PINs Ref: APP/T6850/A/17/3176128

Appeal by Hendy Wind Farm Ltd against refusal of planning permission to construct and operate 7 wind turbines with a maximum tip height of 110m and maximum hub height of 69m together with ancillary development comprising substation, control building, new and upgraded access points and tracks, hard standing and temporary compound and associated works at land off A44, SW of Llandegley, Llandrindod Wells, Powys, LD1 5UG.

Evidence of Dr. Christine Hugh-Jones (Ecology & SAC)

on behalf of

Brecon and Radnor Branch of The Campaign for the Protection of Rural Wales

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C: Appeal Document APP018 Draft 106 Plan 1

D: Extract from Bryn Blaen Powys application reference P/2014/1102 Environmental Statement (page 4)

E: UK government circular 06/2005: Biodiversity and Geological Conservation – Statutory obligations and their impact within the planning system

F: Welsh Government Research Briefing. The Planning Series: 16 – Habitats Regulations Assessment (December 2017)

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Z: IEEM Guidance on Environmental Impact Assessment 2006

AA: IEEM Guidance on Environmental Impact Assessment 2016

Witness details

My name is Dr Christine Hugh-Jones.

My address is Cooks House, Norton, Presteigne, Powys LD8 2HA

I am Secretary of the Brecon and Radnor Branch of the Campaign for the Protection of Rural Wales, a Rule 6 party in this Public Inquiry.

I am a Social Anthropologist and retired Medical Doctor.

I have a First Class Honours degree from the London School of Economics in Sociology (including Statistics, Economics, Sociological Theory and Social Anthropology) and a Social Anthropology PhD from Cambridge University. I have published various anthropological papers. My PhD field research on Tukanoan Indian Communities of the Colombian Northwest Amazon was published by Cambridge University Press: From the Milk River: Spatial and Temporal Processes in Northwest Amazonia (1979)

I held a College Fellowship at New Hall, Cambridge and have also taught at Oxford University.

I have a Medical Degree (MB, BChir) from, Cambridge University (Caius College and Addenbrooke's Hospital) and further qualifications: MRCGP and DRCOG. I worked for over 20 years as a GP, latterly setting up an NHS Primary Care Centre for homeless people where I was clinical lead.

Natural history and ecology have been a hobby throughout my life and integrated into my anthropological career. My husband and I came to live in an isolated house near Presteigne, Powys in 2000 in order to enjoy the natural environment. I am a keen walker and have walked the whole of Offa's Dyke, alone in 10 consecutive days.

My ongoing experiences in the Amazon and living in rural Powys have made me acutely aware of the fragility of our natural environment.

I am a member of the Radnorshire Wildlife Trust, The South and West Wales Wildlife Trust, The British Trust for Ornithology, the Wildfowl and Wetlands Trust, Friends of Cambridge

Botanic Gardens, the Welsh Ramblers and Hereford Council for the Protection of Rural England.

My professional skills enable me to evaluate evidence, read scientific and sociological documents critically, comprehend the purposes and content of protocols and methodologies and assess whether they are properly applied. I have applied those skills to the information within the environmental statement.

EVIDENCE SUMMARY

1 My evidence contains a description of the site, the elements of the wind farm proposal and the stages of construction as set out in the Environmental Statement.

2 Construction risks to ecology are of direct reduction and damage to habitats and natural species, displacement of natural populations through disturbance, and further harm through alteration of the hydrological regime, depositing of sediment downstream or pollution of watercourses. Some of these impacts will be irreversible and could also increase flooding in the operation phase.

3 The Ecology Core Study Area, which coincides with the ownership boundary containing the turbines, is part of an undulating upland basin draining towards the south. Nant Brook and the Edw arise from the southeast facing slopes of Llandegley Rocks. Nant Brook flows through the ownership area, crossing a turbine access track and, further south, crossing the track to a quarry which will furnish over 23,000m^3 of stone.

4 There is a great deal of cut and fill required as shown in Figs 1.2.1 to 1.2.9 and the deviation from the existing ground level is between 12m lower and over 6m higher. The surface and ground water regimes have not been mapped.

5 The river Edw crosses an access track junction and then flows east, out of the ownership area, parallel to the main access route until it reaches Pye Corner. Here the BOAT, upgraded to accommodate turbine transporters, meets the U1574 very close to the Edw. This main access route is one of several parts of the whole development, requiring major construction, which are not included in the ecology assessment.

6 The drainage regime results in no significant connection to the SAC 2.7Km north of the site but there is no doubt that these two watercourses, which are subject to major

construction works, connect the site to the Wye SAC 1km to the south of the site. This SAC is also designated as an SSSI and its northern limit is where Nant Brook flows into the Edw.

7 The European Court of Justice has ruled that there must be no reasonable scientific doubt that a plan or project will not adversely affect the integrity of a SAC. This high level of protection is backed by PPW. If any likely significant impact is identified a Habitats Regulation Assessment (HRA) is mandatory. Run off of sediment or other pollution from the significant amount of construction could affect the SAC. Moreover a known episode of serious pollution of the Edw in the 1990s, which resulted from forestry work on the proposed windfarm site, proves that the SAC is vulnerable.

8 Nevertheless the ES concluded, "The lack of ecological connection between the proposed Development and any internationally or nationally designated sites means there will be no impact on these sites." NRW did not accept this conclusion and required an HRA accompanied by a Construction Ecology Management Plan (CEMP) to inform the mitigation measures designed to protect the SAC.

9 The HRA identified the SAC conservation objectives and likely risks to these. All "probable potential significant impacts" were reduced to "Extremely unlikely – No significant impacts anticipated" by a series of generic mitigation measures such as drains, ditches and culverts. There was no accompanying mapping of water features, on-site research, calculation and quantification of risks or description of the actual dimensions and locations of any mitigations measures either in the HRA or the preceding ES. The failure to detail the culverting of the major watercourses is a case in point.

10 There was no attempt to survey the on-site water courses for populations of Annex II species for which the SAC is a designated habitat although these species are protected and white clawed crayfish are part of the Powys Biodiversity Action Plan and may well be present upstream from the SAC.

11 The HRA was not accompanied by a CEMP; nevertheless the HRA was accepted by a different NRW officer who was satisfied that the non-specific mitigation measures would be effective. She decided the CEMP could be provided post determination.

12 We consider that a Competent National Authority such as NRW could not have been satisfied beyond all reasonable doubt that a series of generic measures would protect the SAC from any adverse impacts. There was not sufficient information about construction or evidence from research on which to base this conclusion and so the development should not be allowed. Permission in these circumstances would be contrary to EIA regulations, PPW9 and TAN 5.

