



Adroddiad

Report

Gan/by David Wilks BSc(Hons) DipEM MRTPI MIMgt FRSA

**Arolygydd penodwyd gan Cynulliad
Cenedlaethol Cymru**

**an Inspector appointed by the
National Assembly for Wales**

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TOWN AND COUNTRY PLANNING ACT 1990

POWYS COUNTY COUNCIL

**CO-JOINED INQUIRIES INTO
PROPOSED WIND FARM DEVELOPMENTS
AT
MYNYDD CLOGAU, ADFA
CWM LLWYD, CARNO
NANT CARFAN, LLANBRYNMAIR
(including cumulative effects)**

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Cumulative effects inquiry session

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1. PREAMBLE AND PROCEDURAL MATTERS

1.1 Summary of proposals.

1.1.1 This report concerns 3 separate wind farm proposals in the Montgomeryshire division of Powys, together with an assessment of their potential cumulative effects. The inquiries were held under the provisions of the Town & Country Planning (Inquiries Procedure) Rules 1992. In summary, the proposals are as follows:

- (a) **PINS ref: APP/T6850/X/00/513765.** An application by Renewable Energy Systems Ltd for 17 wind turbines, access tracks, meteorological mast, and sub-station at Mynydd Clogau, near Adfa. The application was 'called-in' for determination by the National Assembly under section 77 of the 1990 Act on 1 March 1999.
- (b) **PINS ref: APP/T6850/X/00/513824.** Two applications by National Wind Power Ltd in a location referred to as Cwm Llwyd, near Carno. The first is for 42 wind turbines, access tracks, compound and ancillary development in the vicinity of Mynydd Rhosfach, Cefn Coch. The second is for a 132/33kV sub-station compound, control building and associated works near Cefn Brith, Carno. Both applications were 'called-in' under section 77 on 22 February 1999.
- (c) **PINS ref: APP/T6850/X/00/1050744.** An application by Powergen Renewables Ltd for 16 wind turbines and associated access tracks, control building, monitoring mast and temporary compound at Nant Carfan, near Llanbrynmair. This application was the subject of a section 78 appeal against non-determination. It was 'recovered' for decision by the National Assembly under section 79 of the 1990 Act on 17 October 2000.

1.2 Reasons for 'call-in' and 'recovery.'

1.2.1 The decisions to call-in the Mynydd Clogau and Cwm Llwyd applications were made on the basis that they raised issues of more than local planning importance. In accordance with Rule 6(10) of the Inquiries Procedure Rules, the following matters were stated to be among those which appeared to be likely to be relevant to the consideration of the applications by the National Assembly.

- (1) the cumulative effect of wind farms on the landscape;
- (2) the visual impact of the proposed development(s) on the landscape; and
- (3) relevant national planning and development plan policies.

1.2.2 In the case of the Nant Carfan appeal against the non-determination of that application, it was stated to have been recovered for determination by the National Assembly rather than an Inspector because it "*raised landscape and amenity issues which could have wide effects beyond the immediate locality.*"

- 1.3 The Inquiry sessions and Pre-inquiry Meetings.
- 1.3.1 Originally the 3 wind farm proposals were to be dealt with separately. The Mynydd Clogau inquiry was set to begin on 5 September 2000 [MC Doc. 9(a)] and a Pre-inquiry Meeting was held on 3 August 2000 [MC Doc. 9(b)].
- 1.3.2 However, following notification to the applicants/appellant for the 3 schemes by PINS letter dated 4 September 2000, it was announced at the opening of the Mynydd Clogau inquiry that the National Assembly had now indicated that because of their close geographical proximity it was likely that their Planning Decision Committee would wish to consider all 3 applications at the same time. Accordingly, it had been decided that the 3 inquiries into the individual schemes should be co-joined and an additional inquiry session held solely to consider the cumulative effects of the proposals.
- 1.3.3 Mr Alwyn Nixon BSc(Hons) MRTPI was appointed as Assistant Inspector for the Cwm Llwyd, Nant Carfan and Cumulative Effects inquiry sessions.
- 1.3.4 The inquiry session for Mynydd Clogau commenced at Adfa Village Hall on 5 September 2000. It sat for 7 days between 5 – 8 September and 12 – 14 September 2000, including an evening session. It was then adjourned until the final cumulative effects session. An accompanied visit to the site and various viewpoints was held on 15 September and I made a further unaccompanied tour of other viewpoints, including the ascent of Garreg-hir, on 18 September 2000. Other unaccompanied visits were made after the cumulative inquiry session.
- 1.3.5 It was decided to hold a further Pre-inquiry Meeting to discuss arrangements for the remaining 3 inquiry sessions which were to be held at Carno Community Centre. This convened on 24 October 2000 [CL Doc. 5, CD36 and Doc. 7]. There are 2 matters which should be recorded arising from the discussion on issues and procedures for the inquiries at the meeting:
- (a) I stated that although it was a matter for the parties to decide which existing and potential wind farm schemes they might wish to include in a cumulative assessment, it was my view that only existing built wind farms, those approved or under construction, and the 3 inquiry proposals, should be considered.
 - (b) I indicated that I did not wish to hear detailed oral submissions about overhead transmission lines. The reasons for this are set out below.
- 1.3.6 The **Cwm Llwyd** inquiry commenced on 16 January 2001 and sat for 8 days between 16 – 19 January and 23 – 26 January, before its adjournment to the final cumulative session. An accompanied site visit was held on 30 January 2001.
- 1.3.7 The **Nant Carfan** inquiry commenced on 5 February 2001 and sat for 6 days between 5 – 9 February and 13 – 14 February, including an accompanied site visit, before its adjournment to the final cumulative session.
- 1.3.8 The final inquiry session to consider **cumulative effects** and to hear closing submissions in relation to all 3 proposals commenced on 27 February 2001. It sat for 8 days between 27 February – 2 March and 6 – 9 March. A list of agreed unaccompanied visits to some 50 viewpoints and localities following the inquiry was

prepared, but due to the Foot and Mouth Restrictions then in force in Powys many of these could not be undertaken until late August and early September. This delayed the submission of the report. In all, the inquiry sessions sat for 29 days and an evening, with a further 2 days of accompanied visits. In addition, I spent a total of 5 days on unaccompanied visits by car and on foot touring the agreed viewpoints and surrounding localities.

