

Mynydd y Gwynt
PO Box 91
Aberystwyth
Ceredigion
SY23 9AY

Ein cyf/Our ref:
Eich cyf/Your ref:

8 July 2013

Dear Sir

Proposed development of a wind farm consisting of 27 turbines of up to 125m tip height and associated development

Land at Sweet Lamb Rally Complex, Y Foel, Powys

Thank you for your letter of 7 May 2013 consulting Natural Resources Wales on the Section 42 consultation for the proposed Mynydd y Gwynt windfarm. This letter represents Natural Resources Wales's response to the consultation.

Natural Resources Wales brings together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government. Our purpose is to ensure that the natural resources of Wales are sustainably maintained, used and enhanced, now and in the future.

The preliminary environmental information submitted is a Non-Technical Summary and a draft version of the Environmental Statement (ES).

The proposed windfarm consists of the installation and operation of 27 turbines (each with a blade tip height of 125m), construction of 8.33km of new on-site access roads and the upgrading of 7.73km of on-site access roads. The scheme's other components include the construction of an on-site substation, hard standing areas, underground connecting cabling and a permanent wind monitoring mast. Temporary development includes a construction compound and a concrete batching plant.

Our commentary, review and assessment of the ES is provided in Annex 1.

Natural Resources Wales was consulted on the scope of the EIA for the proposed Mynydd y Gwynt windfarm in 2005. Since this time there have been significant changes in policy and guidance with regard to windfarms and a large number of windfarm applications have been submitted within the identified TAN 8 Strategic Search Areas (SSAs) in Mid Wales. No updated scoping advice was sought in 2010 when you decided to apply for a consent for the project under the Planning Act 2008 although there has been continuing dialogue between us on some EIA topics. The time which has elapsed since we provided scoping advice on this project means that some of our advice in Annex 1 will not necessarily be consistent with that of 2005.

The proposed Mynydd y Gwynt windfarm would be located outside the SSAs identified by TAN 8. We note the objective in TAN 8 that *'outside the SSAs, the implicit objective is to maintain the landscape character i.e. no significant change in landscape character from wind turbine development'*. TAN 8 also states that *'most areas outside of SSAs should remain free of large wind power schemes'* and goes on to note that *'there is a case for avoiding a situation where wind turbines are spread across the whole of a county'*. There are three SSAs in proximity to the proposed development site, namely SSAs B, C and D. Two of these have operational windfarms and all have windfarm schemes in planning or development. Given the scale of the development in the nearby SSAs, we have serious concerns about the further development of large scale windfarms in the areas between the SSAs which will further extend the development of a windfarm landscape.

There appears to be uncertainty as to the feasibility of the route of the grid connection proposed in the ES. The Mynydd y Gwynt windfarm does not have a contracted connection with Scottish Power Energy Networks (SPEN) and the project's potential capacity has not been taken into account when planning the new proposed 132kV lines being promoted by SPEN. Further information and assessment is therefore required on the consequences of consenting this windfarm on the need for further upgrades to the Mid Wales electricity system and on the potential for cumulative impacts with other grid lines and windfarms. The proposed new grid network has been planned to service the SSAs which means that development of new windfarms away from these areas requires additional grid connections.

The windfarm is located adjacent to the River Wye Special Area of Conservation (SAC). As we have previously discussed, this will mean that the project will need to be considered under the Conservation of Habitats and Species Regulations 2010 (as amended). We have provided a number of comments in Annex 1 with regard to the potential impacts on the SAC. However we wish to highlight that a number of the matters which we previously advised needed consideration as part of the Habitats Regulations Assessment (HRA) have not been included in the draft ES. We note that guidance from the Planning Inspectorate is that we need to discuss and agree the HRA Screening Report for this application at the pre-application stage. We therefore welcome clarification on when you are intending to discuss the screening exercise for the River Wye SAC with us. It would be helpful if this would be progressed in sufficient time to allow matters to be agreed between us prior to the application being submitted. Given the current information available to us we would advise that the project is likely to have a significant effect on the European site and an appropriate assessment will be required.

Our comments in Annex 1 include a number of issues for which we consider further mitigation needs to be identified. There are also a number of matters for which further information is required before we can advise on mitigation measures. This being the case we need to be consulted on this additional information before you submit your project to the Planning Inspectorate. We therefore welcome further dialogue with you on these matters.

In conclusion, Natural Resources Wales requires further information on a number of matters but at this stage expresses concerns about the development of a large scale windfarm in a location which is contrary to Welsh policy and which has the potential to give rise to significant impacts on natural heritage which may or, in some instances, may not be capable of being mitigated.

Yours sincerely



Dr Carol Fielding
Arweinydd Tim Maldwyn / Team Leader Montgomeryshire

Annex 1: Natural Resources Wales's detailed comments on the draft Environmental Statement

Non-technical summary

1. The non-technical summary states that Welsh policy is supportive of the project. However TAN 8 limits the potential for the development of large scale windfarms outside the SSAs. This statement therefore requires clarification.

General

2. We note that the application does not include borrow pits and that the intention is to import material for the construction of roads. There are already a number of borrow pits present on the site and confirmation is required that these will not be worked.
3. In the judgement for the Mynydd y Gwair windfarm the Inspector's decision letter makes reference to 30m as being the acceptable limit for micro-siting in the Welsh context. If a 50m limit is to be requested further justification is required and the ES needs to consider the potential impacts of this level of micro-siting tolerance.
4. It would be helpful if the final ES included a list of all figures and appendices at the front of the respective volumes.

Chapter 5 Site Design

5. We welcome the positioning of the proposed site compound and concrete batching plant on an existing car park for the rally centre. We would seek reassurance that this does not mean that a new car park will be built in another location.
6. No mitigation measures have been proposed for the substation which is an open location visible from areas of high amenity value.
7. More detailed maps of the site and infrastructure would be beneficial and would have helped clarify a number of matters.
8. Details on any watercourse crossings and information as to how the channel or bank is manipulated during the construction should be included in the ES. All new or extended watercourse crossings (including culverting) should be designed and constructed to CIRIA guidelines so that they do not pose a barrier to migrating fish including brown trout and bullhead. Culverting should be kept to a minimum and alternatives (*i.e.* bridge crossings) should be considered and justification supplied as to why culverting is preferred. This will minimise the risk of using generic culverting and allow for site specific crossings

Chapter 6 Construction

9. Further information is required on the location and design of the windfarm entrance (section 6.10) as there is insufficient detail in figure 6.1. There is an existing site entrance on the A44 but figure 6.1 would seem to indicate that an additional entrance will be constructed with the removal of a number of mature trees. Justification is required as to why the existing entrance cannot be used. Information on the design of the site entrance and potential mitigation needs to be provided.
10. A map of the cable route locations and their width (*i.e.* single, double, triple circuit widths etc) should be included in the ES. The proposed cable route from turbine 15 to the substation routes down a steep hill and an alternative route along the road would appear to further minimise effects.