13 We also have further concerns about the developer's Ecological evidence.

14 An Ecology Core Study Area was adopted coterminous with the blue-line ownership area shown in Fig 1.1. The west and east boundaries of the Core Area are only some 50m (20m subtracting micrositing allowance) from the blade-swept area of T7 and T1 respectively while the north and south boundaries are more distant from turbines and infrastructure. The track to the southern quarry is included but touches the core area boundary.

15 SNH Guidance and EIA regulations require consideration of all elements of the development.

16 Three stretches of site access routes to be constructed as a part of this development have not been considered in the ecological survey: northern and southern roads across Llandegley Rhos common from the A44 in the north and Pye Corner in the south, and access from the A44 to the U1574 and onwards along the U1574 to Pye Corner.

17 Llandegley Rhos common lies wholly outside the Core Area for ecological survey. Construction of access roads will require substantial cut and fill operations, culverts

over a number of streams, and encroach upon an area of marsh on the common. Ecological impacts have not been assessed.

18 Restriction of the Core Area has also resulted in failure to identify key conservation species. Answering the Powys Ecologist's concerns about curlew on the common, the developer makes unevidenced assertions about their location, and misleading statements about the scale of the construction works on the common.

19 On a site of such ornithological interest, the quality of survey work for birds is critical. I have compared the ES data regarding vantage point surveys with the SNH guidance: the selection of priority species for survey is not explained; species are inconsistently recorded; notes refer to unidentified alphabetical locations; and SNH guidance on the tailoring of surveys to behaviours of target species, for example by selection of suitable survey times, has not been followed.

20 Responding to Powys Ecologist's concerns about the large starling roost, the developer has made further unevidenced assertions regarding numbers and behaviour of starlings on the site. The Wildlife Trust and County Bird Recorder, both with expert local knowledge, have not been consulted.

21 Inappropriate methodology underpins assessment of Significance of Impacts. ES conclusions rely on superseded IEEM guidance which allowed use of a matrix based on categories of "ecological value of a species and/or habitat" based on the administrative level of protection, and permitted subjective evaluations to downplay the significance of impacts.

22 The most recent (2016) guidance discusses the problems of subjective evaluations and the precautionary principle stating "In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed." and also says "This guidance avoids and discourages use of the matrix approach."

23 Critical information required by TAN 5, requested by NRW and the County Ecologist has not been provided.

24 Tan 5 says “To facilitate the efficient and timely processing of planning applications developers should ensure that applications are carefully prepared with all relevant information included and all material considerations addressed in the layout, design and related access, drainage and infrastructure. Landscaping proposals should be included together with any measures designed to avoid, mitigate or compensate for potential adverse effects on nature conservation. Any proposals for enhancement of nature conservation interests should also be included. These matters should not normally be left for later submission under conditions imposed on any permission given, because they will be material to the determination of whether planning permission should be granted.”

25 No CEMP, Protected Species Protection Plan or Habitats Restoration Scheme have been submitted. The ES describes generic rather than site specific measures and does not address the particular features of this site. The developer has offered mitigation, when pressed to do so, in the form of the felling of the trees in which the starlings roost and other work on land outside the applicants’ ownership and control.

26 I have already mentioned our concerns regarding impacts on the SAC. We find impacts on avian ecology inadequately identified, investigated and assessed in the developer’s documents such that the evidence cannot support ES conclusions. We note also that all conclusions on ecological impacts are fundamentally flawed by the adoption of an inadequate Core Study Area, and the postponement till post determination of submission of key environmental information.

27 Ecological evidence provided is insufficient and unreliable. It cannot support the ES conclusions regarding the acceptability of harms to the ecology of this site.

EVIDENCE FULL TEXT

1. Special area of conservation

1.1 Site description and development

1.1.1 The application site area and ownership boundary are shown on Fig 1.1 in ES Volume II - Figures. Contained within the redline site are the northern and southern access tracks. Save for a small area adjacent to Pye Corner the access track does not lie within the area owned. On the eastern edge of the site boundary the access track abuts or is potentially within part of the owned land. The part of the site containing turbines and tracks serving turbines and crane pads lies within the owned area. The site area is described on the application form as 19.25 hectares. The total landtake for the proposed development is described in ES Vol III 7.1.3 as approximately 99,874m^2. Drawings showing proposed access track alterations are at ES Fig 1.2.1- 1.2.9 and on amended plan submitted to the LPA in March 2015. South of the turbine area but within the application site boundary a track runs south, passing over the Nant Brook, to a small existing quarry.

1.1.2 Immediately east of the site is an area of woodland which does not lie within the ownership boundary. North and east of the site is an area of common land, also outside the ownership boundary. Adjacent to the Southern access track is the River Edw. The Nant Brook joins the River Edw, south of the site, which is part of the River Wye SAC.

1.1.3 Figure 7.1 Designated sites (in ES - Volume II Figures) shows the ecology core study area which corresponds to the main ownership boundary in Fig 1. The areas covered by View Point observations of birds are shown in Fig 7.7. Results of a Phase 1 Habitat survey in Fig 7.2 indicate which habitats within the Core Study Area are most sensitive to development. Table 7.6 shows the River Wye/Afon Gwy SAC has one part 2.7 km north west of the Core Study Area and another 1km to the South, at which point the River Edw is also designated as the River Wye Tributaries SSSI. Citation for the SAC is at Appendix A to this statement.

1.1.4 The site contains seven turbines, 110m to tip height and 69m to hub-height, connected by an access track with two spurs, an electrical substation, and a temporary construction compound. Electricity is exported via overhead line shown in Fig 1.7. A quarry to the south will supply stone for construction. The elements of the construction with dimensions are set out in ES 3.1 to 3.9 and summarised in Appendix B. A micro-siting allowance of 30m for turbines and 20m for tracks is assumed.

1.1.5 The ES describes a construction phase of approximately 12 months and an operating phase of 25 years, after which the turbines will be refurbished, replaced or removed. If they are removed the tracks and working areas will be scraped and reseeded but the crane pads will be retained. A decommissioning bond will cover the restoration of the site. These phases are described in ES 3.8 to 3.10.

1.2 Construction risks

1.2.1 Construction risks to ecology are of direct reduction and damage to habitats and natural species, displacement of natural populations through disturbance, and further harm through alteration of the hydrological regime, depositing of sediment downstream or pollution of watercourses. Some of these impacts will be irreversible and could also increase flooding in the operation phase. Risks particular to the operations phase are of flying species colliding with turbine blades.