1.4 Environmental Impact Assessment.

1.4.1 At the inquiries, environmental statements under the Town & Country Planning (Assessment of Environmental Effects) Regulations 1988, as amended, were produced in respect of the Mynydd Clogau [MC Docs. 1 – 5A] and Cwm Llwyd proposals [CL Doc. 3]; and under the (Environmental Impact Assessment) Regulations 1999 in respect of Nant Carfan [NC Doc. 1]. This included additional material produced relating to responses to the comments of statutory consultees and to provide specific information requested under Regulation 21 of the 1988 Regulations and Regulation 19 of the 1999 Regulations. The foregoing environmental information has been taken into account in arriving at my conclusions and recommendations.

1.5 Transmission lines and Grid connection

1.5.1 Several parties raised objections to the electricity transmission lines required to connect the wind farms to the distribution grid. As stated in paragraph 1.3.5 of this report I resisted hearing detailed submissions on this matter at the inquiry, for the following reasons. First, although a potential or preferred route for transmission lines has been referred to in very broad terms for each of the applications, it was not included as part of the development or site applied for. Second, most overhead lines are dealt with under separate legislation by application to the DTI under section 37 of the Electricity Act. The section 37 procedure does make provision for Local Planning Authority and public representations to be made and requires the applicant to have regard to preserving natural beauty, wildlife and certain physical features, and for mitigation measures. Accordingly, it seems unnecessary to duplicate that procedure. Third, even if I was prepared to deal with the issue as a direct planning consequence of each wind farm proposal, there were no definite routes or construction details of the lines available for me to consider. For example, the NC grid connection ‘corridor’ shown in the inquiry evidence varies between 1 – 4km in width. The lack of certainty also makes it difficult to consider conditions, the degree of control by the applicant over land outside the site, and any necessity for sections of line to be placed underground. In addition, any conclusions by me could be seen as prejudicing proper consideration of a section 37 application.

1.5.2 However, I have briefly mentioned the likely routes as outlined in the evidence and the main concerns of objectors in the body of the report and my conclusions.

1.6 Other procedural matters

1.6.1 A procedural matter was raised at the inquiry opening in respect of the notice of an application under section 65 of the 1990 Act affecting the Cwm Llwyd sub-station application M99/117. Dr A Cresswell of Llanerch, Carno, claimed to own part of the track area at the entrance off the Class C road and stated that she had not been served with the requisite notice [CL Doc. 55]. This matter was not resolved, but I noted that

a certificate in the prescribed form had been served on the person who the applicants believed to own the land. Even if this was an error by the applicants, then taking account of the fact that Dr Cresswell was aware of the application, was present at the inquiry and was not deprived of making representations, I stated that I did not consider that there was any prejudice which should prevent the inquiry from continuing.

1.6.2 A procedural objection was raised by Dr L Mytton, Llanerch, Carno, under Article 6 of the Human Rights Act 1998 on the basis that the inquiry sessions did not constitute a fair and impartial tribunal [CE Doc. 38/1]. In summary, the objection was based on the fact that planning policies are formulated and applied by the political executive. Dr Mytton pointed out that I had been appointed by the same Authority which would also make the final decision on the wind farm applications. He considered that the UK planning process is both an affront to natural justice and at odds with the European Convention on Human Rights. It should be noted that the objection did not cite any other rights under Article 6 in connection with my conduct of the proceedings or suggest there were any procedural matters which I had failed to address.

1.6.3 The objection is a matter of law on which I shall not express a view. However, it is necessary to record my reasons for continuing with the inquiries. There had been no attempt by the objector to apply for judicial review, nor was any such intention indicated. I reminded the inquiry about the 'test' cases involving Alconbury Developments Ltd, Holding & Barnes plc, and Premier Leisure (UK) Ltd, which were being dealt with in the Courts at the time of the inquiry. I stated that I had been appointed to hold the inquiries and that I intended to proceed, pending any interpretation by the Courts of the consequences of Article 6, if any. No objections were raised by any other party to my decision. The National Assembly will be aware that after the closure of the wind farms inquiries the judgement on the legal cases referred to above was issued by the House of Lords on 9 May 2001.

1.7 Format of report .

1.7.1 This report sets out the general position of Powys CC in the inquiries; the comments by applicants and objectors on national renewable energy policies which form a common background to all the proposals; and the general planning policy background. A further section deals with information on public attitudes to wind farms which is a common issue affecting all the proposals. The report then deals with each individual site in turn, giving the gist of the evidence on a topic basis. The potential cumulative effects arising from various combinations of the wind farm proposals are then reported separately, as are submissions made on Human Rights. Appendices comprising lists of appearances, documents, plans and photographs for each inquiry session are included after the section of the report dealing with that session. A further appendix appears after the section on Human Rights dealing with comments made by the parties on visual analysis techniques. The final sections of the report contain my conclusions, followed by my recommendations