11. We note that prior to any commencement of development a Construction Environmental Management Plan (CEMP) will be submitted to and agreed with the appropriate Authority. The HRA screening report will need to rely on many of the mitigation measures in this plan and we advise that a draft CEMP is provided at the pre-application stage for comment and to support the HRA screening report. Natural Resources Wales will advise the appropriate Authority on the adequacy of the final CEMP. It should include all measures taken to prevent detriment to the environment and any contingency plans with particular reference to the minimisation of pollution to watercourses from silt and storage of fuels and other hazardous materials. Current waste management legislation should be adhered to.
12. New roads and tracks should be constructed in a way, and of material, that will ensure suspended soils are not washed off site and discharged into the water environment during heavy rain or storm events. Construction of tracks and turbines and how the control measures will be retained or amended over the lifetime of the development should be included in the CEMP.

Chapter 8 Landscape

13. Natural Resources Wales has some concerns about the degree to which LANDMAP has been used to inform the assessment. We advise that the assessment is revised to demonstrate that all LANDMAP aspects have been assessed to the recommended distances in the latest LANDMAP Guidance Note 3. LANDMAP is not used explicitly to help define value or sensitivity, with the method mainly focussed on English/Scottish landscape character based methods such as quality and value criteria. LANDMAP aspects are also incorrectly called landscape character types (section 8.40).
14. The ES assesses effects on the Powys landscape character areas (LCAs). These are taken to incorporate all LANDMAP aspects. A plan of LCAs and the visual and sensory areas used as surrogates in Ceredigion needs to be included in the ES. Based on the latest LANDMAP Guidance Note 3, there is a gap in consideration of the Historic landscape and Cultural landscape aspects in the south west quadrant beyond 2-3km which will also inform the character of the two visual and sensory areas.
15. The LANDMAP assessment is further complicated by the unclear presentation in the figures and the main text not including the UID of aspect areas when referring to them. This undermines the transparency of the assessment. The LANDMAP Figures 8.2 and 8.3a-e show aspect areas coloured in different colours and named in a key, rather than annotated. This is confusing as some colours are similar. It would be very helpful if the figures were amended so:
 - Each area boundary is marked by a black line
 - Each area is annotated with at least its UID where there are many areas, and with name and UID where readable
 - The values of each area are shown by colour shading
 - The ZTV is overlain in a hatch over the areas, so the extent of its intervisibility is clear.
16. In 2013 two of the guidance documents which inform windfarm landscape assessments have been updated as follows:
 - Assessing the cumulative impact onshore wind energy development, SNH, March 2012.
 - LANDMAP Guidance Note 3, May 2013.You should ensure that the assessment takes this updated guidance into account, particularly if the submission of the application continues to be delayed.
17. The provided definitions for magnitude of effects are very brief and further clarification is required on the factors used to define these.

18. The placing of users of little used public footpaths as low sensitivity receptors is questionable. In addition open access land such as on Pumlumon is not mapped or referenced to other figures in the LVIA and this would be helpful for completeness.
19. There is a lack of transparency in defining significance within the assessment. The significance of impact is defined as ranging from negligible to substantial using the terms negligible, slight, moderate and substantial with intermediate terms such as 'moderate to substantial'. There is no definition of each level of significance of effect which is an omission.
20. The LVIA states that significant effects are only those over 'moderate to substantial' and above. This means that effects such as moderate or moderate/moderate to substantial significance are not considered significant. Whilst this is often used for wind farm developments it is not consistent with most LVIA's for other developments where moderate is considered to be the normal threshold for significance.
21. The LVIA takes a neutral stance on effects, not defining whether they are beneficial or adverse. This does not conform to Guidelines for Landscape and Visual Impact Assessment 3 (GLVIA3) advice which states that a judgement should be made by the assessor on this issue and we consider that all significant effects mentioned are adverse.
22. The A3 plans do not conform with good practice. We advise that they need to be revised as follows:
 - Turbines could be marked on most plans and shown as clear dots, numbered where possible in larger plans;
 - Numbered viewpoints could be marked clearly on ZTVs and constraints drawings;
 - Features such as national trails could be marked in bright, clear colours contrasting with the background mapping;
 - An overall constraints map with all landscape and historic designations shown;
 - Reproduction should be carried out using good quality paper;
 - The individual effects ZTVs are produced on a larger sheet of paper to aid clarity and conform with good practice guidance;
 - The cumulative ZTVs for Nant y Moch, Cefn Croes and Carno I and II are produced on larger sheets of paper to aid clarity at a scale which conforms with good practice guidance.
23. Figures 8.7 and 8.8 show the extent of SSA D incorrectly and extends it nearer to the development site, it needs to be amended. We suggest that the figures also indicate the Annex D study refined area.
24. The viewpoint for the summit of Cadair Idris in the Snowdonia National Park appears to be in the wrong location. It is not on Cadair Idris but instead is located at some distance from the mountain near to the village of Pennal on the Dyfi estuary. Although nearer to the windfarm than Cadair Idris it is at a much lower elevation. This viewpoint needs to be amended.
25. Clarification is required on the Nant y Moch turbine lay-out used to compile the ZTV for this scheme (para 8.382).
26. Some of the viewpoints have been located at slightly different locations to those previously requested by Natural Resources Wales. The least helpful viewpoint in this respect is from the Wye Valley Walk/A44 [Figure 8.11m] which shows the turbines behind trees and attributes a medium/ low magnitude of effect due to this screening whereas a few hundred yards away the effect would clearly be very high. Justification is required as why our requested viewpoints have not been used.
27. The visualisations show the effect of all relevant windfarms within a 90 degree angle of view centred on Mynydd y Gwynt. There are no 360 degree cumulative wireframes which is an

omission. We request that the visualisations are revised, in particular those for Pumlumon Fawr and the Severn Way highpoint (Figures 8.11a and 8.11q).