1.2.2 The site is essentially an undulating raised basin with a pattern of waterways draining to the south to the SAC. There is no doubt that lower parts of the site are prone to water-logging as confirmed by our own site visits and the extent of field-drains. The construction will require extensive cut and fill and 6 culverts, one some 50m long, to achieve the layout proposed. Fig 1.6 shows a basic culvert design. The construction required for achieving access to the turbines from Pye corner is shown in Figs 1.2.1 to 1.2.9. The impact this will have on the surrounding terrain and hydrology regime is difficult to appreciate from ES Figs 1.2.1 to 1.2.9. The two-dimensional chainage diagrams below each section of track, showing how the finished ground level will differ

from the existing ground level, are of a different scale from the plans of track above making it difficult to match up locations. It is even more difficult to understand what will happen in three dimensions when whole areas of hardstanding require a significant change in ground level and where existing rights of way cross the new tracks. For instance Draft 106 Plan 1 Appeal document APP018 (Appendix C) shows turbine tracks, the existing BOAT, an existing bridleway and the alternative route for horse riders to maintain a 200m distance (not in accordance with British Horse Society guidance) from turbines, all criss-crossing each other in places where the turbine tracks have been raised or lowered from existing ground level.

1.2.3 In fig 1.2.1, the required cut is estimated at 135,023m^3 and the fill at 91,154m^3. This is over four times the cut and over twice the fill estimated in the ES for Bryn Blaen Windfarm (Vol II Figures Page 4 Figure 1.2.1) (Appendix D). Cuttings up to 12m deep and embankments over 6m high will inevitably require considerable landtake, and cause damage to habitat, major disturbance to wildlife and disrupt the surface water regime. It is impossible to see how the extensive culverting, sometimes through high banks, can be achieved while maintaining a safe distance between construction activity and water courses. The transport of stone from the southern quarry will expose the track from turbine 3 to very heavy use, and cause additional damage and risks to the lower course of Nant Brook which is crossed by the track.

1.3 Site hydrology

1.3.1 We know the site to be prone to waterlogging. ES 10.4.7 says the soils at the site are expected to impede drainage and are of variable thickness, from 0m to 2m so that tracks will be cut deep into relatively impermeable bedrock. We also know that dug out areas collect water as in the strange reference to Pond no.10 in Technical Appendix 7.6, a “recently dug pond for quarry stone (sic.)…..Farmer states that he will be filling it in shortly”. The risk of sediment reaching the SAC in surface run-off into upstream watercourses must be extremely high.

1.4 Impacts on designated sites

1.4.1 The UK government circular '06/2005: Biodiversity and Geological Conservation – Statutory obligations and their impact within the planning system' (Appendix E) referred to in the ES, says (of impacts on internationally designated sites) at Para 21 (Page 10): "the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made certain that the plan or project will not adversely affect the integrity of the site. "That is the case where no reasonable scientific doubt remains as to the absence of such effects". Competent national authorities must be "**convinced**" that there will not be an adverse effect and where doubt remains as to the absence of adverse effects, the plan or project must not be authorised, subject to the procedure outlined in Article 6(4) of the EC Habitats Directive regarding imperative reasons of overriding public interest."

1.4.2 PPW 9 says 5.3.8 "The Statutory Nature Conservation Designations include, for example, Sites of Special Scientific Interest (SSSIs), sites designated under the Ramsar Convention and those designated under EC Directives, such as Special Protection Areas (SPAs) or Special Areas of Conservation (SACs)." and 5.3.9 "The Welsh Government will ensure that international responsibilities and obligations for conservation are fully met, and that, consistent with the objectives of the designation, statutorily designated sites are protected from damage and deterioration, with their important features conserved by appropriate management."

1.4.3 The Welsh Assembly has recently published a document: 'Research Briefing. The Planning Series: 16 – Habitats Regulations Assessment' (December 2017) (Appendix F) which sets out the place of HRAs in the Welsh planning system. The key indicators of a significant effect on a Natura 2000 site include: disturbance: with the duration or permanence, distance from site; water resource with the relative change, and water quality with the relative change in key indicative chemicals and other elements. There is a mitigation hierarchy in which avoiding impacts at source and reducing impacts at source are the only options open to this developer. The report says (Page 9) "to enable mitigation measures to be assessed the following are required: evidence of how they

will be secured: who will implement them; the degree of confidence in their likely success; how they will be monitored; and how mitigation failure will be rectified." The Competent Authority should use the best information, science and technical know-how.

1.4.4 If there is a risk of significant effect on a European site, under the Conservation of Habitats and Species Regulations 2010 (as amended) (Page 45-6) (Appendix G), a Habitats Regulation Assessment is required. On 22.12.14 Caroline Moscrop, Natural Resources Wales Team Leader for Radnor and Brecknock, objected to the proposal (Appendix H) on the grounds that there was no transparent HRA. NRW also said that an HRA would need to rely on many of the mitigation measures in a Construction Environmental Management Plan (CEMP) which should be provided at the pre-application stage to support the HRA.

1.5 Pollution incident

1.5.1 A major pollution incident occurred in the area of the SAC before it was designated. Upland coniferous forestry clearance caused huge siltation of the Upper Edw river in the early 1990s killing a large proportion of the native and increasingly endangered white-clawed crayfish and affecting the river for many years afterwards This is referred to in 'Our Partnership with Nature: A local Biodiversity Action Plan for Powys. White Clawed Crayfish Action Plan September 2002' (Page 3) (Appendix I). The event is remembered by locals as the felling of forestry still shown on the OS Explorer 200 1:25,000 map (2006) (Appendix J). The ES Habitats Map 7.2 shows the area remaining as conifer plantation is entirely to the east of the Core study area but the ES 7.3 National Vegetation Classification shows the Northwest corner within the Core Study Area.

1.6 Assessment of hydrological risk

1.6.1 We have discussed the requirements for assessment with a professional hydrologist. We understand there are professional sources for these complex calculations, such as

the industry standard Centre for Ecology and Hydrology Flood-Estimation Handbook[1] which is in 5 volumes accompanied by software. Any such assessment is obviously far beyond our competence and requires detailed quantification from field work measurements, existing rainfall data and construction plans.