1.8 Acronyms and Abbreviations.

BWEA	British Wind Energy Association.
CCW	Countryside Council for Wales.
CEWT	Cumulative Effects of Wind Turbines (ETSU sponsored report).
CPAT	Clwyd – Powys Archaeological Trust.
CPRW	Campaign for the Protection of Rural Wales.
CROW Act 2000	Countryside and Rights of Way Act 2000.
CUM	Conservation of Upland Montgomeryshire.
DTI	Department of Trade & Industry.
ES	Environmental Statement (EIA Regulations 1999).
ESA	Environmentally Sensitive Area.
ETSU	Energy Technology Support Unit (DTI sponsored unit).
MLA	Montgomeryshire Landscape Assessment (MDC 1992).
MWT	Montgomeryshire Wildlife Trust.
MLP	1995 Montgomeryshire Local Plan (Deposit plan as modified).
NFFO	Non Fossil Fuel Obligation.
NWG	DTI sponsored Working Group on Noise from wind turbines.
NWP	National Wind Power Limited.
PINS	Planning Inspectorate Executive Agency.
PR	Powergen Renewables Ltd.
PPG	Planning Policy Guidance note (England).
PPW	Planning Guidance (Wales): Planning Policy [1999].
Powys CC	Powys County Council.
PSP	Powys County Structure Plan (Replacement)1996.
RES	Renewable Energy Systems Limited.
RSPB	Royal Society for the Protection of Birds.
RUPP	Road used as a public path.
SLA	Special Landscape Area.
SMR	Sites and Monuments Record.
SNPA	Snowdonia National Park Authority.
SSSI	Site of Special Scientific Interest.
TAN	Technical Advice Note (Wales).
UDP	Unitary Development Plan.
WCA 1981	Wildlife and Countryside Act 1981.
WHO	World Health Organisation.
WOC	Welsh Office Circular.
WTB	Wales Tourist Board.
ZVI	Zone of Visual Influence.
1990 Act	Town & Country Planning Act 1990.

[**Important note** : For convenience, the initials **MC** for the Mynydd Clogau proposal; **CL** for the Cwm Llwyd proposal; **NC** for the Nant Carfan proposal; and **CE** for the final Cumulative Effects session have been used, throughout the report text and in document references].

2. POSITION OF POWYS COUNTY COUNCIL.

- 2.1 The Local Planning Authority, Powys CC, chose not to present a case on planning grounds at the individual Mynydd Clogau and Cwm Llwyd inquiry sessions, although officers did accept an invitation to clarify certain development plan policies. They also participated in discussing possible planning conditions and offered some technical evidence in their role as Highway Authority. They did formally appear and present landscape and visual amenity evidence to the Nant Carfan session and at the final Cumulative Effects session.
- 2.2 The content of their planning evidence to the inquiries is contained within the relevant sections of this report dealing with the merits of the proposals. However, in summary, their position was stated to be that they neither supported or objected to the Mynydd Clogau or Cwm Llwyd proposals. In the case of the Nant Carfan appeal they did raise an objection on grounds of local visual impact, but emphasised that they had made no resolution to recommend that the scheme be refused.
- 2.3 As a result of the foregoing actions, the Council were perceived by some as not taking a sufficiently positive role in the inquiries having regard to their duty as Local Planning Authority. In response, they raised several issues relating to the timing and manner of the involvement of the National Assembly in dealing with the applications which they felt had affected their position. It is appropriate to set out the gist of the Council's submissions on these issues at this stage of the report as they are largely of a procedural nature.

The material points were:

- 2.4 It appears that the call-in decisions for Mynydd Clogau and Cwm Llwyd are based on a view that they raise matters of more than local importance. It is difficult to find the consistency of this with past decisions not to call-in the large wind farm schemes now existing at Trannon Moor (Carno Wind Farm) and Llidiartywaun & Penrhyddlan (Llandinam Wind Farm).
- 2.5 With regard to timing, the Council received the application for Mynydd Clogau on 11 September 1998. An Article 14 'holding' Direction which had been placed on an earlier application in 1996 remained in force, as confirmed by a letter from the Welsh Office dated 23 October 1998. The new application was called-in on 1 March 1999, some 3 months after the expiry of the consultation period for the application. The Council consider this was insufficient time for them to have assessed the application, prepared a committee report and arranged for a site visit and committee meeting. Also, some important consultation responses had still not been received and did not arrive until after the Pre-inquiry meeting. Consequently, on 5 March 1999 the Council's Planning Committee resolved that it would not be represented at any inquiry into the wind farm proposal and that no case would be presented [CL Doc. 12].
- 2.6 The Cwm Llwyd applications were received by the Council on 21 December 1998 and called-in by the National Assembly on 23 February 1999. At the same time an Article 14 Direction was made precluding permission being granted for any similar type of development affecting the site. As with Mynydd Clogau, the Council's Planning Committee resolved not to present a case to the inquiry.

- 2.7 It should be noted that it was not until 18 months after its call-in that the Mynydd Clogau inquiry began on 5 September 2000. It was only then that the Assembly announced the decision to co-join the 3 wind farm inquiries. The Cwm Llwyd inquiry did not begin until 16 January 2001, also 18 months after it had been called-in. The Nant Carfan inquiry began on 6 February, some 7 months after the issue of its Article 14 Direction. It can be seen that there were inordinate delays by the Assembly in calling-in and progressing the applications to inquiry.
- 2.8 During this lengthy period the applications were effectively taken out of the hands of the Local Planning Authority and dealt with by the Assembly on a day-to-day basis. It was they who liaised with the applicants and dealt with additional information. Replies to outstanding consultations were directed to the Assembly and not the Council. The Council were not made aware by the Assembly of the progress of the applications and so it was not possible for officers to report fully to their members. After call-in the Council could not make a binding decision on the applications and any consideration would, at best, be incomplete. It is, therefore, not surprising that the Council adopted a non-committal position at the inquiries in respect of the call-in applications.
- 2.9 The Nant Carfan application was received by the Council on 24 January 2000, but not completed until deposit of the fifth volume of the Environmental Statement on 14 March 2000. On 14 July 2000 an Article 14 Direction was served by the National Assembly and the appeal against non-determination was made on 25 September 2000. It is interesting to speculate whether the Nant Carfan applicant effectively forced the Assembly to consider the proposal together with the other 2 schemes by appealing against non-determination. Otherwise their application might also have become stuck in the Assembly 'log-jam' for the seemingly obligatory 18 month period.
- 2.10 The decision of the Council not to appear at the Mynydd Clogau and Cwm Llwyd inquiries was taken long before the Assembly decided to co-join the 3 inquiries at the beginning of September 2000. That belated decision gave rise to a different set of circumstances, particularly the proposed session to deal with cumulative effects. As a result, the Council decided to commission a Consultant to prepare a report on cumulative effects. This was done and on 5 January 2001 the Planning Committee resolved to support the report's findings and make representations on that basis to the cumulative effects inquiry session [CE Doc. 13]. This was carried out in a neutral manner without taking an overall view whether the committee was in favour or against any of the proposals. The Consultant's report concluded that any of the 3 proposals built in isolation would not contribute to unacceptable cumulative impact, and that in combination the least cumulative effects would arise from Nant Carfan and Mynydd Clogau.
- 2.11 There has been comment that the Council's decision to lodge an objection to Nant Carfan because of local visual impact was irreconcilable with the Planning Committee's agreement with their Consultant that there was no unacceptable cumulative visual effect arising from that proposal alone. It is submitted that this is not correct. This is because the objection was mainly concerned with local views of Nant Carfan as generally seen in isolation from one broad direction, whereas the cumulative assessment related to viewpoints beyond that immediate locality and included other wind farm schemes.