28. The photomontages and wirelines image height on the A3 format submitted is 95mm and the viewing distance is 237.8mm. SNH (2006) guidance recommends an image height of 200mm and a viewing distance range of 300-500mm, preferably near the latter end of the scale. The visualisations are therefore well below standard and are not considered to conform with good practice. The 238mm viewing distance used is significantly less than a natural and comfortable viewing distance.
29. It would be useful for the ES to include full A3 single frame images for some of the viewpoints (at 240mm high and for viewing at 500mm).
30. The quality of the photographs is generally adequate although the light and haze in some views mean that the turbines are shown either bleached out or grey and recessive. It is accepted that this may be practically unavoidable but does not illustrate a worst case. The wirelines are helpful to illustrate effects at these points. The quality of the photo and photomontage printing is adequate but could be improved when the final LVIA is produced.
31. Buildings, structures and access tracks need to be included in visualisations from those viewpoints from which they would be visible. It is accepted that this is only an issue for some of the viewpoints either due to views being from below or at a distance.
32. There is no consideration of effects on the Upland Ceredigion SLA. This is an omission. The site's location and effects in relation to the Cambrian Mountains overall should be addressed.
33. The LVIA omits mention of Historic Landscapes, leaving this to the Cultural Heritage Chapter. Cross referencing of the conclusions of the two assessments would have been helpful.
34. The LVIA states that there will be substantial significant effects on the picnic area in the Hafren Forest to the north. Views elsewhere in the forest are stated as being limited by trees. The potential for felling as part of forest management and opening up of views is not explored. This omission needs to be addressed. We have made a similar point with regard to the cultural heritage assessment.
35. Effects on Llyn Clywedog are stated as being of moderate significance at most *i.e.* not significant. However, there is an inconsistency between the summary text in 8.239 which states this and Table 8.9 viewpoint assessment for viewpoints 18 and 19 where the effects are stated as being significant. This needs to be clarified.
36. The proposal is located in proximity to the sources of the Severn and Wye rivers. The LVIA states that users of the Wye Valley Walk and Severn Trail would each undergo a substantial significance of effect for the beginning of each of the regionally important long distance trails, including the areas around the source of each river, potentially one of the most sensitive sections of each trail. The source of the Severn, in particular, is well visited and promoted with turbines visible at a distance of 1.7km. There would also be significant cumulative effects on the Severn Trail near the source with the proposed Nant y Moch windfarm in SSA D. The Wye Valley Walk is stated as not undergoing significant cumulative effects in the assessment tables but the ES is contradictory as it is stated as undergoing such an effect in relation to Cefn Croes and Bryn Titli [8.545, 8.550].
37. The Glyndwr's Way National Trail would undergo moderate to substantial significance of effects for 0.4km in one direction and 1.2km in the other (Table 8.18). The location for these significant effects needs identifying within the ES. The ES incorrectly suggests that most of the National Trail within the study area is located within forestry, a statement which is not supported by figure 8.9. The Glyndwr's Way is stated as not undergoing significant cumulative effects in the assessment tables although it appears to undergo such an effect in the summary in relation to for 1.2km around Llyn Clywedog. The methodology for assessing the sequential cumulative

effects on the trail are unclear. The exclusion of windfarms in SSAs B and C from the sequential analysis means potential sequential cumulative effects have not been identified.

38. The cumulative effects on the Cambrian Way are not discussed in the ES which should be rectified.
39. The LVIA states that users of the A44 would undergo moderate to substantial effects for 300m (Table 8.10). We consider that this considerably understates the actual effect on the view which would be very large with three turbines at the top of a very steep slope, with other turbines behind. They would be very overbearing and dominant.
40. With regard to the methodology for the cumulative landscape and visual amenity impact assessment we have the following comments:
 - The method is stated as being carried out in accordance with SNH 2005 guidance rather than the most recent 2012 SNH guidance.
 - The methodology does not state if the additional effect of the proposal or the combined effect of it and other windfarms is being assessed. We would have concerns if only the additional effects were being assessed.
 - The definitions for magnitude of change and significance are the same as for the individual windfarm. The magnitude definitions do not make sense if additional effects are being considered.
41. Some of the information in the ES with regard to other windfarms requires revision as follows:
 - The Tir Gwynt windfarm is for 12 rather than 22 turbines
 - We are unaware of a Mynydd Gorddu extension which has been submitted for a planning application. The status of this application requires clarification.
 - The Mynydd Clogau extension has been withdrawn from planning and should not be considered in the cumulative assessment.
 - The number of turbines in the Llandinam P & L Repowering and Llanbrynmair windfarms have been amended.
 - The Waun Garno windfarm has been refused consent by Powys County Council and there has been no appeal. This windfarm therefore does not need to be included in the assessment.
 - The application for a S36 consent for the ECOCAS windfarm has been withdrawn. This windfarm does not need to be included in the cumulative assessment.
 - Powys County Council has issued a formal scoping opinion for the proposed Bryn Titli windfarm extension. Our understanding is that this scheme will be submitted to planning in 2014. There is an indicative turbine lay-out available for the scheme. Depending on your likely submission time you need to consider whether this proposal needs to be included in the cumulative assessment.
 - Depending on when you intend to submit the application you may need to consider the inclusion of any further windfarms in your cumulative assessment.
 - A cumulative assessment has been undertaken with the Hirddywel and Llandinam windfarms but not the Llaithddu windfarm. Given the relative locations of these three windfarms it is not clear why the Llaithddu windfarm has been excluded from the assessment.

42. There are no stated significant cumulative effects on the Powys LCAs including M21 Plynlimon. It appears that as this LCA incorporates Plynlimon and Plynlimon moorlands visual and sensory aspect areas its overall sensitivity is downgraded and therefore the effects are not considered significant. We disagree with this approach and consider that the effects would still be significant adverse because the most sensitive parts which have national significance would still be affected.
43. In terms of the design of the windfarm we are concerned that the wind turbines are located on a series of ridges with steep slopes, often at or very close to the break of slope. This is most evident in the view from The Wye Valley Walk and A44 where some turbines (e.g. 20, 21, 25) will dominate the skyline (Figure 8.11v). Their height of 125m will make the apparent scale of the hillside here diminish (around 140m from the top of break of slope to the valley floor). In higher views, mainly from the Pumlumon ridge, the wind turbines are clearly located in a ridge and valley landscape which they both diminish in scale and appear awkward within (Viewpoint 1, Figure 8.11a).