1.6.2 We understand that to assess the hydrology risk, it is essential to establish the proximity of the SAC to all construction works and to establish the surface and groundwater regimes of the areas on site and leading to the SAC. Professional assessments should be made by investigating the nature of rainfall events, taking account of extreme events of prolonged rainfall on already saturated ground. Site specific mitigation measures with their locations and dimensions and likely ability to absorb the run-off should be described. The need for settlement lagoons and where these could be located should be considered. Dimensions of culverts should be shown and risks of overflow should be calculated. The assessment should show how construction works will be confined to beyond the 20m buffer for water features described in ES 10.5.1 as a "standard buffer based on professional judgement for watercourses on windfarms" which is "considered protective of ecology." An assessment of the likely adverse impacts with and without mitigation based on evidence and sufficient to leave no reasonable scientific doubt should be set out.

1.6.3 In addition we would expect the HRA to conform to a reputable source of guidance for projects under the UK Habitats Regulations. We understand the David Tyldesley and Associates England and Wales Habitats Regulations Assessment Handbook to be the most reputable example. We understand the connection of the development to the SAC should be explored together with the distribution of the species for which the site is designated and their sensitivity to the likely impacts of the development. Existing sources of information should be consulted and inform tailored fieldwork assessment. An assessment of the likely adverse impacts with and without mitigation based on evidence and sufficient to leave no reasonable scientific doubt should be set out.

[1] https://www.ceh.ac.uk/services/flood-estimation-handbook

1.7 Ecological connectivity and fieldwork

1.7.1 The connection of the SAC to the site is the fundamental issue. It is therefore disturbing to read the statement in ES 7.12.1: "there is **no possible ecological connection** between the internationally-designated site and the proposed Development. Whilst the Edw is a tributary of the Wye, the section of the Edw at the site is at great distance from the Wye. Before it reaches the Wye, it passes through many intermediate areas all of which have their own influences on the river. Therefore the section on the site cannot be regarded as ecologically connected to the Wye." This informs the conclusion at ES 7.5 "The lack of ecological connection between the proposed Development and any internationally or nationally designated sites means there will be no impact on these sites." These passages concern us as they suggest a complete misunderstanding of ecological continuity and the landscape scale impacts of this development. An HRA was considered unnecessary.

1.7.2 There is no mapping of ground and surface water features in the ES and no Technical Appendix on Hydrology however 10.4.3 says "In the west and central area of the site the land drains via field drains to Nant Brook" and ES10.4.4 notes that Nant Brook, just south of the site at Hendy is at **significant** risk of flooding. The site layout shows the access track crossing Nant Brook close to T4 and another crossing lower down on the track to the quarry. Nant Brook runs westwards here but the OS map shows a stream arising from Nant Brook at this crossing and re-joining Nant Brook again at Hendy. Further south, Nant Brook joins the Edw at the northern limit of the SAC. The surface water regime is also complicated by land drains. ES 10.4.9 says the EA classifies the alluvium surrounding the southern part of Nant Brook on site as a secondary A Aquifer in which shallow ground water is expected to flow in the same direction as the adjacent surface waters. The heavy use of the track to the quarry and the quarrying operations themselves will be just over 1km from the SAC.

1.7.3 The OS map shows the Edw arising from the southwest facing slopes of Llandegley Rocks and flowing south to coincide precisely with the substantial triangular junction where the spur to T6 and T7 leaves the main access track to T5. It then flows east

through marshy ground, just south of the existing BOAT and proposed access track connecting the site to Pye Corner. At Pye Corner, the Edw, the end of the U1574 road, a stream running south to join the Edw, and the start of the BOAT all coincide at a point which would clearly require major earthworks to allow access for turbine transporters. After this the Edw is separated from the site by higher ground as it flows first south, then west, to the SAC boundary. Nevertheless the construction around Pye Corner will have major implications for this section of the Edw which is also connected to the SAC.

1.8 Habitats Regulation Assessment and mitigation proposals

1.8.1 While all these features require fieldwork verification, there is no doubt that both Nant Brook and the Edw provide direct connection between the site and the SAC, and both would be vulnerable to extensive construction and culverting proposed. Sediment and other pollutants could have an adverse impact on the SAC. HRA Table 5.5 sets out the Conservation Objectives for Relevant SAC Features of the River Wye and the HRA table 5.6, Impacts and Significance Afon Gwy (River Wye) SAC, describes the potential risks to the Relevant Conservation Objectives. Before mitigation the table says "probable potential significant impacts anticipated" for most items. Residual significance after mitigation is either "Extremely unlikely – No significant impacts anticipated" or "No effect" in every case.

1.8.2 However the mitigation in the HRA table 5.6 describes general measures, for example, blind ditches, cross drains, and checkdams allowing the substrate to infiltrate back into the groundwater, water quality checking, and installation of culverts during dry spells where possible, collection of clean run-off from subcatchments with regulation of discharge rates and so on. There is no description of site-specific mitigation measures so that the mitigation could apply to virtually any development anywhere. There is no hydrological mapping, no evidence from on-site fieldwork, no quantification relating to hydrological features, and no description of the actual

dimensions, location, or efficacy of any site-specific mitigation measures relating to drainage into the SAC.

1.8.3 Nor does the ES contain any description of site specific measures apart from Figs 1.2.1 to 1.2.9. It should be noted that the following Figs 1.3 to 1.6 are identical to the figures in the Bryn Blaen ES (pages 13-16) (Appendix K) and the only detailed drawing relating to hydrology impacts of construction works is Fig 1.6 of a typical culvert.

1.8.4 It appears that even this generic culvert is not acceptable to NRW. NRW response to the Bryn Blaen application, by Mannon Lewis who is Development Planning Officer North and Mid-wales & Head of Ecosystems, Planning and Partnerships, says "The ES states that closed culverts will be constructed (fig,1.6) where roads need to cross watercourses. The ES does not assess the impact on watercourses or fisheries of installing these structures on watercourses and no information is provided on the nature of the watercourses at the location of the crossings. We recommend that the applicant amends the culvert design to using open botttomed culverts or bridges as we generally advise against the installation of new culverts on watercourses"

1.9 Impacts and Protected Species

1.9.1 The impacts of sediment, pollution and disruption of watercourses on aquatic species for which the SAC is designated have barely been considered. The impacts of sedimentation are discussed in 'Salmon & Trout Conservation: The impact of excess fine sediment on invertebrates and fish in riverine systems: Literature Review' (Appendix L). The White Clawed Crayfish action plan outlines the current status, explaining that water must lack significant pollution and key habitats are fast running headwaters and smaller tributaries where fine sediment is flushed away.