- 2.12 Finally, the Council do have a concern that consideration of their planning policies which are pertinent to the issues raised at the inquiries, as expressed in the Montgomeryshire Local Plan, is constrained by the holding Direction on that plan issued by the Assembly in respect of settlement issues. The Council believe they have complied with the Direction, but it is still in place after some 3.5 years. As a result of this further example of unreasonable delay by the Assembly the wind farm inquiries have been deprived of the benefit and status of an adopted Local Plan.

3. RENEWABLE ENERGY ISSUES

- 3.1 This section summarises the main points put by the parties concerning Government policy, objectives and targets for the development of renewable energy sources, particularly as it relates to onshore wind power. The cases put by RES, NWP and PR were very similar as regards the overall thrust of Government policy, with common reliance on many documents, statements and actions. In view of this the main points of their evidence on this topic are reported jointly to avoid undue repetition. Points concerning the specific contribution that each proposal would make towards renewable energy targets and to greenhouse gas emissions savings are summarised in later sections dealing with each individual scheme.

CASE FOR THE APPLICANTS/APPELLANTS & SUPPORTERS

- 3.2 UK Government policy and targets for the development of renewable energy sources highlight the urgent need to implement additional renewable energy schemes as quickly as possible. This is an important consideration that lends significant weight to the case for each of the 3 wind farm proposals. Government policy on renewable energy has evolved over recent years from the 1988 Department of Energy Paper 55 "Renewable Energy in the UK: the Way Forward." Recent Government reports and statements reflect increasing concern about the environmental threat presented by climate change. The parties variously refer to a range of Government reports, consultation documents, statements and measures which chart the Government's developing commitment to a programme of development of energy supply from renewables, as part of a more sustainable approach to development and a reduction in climate change emissions [MC Docs 16 (1-9), 17 (8); CL Docs 4-5 (CD19-CD26, CD29), 17 (1-10), 20 (2); NC Docs 2 (CD11-CD13), 9 ((III)-(IV))].
- 3.3 The Government's general aims are to ensure that the energy needs of society are satisfied, consistent with protecting the local and global environment. Its policy is to stimulate the exploitation and development of renewable energy sources wherever they have prospects of being economically attractive and environmentally acceptable.
- 3.4 The Government's sustainable development strategy proceeds from the widely accepted "Brundtland" definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Its sustainable development strategy and environmental and energy policy ("This Common Inheritance: Britain's Environmental Strategy", "Sustainable Development - the UK strategy", Energy Paper No. 62 "New and Renewable Energy: UK Future Prospects in the UK", "New and Renewable Energy: Prospects for the 21st Century") stress the important contribution of renewable energy towards the reduction of greenhouse gases [CL Doc 4 (CDs 19, 20, 22), NC Doc 2 (CDs 11-13)].
- 3.5 Arising from the 1992 Earth Summit in Rio de Janeiro and the 1997 United Nations Climate Change Conference in Kyoto, the European Union adopted a legally binding target in 1998 to cut greenhouse gas emissions by 8% overall against 1990 levels by 2012 (of which the UK's share is 12.5%). Other EU countries have made significant advances in wind power production following the EU Commission White Paper "Renewable Sources of Energy" (November 1997). Current UK Government policy aims to cut UK emissions by 20%. The Government's aim is that the development of renewable energy resources should contribute to meeting this target by producing at

least 10% of the UK's electricity needs by 2010, with an intermediate target of 5% by the year 2003 [CL Doc 4 (CD19)].

- 3.6 This, however, is not the final goal. The Government's aim is to ensure that momentum is retained so that even after 2010 the share of renewables can continue to rise in response to a need to limit greenhouse gas emissions to a sustainable level (DTI Consultation Document "New and Renewable Energy: Prospects for the 21st Century" March 1999) [MC Doc 16 (2); CL Doc 4 (CD23)]. Renewable energy accounted for less than 3% of electricity generated in the UK in 1999. There is therefore a continuing thrust, in Government policy terms, in favour of development of further renewable energy schemes, which will be required to be deployed at a significantly increased rate than hitherto if the Government's targets are to be met.
- 3.7 The Non-Fossil Fuel Obligation (NFFO) scheme in England and Wales has been one of the key Government strategies to achieve climate change emissions reductions since 1991. It obliges regional electricity companies to secure a specified amount of electricity from non-fossil fuel sources. Five NFFO orders for England and Wales were made between 1990 and 1998, and a total of 726 contracts awarded for all renewable energy technologies with a combined installed capacity of some 8756MW. Of these, 247 contracts were for wind energy projects, with a combined installed capacity of 2256MW - around 25% of the total [CL Doc 4 (CD19)]. Wind energy thus represents a significant element of the current renewable energy strategy.
- 3.8 However, only 58 wind energy projects, with an installed capacity of about 390MW, have been commissioned so far (17% of the capacity of wind energy contracts awarded). In Wales, of 76 NFFO wind energy contracts awarded with a combined installed capacity of 739MW, only 14 projects (145MW installed capacity) are operational with a further 8 (9MW installed capacity) having obtained planning permission [MC Doc 16 (10); CL Docs 4 (CD19), 17 (7)]. Irrespective of whether the contribution made by wind power is to follow the DTI "high", "trends continued" or "constrained" scenario [CL Doc 4 (CD23)], onshore wind turbines plainly have an important part to play in meeting renewable energy targets.
- 3.9 Current Government policy, expressed in "New and Renewable Energy: Prospects for the 21st Century - Conclusions in Response to the Public Consultation" (February 2000) [CL Doc 5 (CD 25)], intends a change in direction away from the NFFO system towards one of imposing a renewables obligation through the Utilities Act 2000 on the electricity suppliers. Through this, suppliers will be required to purchase increasing amounts of their electricity from renewable sources, in line with the target figure set by Government. Transitional arrangements will be used to support schemes already contracted through NFFO 3, 4 and 5. In parallel with this, wind generated renewable resources will be exempt from the climate change levy which is to be imposed on energy used by industry, commerce and the public sector from 2001.
- 3.10 In setting out the technology priorities for the new programme of support for research and development, the report identifies the timescale within which the different technologies can be expected to contribute to the target figures. In the "near term" category (those closest to being competitive on price with traditional sources of power generation) are waste and some biomass residues; landfill gas; onshore wind; hydro; and passive solar. Offshore wind is in the category of technologies which could contribute by 2010. It will be needed to meet the Government's target of 10%