Conclusions

44. Natural Resources Wales advises that our above comments on the need for additional information and revision of the assessment are taken into account. We also advise that the assessment is amended to include clearer conclusions dealing with the main impacts and core issues.
45. Overall, the site use itself is relatively insensitive as a rally centre in upland grazing. However the landform is steep and ridged and turbines are not normally considered intrinsically appropriate in these types of landforms. The turbines can appear dominant and overbearing on the skyline especially 20, 21 and 26 when viewed from the upper Wye valley- including the Wye Valley walk and A44. The juxtaposition of turbine to ridge is also apparent from the Pumlumon massif.
46. The main landscape impacts are on the site, Pumlumon, Pumlumon moorlands and the upper stretches of the Wye valley, although the latter is not acknowledged as significant in the LVIA.
47. The main visual impacts are on National Trails- especially the dramatic effect on the Wye Valley Walk and secondly on the Severn Way at or near the sources of the Wye and Severn, and on users of Pumlumon including walkers along the Cambrian Way. Users of the A44 are also significantly affected, although for a short stretch. There are also effects on the upper parts of the slopes around Llyn Clywedog although this is not regarded as significant in the LVIA.
48. The main cumulative landscape effects are on Pumlumon in combination with the proposed Nant y Moch windfarm.
49. The main cumulative visual effects are on users of Pumlumon, and the Cambrian Way on this stretch of ridge, in combination with the proposed Nant y Moch windfarm, and to a lesser extent the operational Cefn Croes windfarm (although the ES does not identify this). There are also cumulative effects on the Severn Way near its source and on the Wye Valley Walk at around 5.8km in combination with Cefn Croes and Bryn Titli.
50. With regard to wind farm design, the main improvements to the scheme would be the removal of turbines 20, 21 and 25 based on the visualisations submitted. This would reduce effects on the Wye Valley Walk at one of its closest points, and on the most publicly visible part of the site, from the A44. Some alteration may be needed to ensure the remaining nearby turbines looked as part of a coherent group.
51. Pumlumon and the associated sources of the Wye and Severn will undergo significant landscape and visual effects if this project was to be consented. These are important places in Wales' landscape and culture although undervalued in terms of designations. These potential impacts need to set in the context of Welsh planning policy and the expectation in TAN 8 that 'In

the rest of Wales outside the SSAs, the implicit objective is to maintain the landscape character i.e. no significant change in landscape character from wind turbine development’.

Chapter 11 Ecology

Elenydd Mallaen Special Protection Area (SPA)

52. Section 11.290 of the draft ES states that a HRA screening report for the Elenydd Mallaen SPA has been included for comment. However this has not been included with the draft ES so we have been unable to comment on it. Natural Resources Wales needs to have seen and agreed this screening report with you prior to the project being submitted to the Planning Inspectorate.

Birds

53. Further information is required about the methodology for the bird surveys as follows:
- A map showing the location of the vantage points and their ZTVs;
 - The study areas for all surveys need to be included to demonstrate that they are in line with good practice guidance;
 - The dates on which the Brown and Shepherd surveys were completed need to be provided. The times, surveyors and weather also needs to be provided. It is not clear how territory centres (figure 11.5) have been determined from registrations
54. The results of all the various bird surveys need to be presented on a map which also shows the infrastructure locations. Without these it is difficult to relate the locations of species to infrastructure locations.
55. Good practice guidance (SNH 2010) suggests that baseline information for some species, needs to be collected beyond the development boundary. It is not clear if the relevant study areas conform with this guidance. For example, it is recommended that red kite nesting information is collated for a distance of 2km from the windfarm boundary. Justification is required for the omission of this information.
56. We welcome the mitigation measures for red kite outlined in section 11.403. We suggest these are incorporated into the HMP.
57. We suggest that the ES highlights which of the bird species are features of the Pumlumon SSSI and includes an assessment to clearly demonstrate that there will not be impacts on this nationally important site.
58. Overall with regard to the assessment of impacts on birds in the ES we require further information on the methodology and results before we can agree with the conclusions of the assessment.

Peat

59. The ES needs to include information on how the peat contours (figure 11.3) have been calculated from the peat depth data and the accuracy of these contours. Natural Resources Wales may have further comments once we have been provided with this information and we would wish to be further consulted on this prior to the ES being submitted for a DCO.
60. The ES evaluates the blanket bog and modified bog habitats on the site as being of Regional-District value. This evaluation is not consistent with the definition in appendix 11.2 which states that a sustainable area of Annex 1 habitat should be regarded as being of international value.
61. The ES needs to evaluate the connectivity between any peat, impacted from the development, and the River Wye. If it is found that the water retention of peat is indirectly linked to the

baseflow of the River Wye, then the ES should consider management systems (such as SUDS) to re channel any lost water back into the Wye.

62. A peat management plan is required as part of the ES to also include management of non-organic soils as part of the construction process. The objectives of this plan should be to demonstrate that the management of peat/soils will be undertaken to minimise the release of sediments to the River Wye SAC and minimise the oxidation of carbon from stored peat and also provide information on the re-use of peat on the site and where all peat/soils will be stored to minimise environmental effects. This plan will need to closely relate to the Habitats Regulations Assessment and the Carbon Calculator.
63. Natural Resources Wales have undertaken site visits to verify the Natural Vegetation Classification (NVC) maps presented on figure 11.2. There seems to be a general under-mapping of priority habitat such as M17, M18 and M19 and an over-mapping of non-priority U5 and M15. The mis-mapping of M17 and M18 as M15 was especially noted at the following locations:
- to the east of turbine 12,
 - between turbines 10 and 12,
 - to the north-east to T8 where M17 has been mis-mapped as M25
 - either side of the track between T23 and T24 where there is much M17 and locally M18 in the polygon of M15d/U6d
 - Track before T19 has pockets of M17c in the polygon of M25a/U5b

We therefore advise that the assessment needs to take into account and especially whether the amount of habitat adversely affected by the project has been underestimated.

64. The assessment takes little account of the potential hydrological impacts on peatland habitats. Mitigation measures are mentioned in section 11.312 with the main measures said to be avoidance of the peatland resource during the design of the windfarm. We welcome this but consider that further measures need to be put in place for the residual impact. For instance where infrastructure is located close to deep peat or good habitats then further detail is required to demonstrate there is no impact e.g. turbine 16 is located close to M19 habitat so questions remain as to whether the footprint of the turbine would impact on the blanket bog either directly or through hydrological impacts and whether the turbine can be re-sited to the west.
65. We would suggest that the use of drainage ditches along roads is minimised. It is unclear why floating roads need to have associated drainage ditches. Removal of these would further minimise residual impacts.

Protected species (other than birds)

Water vole

66. We note the presence of water voles on the site and the statement that some water vole habitat will be directly impacted by construction. We advise that a species protection plan is discussed and agreed with us prior to the submission of the project to the Planning Inspectorate. We require the following additional information with regard to the water vole assessment in the ES:
- A map of the study area for the surveys and the surveyor;
 - A detailed map and table of all water voles records and how they were recorded and the date;

- An assessment of what parts of the site have the potential to support water vole based on the results of the survey;
- A detailed map showing the areas of suitable habitat to be impacted by the development and an assessment of the proportion of confirmed and potential habitat;
- Mitigation measures to ensure water voles are not impacted. These should include the marking out of protected buffer zones and preconstruction surveys;
- A conservation strategy for water vole as mitigation for the potential effects.

