monitoring	Turbines 9-11, 17-18
13/05/04	Site road/turbine base groundwork advice & monitoring	Turbines 17-21
18/05/04	Site road/turbine base groundwork advice & monitoring	Turbines 8, 19-21
27/05/04	Site road/turbine base groundwork advice & monitoring	Turbines 29-30; Road to turbine string 12-16
16/06/04	Meeting with curator; Site road/turbine base groundwork advice & monitoring; grid connection advice & monitoring	Turbines 12-16, 28-29; Grid poles 77-78
23/06/04	Grid connection advice & monitoring	Grid poles 17-18, 64
29/06/04	Site road/turbine base groundwork monitoring; grid connection advice & monitoring	Turbines 28-29, 31-37; Grid poles 50-53, advice re positioning of pole 95
02/07/04	Grid connection monitoring	Grid pole 95
12/07/04	Site road/turbine base groundwork monitoring; grid connection monitoring	Monitoring mast near turbine 5, turbines 12-16, 31, 36 & 37; Grid poles 82-83, 114-121
17/08/04	Site road groundwork monitoring; discussion regarding road between turbines 11 & 12	Turbines 26 & 27
04/10/04	Site road groundwork monitoring; advice & monitoring relating to grid connection	Road between turbines 11 & 12; Grid poles 17, 64, 82-83, 118
11/10/04	Advice & monitoring relating to grid connection	Grid poles 18-21 & 118
00/01/05	Examination of re-instatement works	Main site and grid connection

Plate 1 Old Esgairlle Mine workings marked off by bunting. Photo CPAT CS04-04-27

Plate 2 Machining of trial workings (PRN 33237) under close archaeological supervision. Photo CPAT CS04-22-27

Plate 3 Groundworks on cable route between Turbines 11 and 12, passing PRN 33266. Photo CPAT CS04-56-20

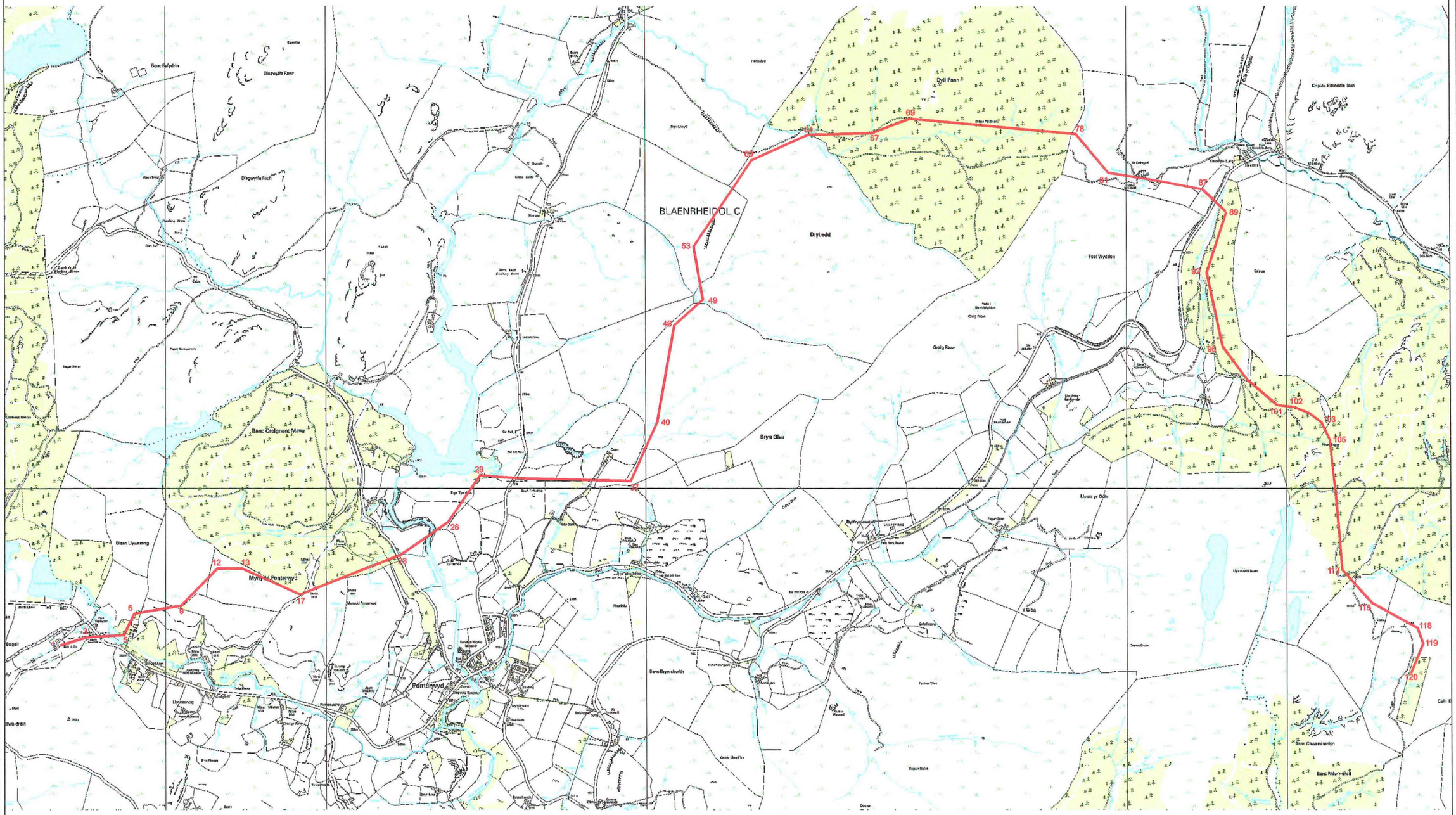
Plate 4 PRN 33263 following completion of re-instatement works. Photo CPAT CS05-06-26

Plate 5 Surface damage to trial working PRN 33236 at grid connection pole 118.
Photo CPAT CS04-56-23

Plate 6 Damage to unrecorded leat (Site 1) caused during erection of grid connection pole 22.
Photo CPAT CS05-06-34

Plate 7 Mine level at Old Esgairlle Mine preserved by re-siting of grid connection pole 95. Photo CPAT CS04-56-20

Plate 8 Vehicle route passing mine shaft at Craignant Bach Mine, near grid connection pole 18. Photo CPAT CS05-06-26



Cefn Croes
WINDFARM

Renewable Development Company Ltd

Key

Grid Connection Route (approx length 14.1km)

0km 0.5km 1km

Scale 1:23,250

Grid Connection Route

(Figure 2)

Produced	West Coast Energy Ltd
Date	02/02/05
Drawing Number	980/Gridconn/A

Cefn Croes Wind Farm

Renewable Development Company Ltd

Key

- Application boundary
- Existing roads to be upgraded
- New Road
- Turbine: 64.7m Hub
- Turbine: 57m Hub
- Substation
- Cable Route Independent of Track
- Permanent Meteorological Mast

0km 0.5km 1km

Scale 1:23,250

Cefn Croes Wind Farm Site Layout

(Figure 1)

Produced	West Coast Energy Ltd
Date	28/09/04
Drawing Number	0917SP/0302/1