of energy from renewables, but will not contribute significantly to the 2003 5% target.

- 3.11 The report also notes the important role of planning in *"helping to deliver the Government's target and goals for renewable energy and climate change, which are central to achieving sustainable development, while continuing to protect the countryside"*. It advocates a positive strategic approach to planning for renewable energy, including targets for renewable energy provision from the regional level downwards, and calls for regional renewable energy assessments to set the framework for a more strategic land use planning approach at regional level to assist local decision-making. These have yet to be completed.
- 3.12 The DTI "Preliminary Consultation Paper on the Renewables Obligation" (October 2000) reaffirms the Government's target to produce 5% of the UK's electricity supply from renewable sources by 2003 and 10% by 2010 [CL Doc 5 (CD26)]. At the end of 1999 renewable energy sources represented 2.8% of total electricity generated in the UK. The Government expects the target for 2003 to be met by existing capacity and new capacity built under NFFO 3, 4 and 5 contracts. The new renewables obligation, expected on all electricity suppliers in October 2001, is intended to stimulate the additional capacity required to move from 5% to 10% by 2010.
- 3.13 Recent pronouncements by the National Assembly for Wales also refer to sustainable development and renewable energy. Section 121 of the Government of Wales Act places a duty on the Assembly to promote sustainable development. This duty is reflected in recent consultation documents and policy statements including "Better Wales", the National Assembly for Wales' strategic plan (January 1999); "A Sustainable Wales - Learning to Live Differently" (January 2000), "A Sustainable Wales - Measuring the difference" (November 2000) [CL Docs 4 (CD21), 5 (CD 29), 17 (11, 12), 19 (2), 20 (3)]. These recognise the importance of developing renewable energy sources in Wales as part of a sustainable approach to development and in particular the potential contribution made by renewable energy sources to a reduction in greenhouse gas emissions. The Assembly has recognised the need to develop a strategic framework for energy developments in Wales.
- 3.14 Draft indicators for sustainable development in Wales contained in "A Sustainable Wales - Measuring the Difference" include targets to contribute towards the UK targets for reduction in greenhouse gas emissions and for 5% of Welsh electricity to be generated from renewable resources by 2003. An Assembly plenary debate motion carried on 10th May 2000 confirmed its commitment to working in partnership with the UK Government to deliver the Kyoto target of a 12.5% reduction in greenhouse gas emissions below 1990 levels by 2008-2012 and the domestic goal of a 20% CO₂ emission reduction below 1990 levels by 2010.
- 3.15 In his keynote address to the British Wind Energy Conference 1999 [CL Doc 17 (2)] the Environment Minister, the Rt. Hon. Michael Meacher confirmed that the Government sees onshore wind as having a contribution to make, alongside offshore wind and other renewable energy sources, to the achievement of renewable energy targets. He stated:
"Offshore wind is seen by many as the practical way of addressing concerns about the impact on the landscape... Certainly, it is likely to be increasingly significant in the energy supply mix. But it must not be seen as an alternative to onshore wind - I believe we will need them both."

- 3.16 Moreover, although the contribution of an individual wind turbine installation to global greenhouse emissions savings may be small, this does not invalidate the benefits of a particular scheme in that respect or in energy terms. The Minister stated:
"Renewable schemes are by their nature smaller than conventional power stations. But we must not fall into the trap of dismissing them on the grounds that an individual scheme can only supply a tiny fraction of UK energy needs. I think a crucial approach is to see schemes in a local, rather than national context."
- 3.17 The thrust of Government policy on the development of renewable energy technologies in general and statements concerning wind energy in particular, thus confirm that there are important reasons why schemes such as those proposed here should be approached positively. The need to develop renewable energy sources and reduce greenhouse gas emissions by the amount needed to meet Government targets are powerful arguments in favour of each of the developments proposed.
- 3.18 Mr A L Burton (Tyn-yr-Eithin, Carno), a civil engineer with experience in the wind energy industry, gave additional evidence concerning recent trends in climate change and the consequent need to develop renewable energy resources in order to avoid the catastrophic effects of more extreme global weather patterns. The threat of climate change makes it imperative to reduce CO₂ emissions, by pursuing Government targets for a 20% emissions cut and generating 10% of electricity from renewable resources by 2010, and continuing to cut greenhouse emissions to a 60% reduction by 2050 (Royal Commission on Environmental Pollution - 22nd Report "Energy - The Changing Climate").
- 3.19 Recent suggestions that the Government may fail by some way to meet its 2010 target for energy from renewable resources adds weight to the need to develop wind energy sources. A recent study of renewable energy resources in Gwynedd (ETSU Report K/PL/00055/REP (1996)) indicates that onshore wind energy is likely to be the dominant economically exploitable source of renewable energy in Wales in the near term. The high, exposed plateaux of Montgomeryshire are topographically well suited to exploit wind resources.