1.9.2 PPW 9 says: 5.5.11 "The presence of a species protected under European or UK legislation is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat" and also explains on page 86 that: "Natura 2000 is

a coherent European ecological network of sites designated for nature conservation. The network comprises Special Areas of Conservation (SACs) hosting the habitat types listed in Annex I and habitats of the species listed in Annex II of the Habitats Directive and the Special Protection Areas (SPAs) classified under the Birds Directive."

1.9.3 ES Table 7.6 says the River Wye tributaries SSSI (which is also part of the Wye SAC), 1km south of the site, "are of special interest for their internationally important populations of White Clawed Crayfish and Otter, and also support aquatic plant communities and fish including Atlantic Salmon, Bullhead and Brook lamprey". Otter is a European Protected Species and the others are Annex II Species.

1.9.4 Table 5.4 of the HRA lists the SAC features of Unit 3 (starting at River Edw 2km north of Franksbridge) showing species or habitats which are KEY: Atlantic salmon, White Clawed Crayfish, Otter, and the watercourse habitat: plain to montane, with Ranunculion fluitantis and Callitricho-Batrachion vegetation. We have seen that White Clawed Crayfish are targeted in the Powys Biodiversity Action Plan September 2002. Table 5.4 of the HRA also lists species which are IMPORTANT but not main focus of SAC management: these are Brook Lamprey and River Lamprey and Bullhead.

1.9.5 Potential detrimental impacts on Atlantic salmon, other fish and White Clawed Crayfish mentioned in Table 5.5 are: occlusion of salmon spawning beds, disturbance to fish spawning and breeding through light and noise, "an **increase** in concrete residue" and "contaminants in watercourses" which could have detrimental effects on aquatic species. Flash flooding could damage the key plant species. The Ecology desk study reports Atlantic Salmon at Coed Mawr, White Clawed Crayfish (Table 6: River Edw, Coed Mawr, Garnfawr (Edw)) and Otter (nine records).

1.9.6 Apart from the references in the desk-top survey, there is **no evidence of investigation or survey of the aquatic species above.** Populations may be present either on site, or within a 500m buffer, in the watercourses upstream from the SAC, as well as in the SAC. We have seen no evidence that these Annex II species were properly considered either by the developer or in NRW's final response. Nor has the possible connection

and continuity between populations on site and in the SAC/SSSI through migration and breeding even been considered.

1.10 Construction Environmental Management Plan

1.10.1 **N**RW asked for a CEMP to accompany the HRA so that impacts of construction on the SAC could be fully assessed but none was provided. When Jayne Foxley (PCC Legal Officer) consulted NRW again, Angharad Wyn Crump, Senior Casework Officer, NRW Development Planning Advisory Service responded on 18.12.15 that NRW was "satisfied as demonstrated in the HRA, that the proposed development will not have any significant effects on any protected sites providing that the mitigation prescribed in the HRA will be implemented in full". She did not require a CEMP until after determination. It appears that the Powys Ecologist just agreed, despite the authority's statutory obligations, better local knowledge and own remit.

1.11 Conclusion

1.11.1 Neither the construction works nor the mitigation measures for this site have been adequately described: the water features and key species have not been surveyed on site or within a 500m buffer and the magnitude of the risks has not been calculated. For all these reasons, a Competent National Authority could not be satisfied beyond reasonable scientific doubt, using the best information, science and technical know-how, that the mitigation in the HRA would protect this particular SAC. Nor could the "implementation in full" of such generic mitigation measures be subject to rigorous monitoring. The development should not be allowed without sufficient information to assess the impact on the SAC. This would be contrary to EIA regulations 1999 as amended Sch. 4 Para 1 and Annex 3 Para 25 of TAN 5. (See Appendices M and N)

2 Ecology Core Study Area

2.1 Extent of Study Area

2.1.1 The delineation of an inadequate and unbalanced Ecological Core Study Area shown in ES fig 7.1 underlies the Ecology Section. This area is coterminous with the blue-line ownership area shown in Fig 1.1. The west and east boundaries of the Core Area are only some 50m (20m subtracting micrositing allowance) from the blade-swept area of T7 and T1 respectively while the north and south boundaries are more distant from turbines and infrastructure. The track to the southern quarry is included but touches the core area boundary. There are three stretches of site access routes which have not been considered in the ecological survey:

- the northern site access from the A44 to the Core Area
- the southern site access from the A44 to the U1574 and onwards along U1574 to Pye Corner
- the main access, partially on the upgraded BOAT to the entrance into the Core Area.

2.1.2 All these routes will need construction work, some of it substantial. The projected overhead grid connection has also been omitted from discussion of ecological impacts of the development. Much of the adjacent land is accessible being open access, common land or crossed by Public Rights of Way. There is no excuse for failure to include all environmental impacts of all parts of the development in the Environmental Statement.

2.1.3 None of the common, falling outside the Core Study Area, has been subject to ecological survey, and impacts of the ancillary works required on the common have not been investigated or assessed. The earthworks required for the triangular junction (1.7.3 above), together with the construction of the access tracks over the common which will meet at the east corner of this triangle, and the realignment of the track (See ES Vol II Fig 1.2.4) descending the west side of the common, make up very substantial construction works. In addition to lying over the course of the Edw, these works will be taking place on extremely wet ground, partially encroaching on an area

of bog/marsh on the common (where the track is realigned), and sited just metres north of a substantial pond, which is shown on Fig 1.2.4. The bog, situated on the common, lies outside the ecology core study area. The risks are clearly considerable but are not addressed in the ES.

2.1.4 SNH Guidance which is generally regarded as best practice makes the point in 2.12 above with respect to birds in 'Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms' (May 2014) (Appendix O). This best-practice guidance describes the Area of Survey Required at 3.3:

- "The survey area and design must adequately cover the entire development area, i.e. the largest possible layout, all the alternative layouts and ancillary structures and works. This includes access tracks; borrow pits, electrical substations and grid connections (both underground and overhead).

- Potential collision risk, habitat loss and displacement could affect birds outwith the proposal site. Therefore, the main breeding and wintering bird survey areas should extend at least 500m beyond the development/planning application boundary. For access tracks and grid connections, the survey area should be 500m either side of the proposed limits of variation of the route."