Otter

67. Otter is a feature of the River Wye SAC and should be valued as being of international importance given the definitions used in the ES, rather than the County importance in the ecology chapter (section 11.359).
68. Potential impacts on otter will need to be considered in the HRA and you should note that this assessment is different to applying for a licence to disturb otter.
69. We advise that a species protection plan is prepared and agreed with us prior to the submission of the project to the Planning Inspectorate. We suggest that the following is considered in this document:
 - A requirement for up date survey prior to commencement of construction;
 - Update surveys through the construction period as proposed 6 month intervals;
 - Measures to protect places of shelter used by otters for breeding, resting etc. In addition to the buffer zones for resting places you will also need to include larger buffer zones for potential breeding locations;
 - Measures to ensure the safe passage of otters along watercourses as figure 11.7 shows otter records near to areas of infrastructure. This should include culvert designs, lighting etc.
 - Requirement to inform all personnel of the necessity to implement measures contained in the Species Protection Plan;
 - Measures to maintain water quality and flow on site.

We suggest that this document includes water voles, bats and badgers as well.

Bats

70. We welcome the bat reports included in the ES. To allow to assess how bat activity relate to infrastructure locations we request amended version of the figures in appendix 11.16 showing bat registrations and the location of infrastructure. Figure 11.7 summarises this data but the same map is required for the individual data points.
71. Some assessment of the relative density of bats would also be useful e.g. registrations per unit time to provide evidence that the relative densities of bats are low on the site.
72. The ES should clearly set out the distance of all turbines from watercourses and other habitat features likely to be used by bats. Similar information is required to inform the Habitats Regulations Assessment to assess the risk of sediment release from turbines close to watercourses. It would be helpful to have confirmation that all turbine blade tips are located more than 50m from features likely to be used by bats.
73. We request maps showing how the location of the transects, anabats and bat records relate to the location of infrastructure.

Fisheries

74. The ES focuses almost entirely on the Wye and its tributaries in relation to potential impacts on fish. We acknowledge the majority of the watercourses within the proposed site area are tributaries of the Wye. However, watercourses to the north east of the site drain to the Severn and the ES has done little work to establish baseline conditions in these streams. We expect these Severn tributaries to support populations of brown trout and possibly bullhead while the Severn downstream supports Atlantic salmon.
75. The ES has provided surveys to determine baseline conditions of fisheries in and nearby the proposed site. Survey work appears to be limited to bullhead surveys, presumably because bullhead are a feature of the River Wye SAC. The bullhead survey methodology utilised (using lift nets and visually searching for fish) is not efficient and will identify less individuals than electric fishing techniques. We advise that as brown trout were found during bullhead surveying, further surveying is not considered necessary to determine the presence of other fish species (especially bullhead). It is likely that tributaries in and nearby the proposed site support other fish species but the mitigation measures (pollution prevention and watercourse crossings) required due to the presence of brown trout will be appropriate for any other fish species which are present. It should be noted that the survey work to date should not be used to confirm the presence of bullhead (or other fish). If you wish to provide evidence to prove bullhead – or other fish – are not present, full surveying using appropriate methodology will be required.
76. Our data confirms that Atlantic salmon and brown trout are present in the River Wye just downstream of the development site. Atlantic salmon and brown trout are UK Biodiversity Action Plan Priority Species. Developments of this nature have the potential to cause pollution of watercourses through increasing silt loadings resulting from construction phase run-off. This type of pollution is harmful to salmon and trout and is a particular issue during the salmonid spawning season where silt pollution can disturb spawning, adult fish or smother eggs and juveniles contained within the river gravels. If you cannot demonstrate that the site run-off can be contained through the CEMP and the Drainage Management Plan (DMP), we may request that controls are secured ensuring the construction phase of the development is limited to a period running from 01 May to 30 September, so as to avoid the salmonid spawning season.
77. With to appendix 11.1 you need to provide information on Section 42 species and habitats

Appendix 11.17 Habitat Management Plan (HMP)

78. The details of the Tir Gofal management prescriptions in the areas covered by the HMP need to be included in the HMP and agreed with Natural Resources Wales. The Tir Gofal prescriptions may not be optimal for the management of the habitat. Details of the stocking rates are provided in the HMP for the Esgair y Maesnant area but not for the North-Eastern Arm and Tir Gwyn/y Foel areas.
79. The HMP needs to include objectives setting out what the plan is to achieve over the 25 years. Curlew habitat is mentioned along with monitoring of curlew but this is not one of the objectives of the HMP.
80. Other matters to be clarified for the HMP are:
 - Are the areas identified for the HMP fenced off from the surrounding land and if not how can the target stocking rates be maintained in these areas? It is not clear
 - We are not convinced that tethered goats would eat *Molinia*. There would also appear to be welfare issues with keeping them tethered on an exposed upland habitat.
 - Use of the right cutting machinery could mean that no collection of cut material was required which would reduce the costs of cutting.
 - One of the areas supporting water vole is not included in the HMP.

- Is the cattle grazing proposed over the whole 25 year duration of the HMP? This not clear from the implementation timetable.

- Further information and discussion is required on the purposes of monitoring.

81. We would suggest that further discussion is required on the Habitat Management Plan to identify objectives and suitable prescriptions.

Chapter 12 Archaeology and Cultural heritage

82. Natural Resources Wales's remit with regard to cultural heritage mainly relates to consideration of the potential impacts on landscapes included on the non-statutory *Register of Landscapes of Historic Interest in Wales* (Cadw 1998, 2001). The proposed development is located within 10km of three of the landscapes included on the Register, namely the Ucheldir Ceredigion / Upland Ceredigion landscape of outstanding historic interest, the Dyffryn Clywedog / Clywedog Valley landscape of special historic interest and the Cwm Elan / Elan Valley landscape of special historic interest. Impacts are therefore limited to 'indirect visual effects' (Cadw 2007).

83. We consider that the magnitude of impacts have been consistently underscored at Stage 3 of the ASIDOHL2 – Assessment of Indirect Visual Impacts. The following is a representative sample of Historic Character Areas (HCAs) in the two Historic Landscape Areas (HLAs) potentially most affected, where underscoring has been noted:

- *Upland Ceredigion HLA, Fuches Wen HCA, Table 2.1.1;*

We suggest that the magnitude of impacts would be at least 'Moderate' at the Bryn Llychese HCA Viewpoint Fig. 4, where the turbines would appear prominent at 3.5 km distance, but rising to 'Considerable' at Llechwedd Llwyd where the turbines would appear dominant at c. 2.2 km distance. The overall impact on this HCA would, therefore, be 'Moderate', as opposed to 'Slight'.