CASES FOR THE OBJECTORS

CPRW

- 3.20 The thrust of Government policy is to stimulate the exploitation and development of renewable energy resources where they have prospects of being economically attractive and environmentally acceptable. Although proponents of wind power emphasise the positive nature of this stance towards such projects, Government policy equally recognises that full regard must be paid to countryside protection policies in determining wind power proposals.
- 3.21 CPRW fully recognises the threat to the environment posed by climate change and supports the principles of sustainable development and increased use of renewable energy resources. It appreciates the reasons for the Government's target of 10% of electricity from renewables by 2010, with a further general aim of doubling that level by 2025. However, there has been an imbalance between encouraging land-based

wind energy schemes, driven by the NFFO and its successor mechanisms, and protecting rural landscapes and the enjoyment of the countryside. The escalation of onshore wind development proposals is a major threat to the integrity, diversity, scale, space and potential for enjoyment of the Welsh landscape and countryside. The intermittent energy generated by existing and projected schemes is insignificant in relation to their adverse visual impact. On balance, the benefits do not justify the damage to the Welsh landscape.

- 3.22 Pursuing Government targets to develop renewable energy by concentrating on upland wind turbine sites with the highest wind speed potential would greatly harm sensitive landscape resources which merit protection. Onshore wind power proposals should be sited in less sensitive areas, even if these have lower wind speeds. Less visually harmful alternatives exist for large-scale energy production from renewable sources, such as offshore wind turbines, which the BWEA recognises as having major potential [MC Doc 39], or wave and tidal energy schemes [NC Doc 47 (ii)]. Such technologies would contribute more to Government targets at less cost to the environment. The increasing recognition of offshore wind power as a future significant energy source means that there is a diminishing justification for exploiting onshore wind sites in areas which should be protected from harm.
- 3.23 CPRW has adopted its own policies in respect of wind power generating proposals [MC Doc 33]. These underline its opposition to large scale or visually intrusive proposals in upland locations; but also state that small-scale on-shore wind proposals which would not have unacceptable impacts will not be opposed. CPRW's policy towards off-shore wind installations indicates support where there would be no significant detriment to important landscape or seascape quality and amenity, or to the recognised characteristics of sites designated for their scientific or wildlife importance. Its stance on each of the 3 proposals is consistent with these policies.
- 3.24 The Government's pursuit of renewable energy supply targets through the NFFO system has encouraged a focus on more profitable windy sites for on-shore wind power without proper prior environmental appraisal. The fundamental openness, extensiveness and undeveloped appearance of the countryside are now threatened by an alien type and scale of development with potential for serious proliferation. The BWEA suggestion of 10% of electricity from wind by 2025 would require 10,280 turbines (Wind Energy: Power for a Sustainable Future: Policy Statement of the British Wind Energy Association, 1996). The current annual growth in electricity demand would substantially increase this estimate.
- 3.25 CPRW has estimated the possible implications, in terms of numbers of new turbines, of relying on onshore wind energy as the primary means of achieving the Government's interim target of sourcing 10% of UK electricity demand from renewables by 2010. The distribution of unfulfilled NFFO contracts demonstrates an intense pressure for wind turbine developments in the uplands of mid-Wales [MC Doc 37]. The DTI "high wind" scenario would require around 3,350 turbines in the UK (New and Renewable Energy: Prospects for the 21st Century - Response from the Countryside Agency to the DTI: June 1999). This would include an estimated 141 further onshore installations totalling 1,195 turbines in Wales; the "trends continued" and "constrained wind" options would mean 80% and 50% of this number respectively [MC Doc 38]. Although these are smaller numbers of additional turbines than previous estimates, the turbine sizes would be larger.

- 3.26 The Countryside Agency submission to the DTI stated "*while we acknowledge that onshore wind energy has a part to play in the renewables mix, we cannot support the ambitious scale of the resource implied by the consultation document*" [New and Renewable Energy : Prospects for the 21st Century – Response from the Countryside Agency to the DTI (June 1996)]. CPRW shares this view and considers it equally applicable in Wales.
- 3.27 The perceived obstacle to wind energy development posed by the planning permission process is actually a reflection of the significant landscape and countryside protection issues raised by many onshore wind power schemes. The seriousness of these issues means that there should be much more emphasis on the development of less objectionable sites in less sensitive landscapes (albeit perhaps in locations with a lower average wind speed) and offshore sites. The BWEA recognises that such sites will ultimately have to be developed in any event (BWEA: Evidence to the House of Commons Trade and Industry Committee Inquiry: Aspects of Energy Policy, February 1998). Other renewable technologies such as tidal lagoons have potential for a much larger contribution to energy supply [NC Doc 47(ii)]. The duty to protect landscapes and other interests of acknowledged importance should not be compromised by narrowly framed renewable energy policies. Rather, there should be greater emphasis on other technologies, reduction in demand and energy conservation.
- 3.28 Although emerging local plan policies no longer seek to define a maximum declared net capacity for wind farms in Montgomeryshire, existing installations represent 72.3MW installed capacity, making Montgomeryshire over 90% self-sufficient from wind. Montgomeryshire has possibly the highest output per capita from wind energy of any area in the UK, and includes the two largest installations in the UK. The attractive upland landscape of the area has already experienced significant effects from wind turbine developments. The trend towards much larger turbines is leading to a correspondingly greater impact in the landscape. There can be no justification for granting further planning permissions if this involves significant adverse impact on interests of acknowledged importance, such as landscape quality and the character of the countryside.

CUM AND OTHERS

- 3.29 CUM and others opposing the proposals, including Mr W Marden (Yr Efail, Pandy, Llanbrynmair), Mrs P Madge (Castell Isaf, Adfa), Mr P Brachi (Ffrwd-wen, Carno), make various points relating to renewable energy policy and the claimed need for and benefits of the proposals. In summary, the relatively small benefits of the wind power schemes proposed, in terms of their contribution to UK energy needs and to targets for reductions in greenhouse gas and pollutant emissions [MC Doc 53], are outweighed by their adverse impacts on the rural environment in visual and other terms. Whilst obtaining energy supply from renewable sources is supported in principle, the harm arising from large-scale industrial installations such as these in the unspoilt upland areas of mid-Wales is too great to accept.
- 3.30 There is already a heavy concentration of wind farms in Montgomeryshire, which the proposed developments would unacceptably increase. This is especially unjustified when many other parts of the UK have relatively unexploited wind potential [MC Doc 53(b), MC Doc 35(a)]. The level of harm is disproportionately high in relation to the small energy contribution and emissions savings gained. Other renewable

energy technologies, for instance photovoltaics, and measures to reduce energy use and waste are better solutions to issues of environmental sustainability [MC Doc 53(a)].