2.1.5 The county bird recorder has written to Powys County Council on 11.9.14 (Appendix P) that he has recorded Short-Eared Owl, Hen Harrier, Merlin, Peregrine, Goshawk, Sparrowhawk, Buzzard and Red Kite on this site. The SNH guidance (above, Appendix O) says in Annex 1, View Point Hours for these birds are from sunrise to sunset and VP watches should be conducted for two breeding seasons with a minimum of 36 hours total in the breeding season and 36 hours for the non-breeding season. Breeding surveys should extend a further 2km beyond the recommended 500m from the application boundary for all except Goshawk where 1km suffices. Sparrowhawk is not listed.

2.1.6 ES Vol II Figs 7.6 a, b & c show that, although there were some walk-overs beyond the Core Area boundaries, the breeding and wintering survey areas do not fully observe the SNH criteria because they do not observe raptors for 2 years, do not cover an area 500m from all development and the prescribed wider areas for raptors and are only observed for Red Kite breeding sites.

2.2 Failure to identify key conservation species – curlew

2.2.1 Narrowing the survey area has resulted in failure to flag up likely significant adverse impacts. We happen to know of one unacceptable result for curlew but how much is there that we do not know? Curlew are on the BOCC Red list, but are not properly reported in the survey findings. They are mentioned in ES p7-33 as "in addition to" (and therefore not part of) the Brown and Shepherd surveys. They are also cited by Stuart Vendy of Cunnane in his reply (Appendix Q) to Powys Ecologist, Hannah Powell's concerns that impacts on curlew had not been considered. He says "two pairs of curlew were recorded, one either side of the proposed access track, at Pye Corner. These birds were at some distance from the existing track (at least 150m distant). It is acknowledged that no mitigation has been proposed to prevent disturbance impacts on these birds. It is considered that such impacts are unlikely given the distance of the birds from the existing track and the relatively minor nature of widening operations. However, it is proposed that construction operations in relation to the track in this area will not be carried out during the curlew breeding season (roughly April through to June)."

2.2.2 The distance of "at least 150m" is not supported by evidence produced in either the ES or Technical Appendix 7.4. The SNH guidelines require a 520m wide survey area either side of the track (allowing 20m for micrositing). The alterations to the track are not "relatively minor" as they require 2 culverts and significant cut and fill, especially at Pye Corner (fig.1.2.3). Also, disturbance will be cumulative because a track round the north and west side of the common is also to be upgraded. Disturbance will last

the entire 12 months of construction as the northern route is to be used for all incoming construction traffic and the southern one for AILs to enter and both AILs and all construction traffic to exit.

2.2.3 The UK population of curlew is of international importance. The importance of their conservation can be seen in the following extracts from the RSPB website (Appendix R): "the UK is arguably the most important country for curlews in the world" and "The RSPB, along with the UK's statutory nature conservation agencies, believe the curlew should now be considered the UK's highest conservation priority bird species and a recovery programme is urgently required."[2] A curlew conference was held in Builth Wells on 24th January 2018, hosted by Natural Resources Wales, to discuss the plight of curlew. It was reported that curlew numbers fell by 82% between 1993 and 2006 and the birds could be lost to Wales entirely within decades unless action is taken (Appendix S)[3].

3 Vantage Point Surveys

3.1 Scottish Natural Heritage Guidance

3.1.1 According to the SNH 2014 (Appendix O) guidance above, at 3.8.1 "VP survey is designed to quantify the level of flight activity and its distribution over the survey area. Its primary purpose is to provide input data for the Collision Risk Model (Band et al. 2007), which predicts mortalities from collision with turbines. Data can also be used to provide an overview of bird usage of the site, which may help to inform an overview of potential disturbance and displacement. However, the data gathered on target species other than those for Collision Risk Modelling may be biased (see section 3.8.2.1). Where new above-ground grid connections are planned, the proposed connection route should be covered by VP observations to assess potential collision risk."

[2] https://www.rspb.org.uk/our-work/conservation/projects/curlew-recovery-programme/
[3] http://www.bbc.co.uk/news/uk-wales-42802051

3.1.2 Paragraph 3.8.5 adds “watches should be tailored to the ecology of the target bird species involved” and “The watches should be stratified according to the ecology of the target species present and should give a representative sample of site use. “

3.1.3 Section 5 says “Details must be provided in tabular form for all forms of survey work conducted, including dates, times, observer(s), and weather. An appendix to the environmental statement containing a summary of all the VP survey watches and their results and worked examples of collision risk calculations must be provided to allow collision risk estimates to be independently checked. Examples of VP survey watch and survey visit summary tables are given in Annex 2.”

3.1.4 The ES says Identification of Target Species for Vantage Point Surveys was as per SNH guidance and included species listed on: Annex 1 of the EC Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), Red-listed Birds of Conservation Concern and migratory waterfowl (Appendices T, U, V). There is no account of why the 5 recorded during the winter walkover were selected for priority. These five are lapwing, golden plover, red kite, kestrel, and starling. Goshawk (ECBD & WCA), peregrine (ECBD & WCA), and sparrow hawk (ECBD) and barn owl (WCA), as well as curlew, were recorded but not included as target species.

3.2 Fieldwork carried out and observation of Starlings

3.2.1 Comparison of VP surveys through the survey period suggests that there was little consensus among recorders about which species they were meant to record: for instance Reed Bunting, Linnet, Redshank, Skylark, Fieldfare, Marsh Tit are listed in October 2011 but in October 2012 35 Redwing, presumably recorded because this was a sizeable flock, are the only birds which are not either raptors or among the “Five Target Species”.

3.2.2 Annex 2 of the SNH guidance gives examples of VP survey results (v O Page 36) which we recommend for comparison with the results in Technical Appendix 7.4 of the ES.

We have also included our own table summarising the results for starlings to isolate the starling records in an easy format.(Appendix W)

3.2.3 2,600 starlings are recorded from VP2 on 12.12.11 between 13.00 to 16.00h preparing to roost. The next highest number is of c2,200 starlings on 23.2.12 from 14.02 to 18.30h. This is the only VP watch to extend into dusk. The record says "flocks of from 100 to 1200, flying from all over surrounding area to congregate E. of Bwfch-y-cefn. See note below on activity on site." The activity note says "NB: Starlings congregated initially at A. with many continuing to forage. On the arrival of 13 (2000+) they moved to B with many continuing to forage. Very soon flocks arrived from all directions to double this number (c5000). The flock now became airborne, as further flocks arrived. The size again approximately doubled to 10,000 or more birds. Initially many birds plunged into the small plantation at C, but when others began to fall into the plantation D, these formed a river of birds flying low from C to D until the whole congregation were resting at D"

3.2.4 None of the ecology figures identify these alphabetical locations. The ES 7.35 says "a notable record was of a large Starling Sternus Vulgaris roost, which was situated in a coniferous plantation, just outside the core study area boundary in the south east. This was estimated to hold approximately 10,000 birds. In order to positively quantify this, and to establish flight lines as birds flew into the roost site, a targeted dusk roost survey was carried out in January 2013. In general, birds appeared to reach this location from the north east and none were recorded crossing the proposed site. Despite this it is likely that birds will cross the site on occasion to reach this roost location."