- *Upland Ceredigion HLA, Peraidd Fynydd HCA, Table 2.1.2*

We question the undue weight given to modern forestry plantations when they are regarded in ASIDOHL2 assessments as causing, if not entirely permanent, then certainly long-term restrictions on the visibility of turbines from heritage assets and from within HCAs. As a consequence, impact magnitudes are scored too low.

We consider that a shorter term view should be taken of modern forestry cover and that the impacts within HCAs are treated in exactly the same way as the predicted impacts of the proposed development; namely that they are regarded as temporary and reversible within the context of the wind farm's stipulated 25 year lifespan. In other words, during felling and re-stocking and the routine assessment of these programmes by the Welsh Archaeological Trusts, there should be a similar and fair presumption in favour of achieving the permanent removal of forest cover from Category A and B heritage assets and their settings, within a similar, if not shorter, time scale. In turn, this should be reflected in scoring impact magnitudes higher to reflect the permanent removal of forestry cover that is potentially achievable before the end of a wind farm's operational lifetime.

Within the Peraidd Fynydd HCA, we consider that there would be a 'Considerable' rather than a 'Slight' impact on the Cae Gaer Roman fort (HCA Viewpoint Fig. 5) at about 2.5 km from the proposed development, where the turbines would appear dominant on the skyline. The overall impact on this HCA would therefore be 'Moderate' rather than 'Slight'.

The points raised in relation to modern forestry cover also apply to the magnitude of impacts on the Blaen Pethiant HCA (Table 2.1.3) and also to the Mynydd y Ffynnon HCA (sections 2.1.5 – 2.1.6), on which we consider there would be 'Slight' to 'Moderate' impacts in each case.

- *Upland Ceredigion HLA, Pumlumon HCA, Table 2.1.4*

This is one of the key and pivotal HCAs within the Upland Ceredigion HLA, containing numerous single and groups of Bronze Age summit cairns, and having important historic, legendary associations with the Mabinogion tales. We consider that the individual cairns or groups of cairns should have been assessed separately, and not as a single asset. The historic, legendary associations, are nationally well-known, and also should have been taken into account.

The magnitude of impact on the Bronze Age cairns considered as a single asset is given as 'Slight', but for at least the Pumlumon Summit Cairns (HCA Viewpoint Fig. 6), the impact would be 'Considerable', given their high sensitivity and the significance of the Mabinogion connections. In any case, the 'Slight' grade given here does not accord with the 'Moderate to Substantial / Substantial' Magnitude of Effect predicted for LVIA Viewpoint 1 Plynlimon Fawr, which is exactly the same as HCA Viewpoint Fig. 6, where from the turbines would appear very prominent with the closest being at about 3.9 km distance.

HCA Viewpoint Fig. 7 shows the view from the cairns on Pen Plunlumon-Arwystli, which at about 2 km distance to the nearest turbine, is at half the distance from the proposed development compared to HCA Viewpoint Fig. 6, and where we consider that the impact would also be 'Considerable', if not 'Fairly Severe'. HCA Viewpoint Fig. 8 at Carn Biga, at about 3.6 km from the nearest turbine, coincides with LVIA Viewpoint 3 Plynlimon Cwmbiga, where the turbines would be very prominent and the Magnitude of Effect is predicted to be 'Moderate to Substantial / Substantial'. Even at LVIA Viewpoint 14 Foel y Fadian, which is just within the northern boundary of the Pumlumon HCA and at almost 9 km distance from the nearest turbine, the LVIA Magnitude of Effect is predicted to be 'Moderate'.

We consider, therefore, that although the proposed development would not be visible from the greater extent of this HCA, the high sensitivity of the heritage assets and of the historic associations within the extents affected, and the proximity of the proposed development to these, means that it would have a 'Considerable' to 'Fairly Severe' impact on this HCA overall.

- *Clywedog Valley HLA, Dylife HCA, Table 2.2.1*

HCA Viewpoint Fig. 11 shows the views towards the proposed development from the Penygroc bren Roman fortlet, a key asset occupying a commanding position with long-range views in all directions. The turbines would appear conspicuous on the horizon to the south west, with the closest being at about 7.7 km distance, causing a 'Moderate' rather than the 'Very Slight' impact noted. The Carno 1 and 2 wind farm turbines are closer and prominent at about 5.5 km to the east and impart at least a 'Moderate' impact on the views in that direction. The impact of the proposed development on this HCA overall is therefore considered to be 'Moderate'.

- *Clywedog Valley HLA, Staylittle HCA, Table 2.2.2*

HCA Viewpoint Fig. 12 shows that at about 7.5 km to the closest turbine, the proposed development would appear conspicuous, if not prominent in the view south west of the southernmost mound in the Llwyn y Gog Bronze Age barrow group. At LVIA Viewpoint 15 Sustrans Route above Staylittle, to the north east, a 'Moderate / Moderate to Substantial' Magnitude of Effect is predicted, which accords with our view that the impact on the HCA overall would be 'Moderate' rather than the 'Slight' recorded.

- *Clywedog Valley HLA, Bryn y Groes HCA, Table 2.2.4*

HCA Viewpoints Figs. 14 and 15 at about 3.8 km and 6.3 km distance respectively from the closest turbine, show that the proposed development would be prominent and would have a Magnitude of Effect of 'Moderate to Substantial' at LVIA Viewpoint 18 Llyn Clywedog, which is about 250 m north west of HCA Viewpoint Fig. 15. In our view, this would equate with a 'Moderate' impact on the HCA overall, but locally 'Considerable' at the Pen-y-Gaer hillfort, which commands spectacular and exceptional views in all direction from HCA Viewpoint Fig. 15. This does not accord with the 'Slight' impacts noted for this HCA overall.

- *Clywedog Valley HLA, Bryn y Fan HCA, Table 2.2.6*

HCA Viewpoint Fig.17 at the summit of Bryn y Fan is very close to LVIA Viewpoint 6 Bryn y Fan High Point, on which it is predicted that the proposed development would have a 'Moderate / Moderate to Substantial' Magnitude of Effect, with the turbines appearing conspicuous on the horizon and the closest being at about 8.9 km distance. We consider that this would accord with a 'Moderate' impact on the HCA overall as opposed to the 'Slight' recorded.