- 3.31 Assessment of the potential environmental effects of onshore wind power generation must be set against the relatively small energy harvesting potential of wind turbines. DTI figures estimate that the practicable limits to onshore wind turbine development are 8,180GWh per year (DTI New and Renewable Energy: Prospects in the UK for the 21st Century: Supporting Analysis P181), equivalent to just 0.3% of current total inland energy consumption. This demonstrates that onshore wind power makes a very small contribution to national energy needs. Even if developed to its full exploitable potential it would not keep pace with recent rises in electricity demand.
- 3.32 In summary, those opposing the proposals say that whilst Government policy generally seeks to encourage the development of renewable energy schemes, it also makes clear that the environmental implications of any given scheme must be taken fully into account in determining whether it is acceptable. In the case of the current proposals, their particular environmental impacts on the locality must be weighed against the modest energy contribution and emissions savings that would be gained, particularly when these are compared with the greater contributions which other technologies and energy efficiency measures, with lesser environmental impacts, could achieve.

4. PLANNING POLICY BACKGROUND

- 4.1 This section sets out the general national and local planning policy background affecting wind farm development in the countryside and the rural landscape. The list of policies is not exhaustive and some others which relate to specific elements and effects of the individual applications, such as ecology, archaeology, noise, traffic and tourism, are referred to as appropriate when reporting the evidence of the parties and in my conclusions.
- 4.2 The main Government planning guidance for Wales is Planning Guidance (Wales): Planning Policy [First Revision April 1999] (PPW) [CL Doc. 4, CD12], supplemented by a series of topic based Technical Advice Notes (TANs). Section 5 of PPW contains guidance on several of the environmental and conservation issues arising from the applications. Paragraph 5.1.1 indicates that the countryside should be protected for the sake of the value of its intrinsic characteristics. It states that development in it should benefit the rural economy and maintain or enhance the environment. Paragraphs 5.3.5 and 5.3.6 offer advice on landscape designations and point out that local countryside designations carry less weight than those at the national level. None of the proposed wind farm sites fall within an area statutorily designated for its national landscape quality.
- 4.3. Section 13 of PPW deals with energy. It states that Government policy is to stimulate the exploitation and development of renewable energy sources wherever they have prospects of being economically attractive and environmentally acceptable. Authorities should consider both the impact of renewable energy projects on the local environment and their contribution to reducing emissions of greenhouse gases and other pollutants.
- 4.4 TAN8: 'Renewable Energy' [CL Doc. 4, CD15] states in paragraph 1 that it will be taken into account in dealing with appeals and call-in applications. Annex A addresses the topic of wind energy and wind farms. It offers advice on matters such as siting and the landscape, noise and ecology. Paragraph A44 states that the desirability of exploiting a clean, renewable energy resource must always be weighed against the visual impact of turbines on the landscape. Paragraph A47 indicates this impact is influenced by the land form and characteristics; the number, size, design and colour of the turbines; their layout; and the existing skyline of the area. Paragraph A48 goes on to say that compared to other well-established forms of development in the countryside, wind turbine generators are individually of low mass and require no extensive supporting infrastructure or services, but they do present a distinctive vertical feature and have the characteristic of movement not normally present in man-made structures. Their acceptability will be determined to a considerable extent by the form and pattern of the landscape within and adjoining the site. Paragraph A49 adds that account should be taken of the cumulative impacts of wind farms.
- 4.5 Other national guidance of particular relevance to issues raised at the inquiries are PPG 22 on Planning and Renewable Energy applicable in England; TAN5: Nature Conservation and Planning; TAN11: Noise; TAN17 and WOC 11/99 concerning Environmental Assessment; TAN18: Transport; WOC 60/96 dealing with Archaeology; and WOC 5/93 concerning rights of way. Reference was also made to WOC 35/95 on the Use of Conditions. [Some of these documents appear as CL Doc. 4, CD5].

- 4.6 At the local level the current approved development plan is the 1996 Powys County Structure Plan (Replacement) [CL Doc. 4, CD7]. Due regard must be paid to its policies in the context of section 54A of the 1990 Act and paragraph 3.5.1 of PPW. The deposit 1995 Montgomeryshire Local Plan has been through its public inquiry and modification stages towards adoption [CL Doc. 4, CD8 and 9], but is the subject of a direction under section 44(1) of the 1990 Act in respect of further modifications to part of the plan. This direction was still in force at the time of the closure of the inquiries. Powys County Council have stated that the direction does not affect any text or policies relating to renewable energy and wind farms or conservation [MC Doc. 65]. As indicated in paragraph 4.15.1 of PPW, I consider that considerable weight can be given to the Local Plan as it has proceeded so far through the statutory procedures towards adoption.
- 4.7 The Nant Carfan site lies within the Western Uplands Special Landscape Area shown on the Structure Plan key diagram and the deposit Montgomeryshire Local Plan proposals map. The sites of the Mynydd Clogau and Cwm Llwyd proposals lie close to the eastern edge of that area, with parts of those sites falling just outside the boundary. Structure Plan policy EC3 seeks to ensure that development within or adjacent to the SLA is appropriate and sensitive to its high quality and individual character, and is integrated into the landscape. Local Plan policy ENV3 has a similar aim, but is confined to development within the SLA and adds that an exception may be justified for a wind farm development complying with other Local Plan policies.
- 4.8 Local Plan modified policy ENV2 refers to the ‘Montgomeryshire Landscape Assessment’ [MC Doc. 12 and 29; CL Doc. 5/CD30; NC Doc. 2/CD6] and requires the scale and location of proposals to accord with opportunities identified in it and to safeguard its special features. This policy gives added status to the MLA which was approved for publication in 1993 [CL Doc. 22(1)] and it was used as a basic reference by all the main parties at the inquiries. The assessment is summarised in paragraphs 5.11 – 5.46 of the deposit MLP.
- 4.9 Structure Plan policy EC20 supports development proposals for renewable energy, subject to a number of criteria. The deposit Local Plan contained a range of wind farm policies which have been subject to modification or deletion, as has the supporting text in the section headed ‘Energy Generation and Conservation’. As modified, policy ENV24 deals with the proliferation of wind farms; modified policy ENV25 relates to cumulative impact; modified policy ENV26 refers to noise, shadow flicker and reflected light. Modified policies ENV27 and ENV28 seek to optimise the number of generators within any environmentally acceptable site and protect such sites from detrimental development on adjoining land. Modified policies ENV29, 30, 31 and policy 32 deal with related matters involving transmission lines, off-site works and restoration.
- 4.10 Structure Plan policies EC5, EC8, EC9, EC16 seek to resist proposals which would have unacceptable adverse effects on ecology, habitats, nature conservation areas, or sites of archaeological interest. The Local Plan has similar objectives in policies ENV8 (modified), ENV9, ENV10 and ENV19 and 20. Structure Plan policies EC4, EC23, T11 and T12 deal with environmental impact, including noise, other pollution, and traffic. Structure Plan policies TR15 and 16 and Local Plan policies LD16 and modified policy LD17 safeguard and seek to improve the rights of way network.