3.2.5 A small part of this plantation is actually in the study area and the part outside the study area comes within 60-70m of T7 and about 25m from the access track across common land. There are no field notes giving view-point or observer numbers or bird numbers for the targeted roost survey. There are also no data on weather conditions or flight behaviours of raptors which typically prey on starlings. Our own observations with people at different locations (Blaen Edw and the BOAT north of the plantation)

during the arrival of flocks prior to roosting, show that it is impossible to see all the incoming flocks from one place.

3.2.6 Although the SNH guidelines recommend tailoring of VP surveys to target species behaviour, there is no single VP survey during the winter at dawn when the starlings might be leaving the roost. Starlings leave early to avoid the raptors which wait for them to rise from the roost and therefore this is an important time for both numbers and potential collisions for starling and swooping raptors. There are only two VP surveys between 8.30 and 9.25h. in the entire year, including in the summer when dawn is early, and there is only one lasting through dusk, and that is in the winter. This is a general failing for Target Species and raptors in general. SNH Guidance (Appendix O) Annex 1 on VP surveys requires raptor surveys between sunrise and sunset (now for two years). It is self-evident that any survey of starling roosting behaviour should include dawn and dusk. The poor coverage of key times means that no credence can be given to numbers data or to the collision data either for starlings or raptors.

3.2.7 The Cunnane letter (Appendix Q) above also covers starlings. Hannah Powell, Powys ecologist had said "The status of starling, an RSPB red list bird and a priority BAP species, at the site needs to be re-evaluated taking into account the Radnorshire Bird Report data and the potential impacts and collision risk reassessed (Appendix X)." Stuart Vendy of Cunnane responded "although numbers are large, the roost is still only a relatively small percentage of the overall numbers in Radnorshire and Powys as a whole. It is widely accepted by SNH and others that the Collision Risk Model is not good at estimating collision risk for flocking birds. However, first hand observation of the roost strongly suggests that the risk of collision is very low, since birds were found to be flying at a low height. They were also found to arrive at the roost from directions other than through the proposed wind farm. For all these reasons, it is considered that additional collision risk assessment is unnecessary."

3.2.8 The directions of flight are inconsistent with the field-note quoted above which says that flocks arrived from all directions. The statement that birds were flying at low

height may apply to much starling behaviour, but views of incoming flocks and of large murmurations show starlings flying far above 28 metres (lowest point of turbine blade-sweep). The ES data does not mention a starling murmuration but the Llandegley Rhos site is famous for this phenomenon. It is also obvious that birds changing height across the 28m mark must pass through the "collision window", as will the raptors chasing them.

3.2.9 Cunnane have no evidence that the roost numbers are "only a small percentage of the overall numbers in Radnorshire and Powys" since the ES states on p 7-52 that it is not known what the wintering population of Powys is. The ES works out an estimate of a minimum of many hundreds of thousands of birds for which there is also no evidence. An on-site estimate of 10,000 birds is compared with 37million birds for the whole British wintering population. However this figure comes from Lack, The Atlas of Wintering Birds in Britain and Ireland (1986) since when starling populations have declined drastically.

3.2.10 The ES continues "the roost that was located close to the study area boundary is likely to be transient and many other suitable roost locations exist in the vicinity. For these reasons, Starling has been rated as of District level of value."

3.2.11 The ES population figure is laughably low and the records of the County Bird Recorder are dismissed. Stuart Vendy says "Birds of Radnorshire", written by Pete Jennings the County Bird recorder is "largely irrelevant" because "nothing of significance will have been missed" by a comprehensive bird survey to recognised standards. We have described the failures in the survey methods.

3.2.12 Firstly, Birds of Radnorshire, is written by the County Bird Recorder who is an acknowledged expert (Appendix Y) with extensive field experience of the birds of Radnorshire and field skills likely to be far superior to those of any other person, including the ecologists employed for these surveys. This book should have been a prime source for the ADAS desktop survey and design of the ecology research. Secondly, it is widely recognised that local bird recorders provide much of the basic

published data on which environmental impact assessment relies. SNH 2014 recommends the Scottish Ornithologists' Club Local Recorders and NRW recommends advice from "third sector nature conservation organisations such as the local wildlife trust, RSPB, etc." (Caroline Moscrop in the NRW response to PCC on 22.12.14 Appendix H). Some of the most frequently quoted British Trust for Ornithology information is based on volunteer observations.

3.2.13 The richness of information in the Birds of Radnorshire entry for starling can be contrasted with the information in the ES. Birds of Radnorshire p 251 (Appendix Y above):

"The main roosting area in Radnorshire is in the conifer plantations of the Llanfihangel Nant melan/Llandegley Rhos area which has been used at least since the late 1970s. The plantation by Llandegley Rhos held 20,000 birds on 16th January 1978 and 29th November 1983 had 10-50,000 occasionally between November and March in most winters between 1986 and 2000. Plantations in the nearby Fforest Inn area used to hold most of the birds with a small wood in Llnanfihangel having a roost of 10-60,000 birds for most of the time during the winters between 1984 and 2002. However, shooting of the roost took place at times in an effort to persuade the birds to go elsewhere, which they have done for the most part ever since.

3.2.14 Since 2003, the roost has largely moved to Llandegley Rhos and steadily increased in numbers with counts at dawn and dusk producing average figures of between 135,000 and 180,000 birds. It is likely that even more birds use the roost on occasion especially in early November and late February/early March soon after the main arrivals from the continent and prior to emigration. The highest counts are made during periods of fine, calm, weather and the fewest during very windy, wet and stormy, conditions when birds presumably find somewhere closer to their daytime feeding areas to spend the night. The current age and planting density of the plantation seems to be ideal for roosting Starlings and although predators such as Hen Harrier, Merlin, Sparrow hawk, Goshawk and Short-eared Owl are in attendance most evenings, the site is undoubtedly safer than ones used in the past.

3.2.15 At least 65% to 75% of the birds now come from areas to the east of the roosting area and this seems to account for most of the increase in numbers as many fewer did so prior to 2001. Birds not only come from all parts of Radnorshire but also from well into Herefordshire with flight lines traced at least as far as Shobdon. In general birds come in from a radius of c.25km."