84. At stage 4 of the ASIDOHL2 we consider that clear justifications have been provided throughout apart from the omission of a 'V High' and 'High' rating for the historic, legendary associations of the Plumlumon HLC with the Mabinogion tales, in Tables 3.1.7 and 3.1.8 respectively. The scoring is therefore considered to be accurately representative of the values of the HLCs likely to be affected by the proposed development.
85. Although the Relative Values have been accurately scored at Stage 4, the Stage 5 Value scores are slightly lower or higher than they should be in some cases, e.g. Craig-y-Dduallt and Bryn y Groes HCAs should both be scored 5 rather than 4, whereas Pumlumon HCA should be 7 rather than 8 and Fairdre HCA should be 6 rather than 7. However, because of the consistent underscoring of the Stage 3 impacts, the Stage 5 Impact scores should be higher by one point in one HCA, two points in 7 HCAs and 3 points in the remaining 4 HCAs. As a result, the Stage 5 Change in Value and Character scores should also be higher by one point in 5 HCAs, two points in 3 HCAs and 3 points in four HCAs. In consequence, our re-working of the Stage 5 results indicates that Overall Significance of Impact grade for each HCA should be revised as follows:

Upland Ceredigion HLA

Fuches Wen HCA - 'Moderate' from 'Slight'
 Peraidd Fynydd HCA - 'Moderate' from 'Slight'
 Blaen Pethiant HCA - remains at 'Slight'
 Pumlumon HCA - 'Fairly Severe' from 'Moderate'

Clywedog Valley HLA

Dylife HCA - 'Moderate' from 'Slight'
 Staylitttle HCA - 'Moderate' from 'Slight'
 Craig-y-dduallt HCA - 'Moderate' from 'Slight'
 Bryn y Groes HCA - 'Moderate' from 'Slight'
 Fairdre HCA - 'Moderate' from 'Slight'
 Bryn y Fan HCA - 'Moderate' from 'Slight'
 Manledd HCA - 'Moderate' from 'Slight'

Elan Valley HLA

Elenydd HCA - 'Moderate' from 'Slight'

86. In conclusion we consider that the ASIDOHL2 Assessment underestimates the significance of impacts as being 'Slight' rather than 'Moderate' on all three HLAs overall. This is borne out by the consistently higher 'Magnitude of Effects' grades recorded at LVIA Viewpoints, which are the same as, or close to the HCA Viewpoints.
87. Natural Resources Wales has particular concerns that the proposed development would, in its view, have a 'Fairly Severe' impact on the Pumlumon HCA, which is at the hub of the Upland Ceredigion HLA and so highly emblematic of its characteristics overall. The importance of the historic, legendary associations with the *Mabinogion* tales and the panoramic views from the summit cairns are widely recognised in Wales. The moving turbine blades in the proposed development would be prominent in the views from the summits of Pumlumon Fawr (HCA Viewpoint Fig. 9) and Carn Biga (HCA Viewpoint Fig. 10) and dominate the views from Pen Pumlumon – Arwystli (HCA Viewpoint Fig. 9).

88. We also have concerns that the ASIDOHL2 Assessment does not consider the cumulative impacts of the proposed development with other, operational or proposed wind farms in the area, although these are addressed in the Landscape and Visual Amenity Assessment (Chapter 8). We recommend that the cumulative impacts on the three HLAs included in the ASIDOHL2 Assessment should be assessed in relation to the Bryn Titli, Carno (A + B) and the proposed Carno 3 extension, Cefn Croes, Llandinam PL and Llandinam Repowering, Rheidol and Nant y Moch wind farms. These are considered to be the only proposed or operational wind farms having the potential to bring about significant combined landscape or visual impacts (Draft ES, 8.543 - 8.544).
89. It is particularly important to establish the cumulative impact of the proposed Nant y Moch development, as this would cause potentially comparable impacts to the Mynydd y Gwynt development, on the west side of the Pumlumon HCA .
90. The Grid Connection is subject to a separate planning application, although it is considered in some detail in Chapter 17 of the Draft ES. The figures of the route corridor in Appendix 17-1 of the Draft ES indicate that the connection would pass through or be very close to the Clywedog Valley and Caersws Basin HLAs (Bro Caersws / Caersws Basin, Cadw 2001, HLW (P) 5, pp. 84-86). We advise that ASIDOHL2 assessments should be undertaken to establish the likely impacts of the grid connection on these two HLAs.
91. On balance, Natural Resources Wales has serious concerns that the current proposal is unacceptable because of its 'Moderate' impact overall on the Upland Ceredigion, Clywedog Valley, Elan Valley HLAs, and its 'Fairly Severe' impact on the Pumlumon HCA in particular. Further mitigation should be considered including utilising turbines that are of a lower height to blade tip and removal of those turbines closer to the Pumlumon HCA.

Chapter 14 Geology, Hydrology and Hydrogeology

92. In section 14.63 the ES states that a 40m buffer has been recommended around turbine foundations. Clarification is required on whether this recommended distance has been achieved for all turbines and whether this is a 40m buffer between the centre of the turbines or the edge of the turbine/crane pad/lay-down area. The ES should include information on the distance of all infrastructure from surface and subsurface water features and this will also be required for the HRA screening report. We also note that most windfarms used a 50m buffer between turbines and watercourses. Justification needs to be provided for the use of a 40m buffer.
93. The ES notes that a settlement pond will be required for turbine 27 because of its proximity to a watercourse. What is the distance of this turbine from the watercourse and is it closer than 50m?
94. The ES has calculated an increase of 1.2% of impermeable surfaces which is considered a low magnitude effect to the site's characteristics. However, the ES should still assess how the additional run-off is diverted and whether it stays in the same catchment. There is still the potential for this increase to change the hydrological regime on close to the site causing an impact. This should be assessed further and opportunities explored to use this additional run-off in a sustainable way, for example diverting into any watercourse that may have lost baseflow due to peat removal.
95. Minimal water should be lost from the River Wye and any water diversions should be re-directed as naturally as possible to feed back into the River Wye with no increase in sedimentation.
96. Natural Resources Wales previously gave advice in a scoping letter dated 27 March 2009 that the ES needed to consider the potential for the pollution of watercourses with heavy metals from the historic metal mines present in the development area. This potential impact has not been considered in the ES. This is an omission.

97. Construction is proposed on an area that is currently a car park and service area for rally events. There is potential that this brownfield site is contaminated. This area should be investigated for potential contamination of the soils and groundwaters. If there is a risk to the water environment from this area then remediation measures should be considered and implemented in line with CLR11 guidance.
98. There is no reference to the Groundwater Directive (1980) and the Groundwater Daughter Directive (2006) in the ES, these should be included. These Directives cover the discharge of hazardous and non-hazardous substance to groundwater, which is relevant to this development, and therefore should be considered.
99. The proposed development site experiences high rainfall and includes steep slopes. These factors increase the risk of surface water (contaminated with silt) running off roads, drainage channels etc and discharging to watercourses. Silt pollution causes lasting damage to river life such as fish, insects and plants and can also build up to cause flooding. Where there is a risk of such discharge, adequate interception facilities should be put in place to ensure that there is no adverse affect on water quality. Construction of temporary silt traps such be considered and provision should be made for their maintenance. Roadside drains likely to carry high sediment loads must not be allowed to discharge directly to streams. No rainwater contaminated with silt/soil from disturbed ground during construction must drain to watercourses without sufficient settlement.
100. Where there is a likelihood of site drainage containing suspended solids and/or silt the effluent should be contained within a settlement lagoon (or similar facility), so any discharge from site is free of suspended solids. These facilities should be capable of containing the effluent from a 1/100 year rainfall event.
101. We are concerned that new roads will start to receive heavy traffic in large volumes soon after they are constructed. Best practice is for built tracks to be left for 12 months, or as long as possible, prior to their use in order to let them bed in. This will lessen the potential pollution impact from these roads being used. We ask that this measure is considered in the ES and Development Consent Order.
102. We also have concerns with the large volume of concrete being produced on site and the associated wash out system. We require more information in the CEMP about the exact process or processes being used given the information referenced in the construction chapter. The information already provided is thorough but further detail will be needed, for example ensuring there is a lined wash-out area at the batching plant for contingency as we have concerns that washing out the concrete lorries in the excavation may not be carried out on site.
103. Concerns over increased sedimentation close to the River Wye SAC and the headwaters of the River Wye, as well as known historical water quality issues in the Wye and its tributaries requires robust monitoring of water quality / watercourses on and adjacent to development site. We are likely to request monitoring is undertaken before construction starts, during construction and for a period after.

Water Resources

104. The ES should demonstrate that the development will not affect any water features (i.e. wells, boreholes, springs, streams or ponds) in the area, including licensed and unlicensed abstractions. We confirm that there are no licensed abstractions within the site boundary or immediate surroundings as of June 2013. You should contact NRW before submitting a formal application to check whether abstraction licenses have been issued in the area since. It is possible that unlicensed abstractions exist, particularly for domestic and/or agricultural use.
105. We note that you intend to abstract water but there is no mention of impoundment. We endorse the efficient use of water. Major developments such as this can take economic advantage of

technologies and should be considered. These technologies ensure efficient use of natural resources and have environmental benefits.

106. The ES identifies that the applicant would apply for a licence to abstract water from the River Wye for various construction stage activities (Chapter 6). The potential for the abstractions to impact on the River Wye SAC should be considered as part of the HRA screening report and it is likely that further details will therefore need to be discussed with us.
107. If dewatering is required the ES should consider the following:
 - The 2003 Water Act provides for the removal of the existing exemption from water abstraction licence regulations for dewatering. When these regulations are implemented any abstraction for dewatering that involves more than 20 cubic metres per day of groundwater will require an Abstraction Licence;
 - If boreholes are used to de-water the site, notice must be served on NRW under section 30 of the Water Resources Act 1991. NRW will respond by specifying measures to be taken to protect existing sources;
 - Dewatering the proposed abstraction may lower groundwater levels locally and may derogate nearby domestic and licensed groundwater sources. If dewatering is required on site the applicant is advised to consider all known abstractions within the vicinity of the site.
108. The European Union Habitats Directive requires us to ensure that the activities we regulate do not have an adverse effect on designated sites, such as the River Wye SAC. As a result any abstraction from the River Wye or its tributaries may be subject to stringent restrictions to ensure flows are adequately protected. This means that water may only be available for abstraction at high flows.

Chapter 20 Grid Connection

109. The ES states that the Mynydd y Gwynt windfarm is the subject of a connection offer from SPEN. Reference to SPEN's Mid Wales Connections Second Strategic Optioneering Report (2012) shows that that this connection offer has not been accepted by the Mynydd y Gwynt windfarm. Natural Resources Wales' understanding is that SPEN's Mid Wales Connection project is therefore being planned and developed without taking into account the need to connect the Mynydd y Gwynt windfarm.
110. The ES states that part of the 132kV grid connection from the Mynydd y Gwynt windfarm to the proposed Cefn Coch substation will be via the CC1 corridor. Reference to SPEN's Second Strategic Optioneering Report suggest that the 132kV connection in this corridor is being developed for the Llaithddu (74MW), Llanbadarn Fynydd (61.2MW) and Neuadd Goch (30MW) windfarms of all which have a contracted connection agreement with SPEN. The proposed capacity of the 132kV line within the CC1 corridor is 176 MVA. This line is to be built on wooden poles and does not have the capacity to take the additional output from the Mynydd y Gwynt windfarm which is a maximum of 81MW.
111. If the CC1 corridor line is to take the Mynydd y Gwynt windfarm then the consequence will be that the line will have to be upgraded to a small pylon line. If the existing planned 132kV wood line is not upgraded then an additional 132kV line will have to be placed in the CC1 corridor. Both of these options would lead to additional landscape and visual amenity impacts. The Mynydd y Gwynt ES needs to assess this.
112. The proposed grid route in appendix 17.1 shows the line following the route of the A44 and the A470 and passing through the settlements of Llangurig and Llanidloes. This does not appear to be a route which SPEN would select given our understanding of their routing methodology.

There would therefore appear to be some uncertainty as to whether the route assessed in the ES is a feasible route alignment. It would be helpful to have this confirmed by SPEN.

Draft Traffic Management Plan

113. An ecological impact assessment for the road improvements is included in the ES for the lay-bys. However other road improvements are not included e.g. the mature trees which need to be removed at the site entrance. The omission of these works needs to be justified.
114. There is no landscape impact assessment for the proposed road amendments. This is an omission. If the Highways Authority identifies further works are required then the impact of these will need to be assessed in the ES.
115. If grass reinforcement is required on the A44 trunk road then concrete grass reinforcement would not be best solution. We suggest other reinforcement solutions are investigated. The use of bollards and marker posts should also be avoided to minimise the urbanisation of the road in an open countryside location.

Appendix 2.1 Carbon balance assessment

116. Natural Resources Wales cannot verify the carbon balance assessment without an excel table of the calculator being provided. We suggest that this is provided to us for comment and review prior to the finalisation of the ES and the submission of the application to the Planning Inspectorate. An example of omitted information is the volumes of peat to be disturbed at the site.
117. Not all of the information contained in the carbon calculator is provide in appendix 2.1. However based on the information which is provided we have the comments below.
 - The capacity factor appears high for a Welsh context with 28% being the welsh average.
 - The extent of drainage around drainage features is estimated at 3m. Further justification is required for this value and Natural Resources Wales consider this to be a very conservative estimate of the potential drainage effects.
 - The average temperature of the site is relatively high compared to many other windfarms in Mid Wales.

References

Cadw (1997, 2005) *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales*.

Cadw (2007) *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process*, Cadw, 2nd (revised) edition.