3.2.16 Peter Jennings' ringing histories suggest that the wintering flocks of starling found in Radnorshire in winter include birds which breed locally in England and Wales as well as birds from various parts of the continent. Therefore the fate of these flocks is relevant to the local conservation of this red listed bird.

4 Significance of Impacts

4.1 A further problem with the data on impacts on avian ecology, and indeed other ecological topics, is with the assessments of Significance of Impacts. The ES P7-13 cites IEEM 2002 Guidelines superseded by IEEM 2006 Guidelines but says "it was felt that the earlier guidelines provide more explicit criteria and a more methodological approach".

4.2 The ES proceeds to use a matrix based on categories of "ecological value of a species and/or habitat" based on the administrative level of protection drawn from IEEM 2002 and reproduced in Technical Appendix 7.1. These categories of international/national/regional/county/district/neighbourhood or parish are combined with 5 categories of level of change from Major negative to Major positive (Table 7.4).

4.3 Application of this method is discussed in IEEM 2006 (Appendix Z) 4.53 and 4.54 which concludes that the terms are subject to individual interpretation and "this type of matrix always tends to place negative impacts on a feature of local value into a low significance category. This can downplay local values for biodiversity".

4.4 The most recent guidance: IEEM 2016 (Appendix AA), discusses the problems of subjective evaluations and the precautionary principle stating (5.36) "In cases of reasonable doubt,

where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EcIA" and also says (5.38) "This guidance avoids and discourages use of the matrix approach."

4.5 This superseded 2002 approach is useful to the developer in aiding the finding of no significant ecological impacts of the wind farm project.

Thus the ES concludes:

ES 7.14 says "Following the implementation of suitable mitigation measure, it is not anticipated that there will be any significant residual constructions effects."

ES 7.16 says "Mitigation of Operational and Long-term Effects is not considered necessary for:

- Designated sites (negligible effects)
- Habitats (negligible effects)
- Fauna: birds or bats (not significant)"

4.6 Looking at bird examples, we have seen that wintering Starlings are awarded "district value", the reason being that they are a small proportion of the Powys population, a statement based on a mixture of outdated evidence and surmise. Referring to Table 7.4 we see that nothing at District/borough scale can be significant even if the whole population is destroyed. Even less does it matter if you kill a peregrine, although it may be the last peregrine in the world, because this is given Parish/neighbourhood level. This level is chosen for a different reason: because "association with the site was irregular and sporadic". Therefore we have an arbitrary judgement which may be based on fanciful population statistics, or on whether individuals of a species were actually captured by the survey, irrespective of their conservations status. All the ES must do, to ensure there are no significant impacts, is make sure nothing is awarded any level above District.

4.7 We cannot agree that the impact assessment on avian ecology is robust. Nor do we think that any of the ecology conclusions can be assessed without critical information which has been postponed until after this Appeal is determined.

5 Critical information postponed until after permission obtained

5.1 Tan 5 (Appendix N) 4.3.2 says "To facilitate the efficient and timely processing of planning applications developers should ensure that applications are carefully prepared with all relevant information included and all material considerations addressed in the layout, design and related access, drainage and infrastructure. Landscaping proposals should be included together with any measures designed to avoid, mitigate or compensate for potential adverse effects on nature conservation. Any proposals for enhancement of nature conservation interests should also be included. These matters should not normally be left for later submission under conditions imposed on any permission given, because they will be material to the determination of whether planning permission should be granted."

5.2 NRW (Appendix H) requested an HRA, a Draft Construction Environmental Management Plan, incorporating a Protected Species Protection Plan, to be submitted prior to determination to accompany the HRA (p4 Para 4 and p5 Para 1) and advised that the presence of a protected species is a material planning consideration, alerting the developer to TAN 5. NRW did not mention aquatic EPS.

5.3 PCC Ecology (Appendix X) requested an extensive habitats restoration scheme to be included in the proposal (p3 Para 2), an HRA, and a CEMP adding "All of the above information is required prior to determination".

5.4 No CEMP, PSPP or Habitats Restoration Scheme have been submitted. Given the extent of earthworks proposed, including the construction or upgrading of 3 separate access routes from the A44, we do not consider that the net ecological impacts of the proposal construction can be properly assessed without a CEMP, PSPP and Habitat Restoration

Plan. These would enable determination of whether the measures designed to avoid mitigate or compensate for potential adverse effects on nature conservation are adequate to ensure maintenance, restoration and enhancement of biodiversity as required under Part 1 S6 of the Environment (Wales) Act 2016.

5.5 Most of the measures described in the ES, are generic and could apply to any wind farm site. They do not address the particular features of this site as would the Plans above. It is difficult to assess the relation between the land-take of 99,874m² of permanent loss of habitat and land disturbance (changed levels, banks, earth storage areas etc.) which is likely to degrade habitats and displace many natural species (ES 7.12.3).

5.6 No restoration or compensation is offered until the later letter from Stuart Vendy (Appendix Q). This offers "maximum habitat restoration and ecosystem services delivery….in the event of consent" but is vague about what measures could be undertaken on any land belonging to involved land-owners, preferring the option of the common land which may be beyond the Developer's authority.

5.7 The letter also suggests felling of the starling roost location to make the roost re-locate. Not only was the significant pollution episode in the Edw associated with felling of part of this self-same plantation, but the plantation is not within the ownership boundary.

5.8 NRW and PCC ecology (albeit not the individuals who requested the plans) appear to have agreed that the Habitat Restoration, Construction Management and PSPP requested prior to determination are not required although PCC does say appropriate compensation habitat would need to be provided for felling the starling-roost trees "to support wild birds through the planning process".

5.9 We consider that all the information in these plans should have been available before this Appeal is determined in keeping with 4.3.2 TAN 5 and EIA Regulations 1999 as amended Schedule 4. 7 (Appendices N and M). "A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for

example the preparation of a post project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases."

6 **Conclusion:** I have already mentioned our concerns regarding impacts on the SAC. We find impacts on avian ecology inadequately identified, investigated and assessed in the developer's documents such that the evidence cannot support ES conclusions. We note also that all conclusions on ecological impacts are fundamentally flawed by the adoption of an inadequate Core Study Area, and the postponement till post determination of submission of key environmental information. Ecological evidence provided is insufficient and unreliable. It cannot support the ES conclusions regarding the acceptability of harms to the ecology of this site.