Structure Plan policy EC7 seeks to protect common land. All common land is included, in effect, as a SLA category under policy EC3.

- 4.11 Work has commenced on a Unitary Development Plan for Powys, but it is still at a very early stage and it is unlikely that even a consultation draft will be published before October 2001 [CL Doc. 4, CD10]. In these circumstances I do not consider it can carry any significant weight in the determination of the applications before the Assembly.

5. GENERAL PUBLIC ATTITUDES TO WIND FARMS

- 5.1 This section summarises the evidence submitted concerning the attitudes generally displayed by individuals towards wind farms, and how attitudes change in response to direct experience, education and information. The section then goes on to summarise the various expressions of public opinion towards wind farms in Montgomeryshire, as represented by public consultation over planning policies on wind farms and over each of the 3 schemes currently proposed.

CASE FOR THE APPLICANTS/APPELLANT

- 5.2 The proposers of each of the wind farm schemes cite various surveys and research findings concerning attitudes to wind farms [MC Docs 18A, 18B, 21, 23; CL Doc 23 (8); NC Doc 1 (Vol 2 pp22-24); CE Doc 5 (4)]. These demonstrate that, whilst attitudes to wind farms vary between individuals, most people quickly accept the presence of wind farms in a locality once they are built and operating. Opinion surveys conducted in respect of a range of wind farm sites in Wales, England and Scotland demonstrate that public attitudes to wind farms are generally positive. Moreover, a majority of people living near wind farms are in favour of wind power and look favourably on the wind farms in their local area after they are constructed. Public misgivings about the possible adverse implications of wind farms, such as their appearance in the landscape or the effects of noise, tend to dissipate in the light of actual experience.
- 5.3 The provision of renewable energy information and public access to wind farms is seen as having a positive effect on public attitudes. Wind farms are publicised as features of interest in a range of tourism publications. Public comments have been reproduced in information leaflets produced by wind power operators and the industry has researched public attitudes to the cumulative effects of wind turbines in Mid-Wales. These demonstrate that, in general, wind farms are seen as an attraction and a feature of interest by visitors and residents of an area alike. Whilst there are some dissenters from this view, there is no direct evidence that wind energy development in the area has harmed tourism [CL Docs 17 (25), 20 (10-13); NC Docs 8 (PW(S)1, PW(S)4), 20 (1-3); CE Doc 5 (3,4)].

CASE FOR OBJECTORS

- 5.4 Objectors to the proposals are critical of the evidence relied upon by the wind power industry. They say that regardless of whether the designs of wind turbines are considered to have intrinsic aesthetic merit, most people perceive them as alien elements in a rural landscape. Some of the surveys relied on by the wind power industry reflect general public support for the principle of wind power rather than specific endorsement of a particular proposal in a particular location. General opinion surveys are not a sensible basis for sound planning, since they are often unrepresentative snapshots of ill-informed opinion.
- 5.5 Policies of the Wales Tourist Board reflect concerns that the introduction of more and larger wind turbines in some areas could adversely affect tourism. This is because of their perceived negative impact on an area by potential visitors [MC Doc 42; CL Doc 35; NC Doc 44 (H)]. Whilst one wind farm in an area may possess a certain curiosity value for tourists and provide an educational resource, any such initial interest soon wanes. The harm to visual amenity caused by a rural landscape covered in wind

farms would heavily outweigh any general interest which people might have in wind farms.

- 5.6 The wind power industry's opinion survey into the cumulative effects of wind turbines in mid-Wales is unreliable. It is not impartial; and objectors with direct experience of the research query the small number of participants, the manner in which they were selected and the accuracy of recording of views expressed. Claims that wind farms are viewed positively by visitors to an area and statements that there is no evidence that wind farms have a negative impact on tourism are derived from flawed surveys. They are contradicted by the views expressed by many in letters to newspapers, by users of many local holiday businesses and by visitors to the area [MC Docs 31, 41, 44-47, 49, 52(b) Addendum 6, 60, 64; CL Doc 48, 49 (1); NC Docs 46, 49; CE Doc 37].

EXPRESSIONS OF PUBLIC OPINION TOWARDS WIND FARMS IN MONTGOMERYSHIRE

- 5.7 The policies of the Powys Structure Plan and the emerging Montgomeryshire Local Plan governing wind farm proposals in Powys have been subjected to public scrutiny and comment at various stages of the development plan process. Consultation exercises included seminars and exhibitions, press publicity and displaying documents at libraries and council offices. The public consultation process for the Powys Structure Plan included production of an initial consultation draft for public comment; a "Summary of Proposed Replacement Policies"; a deposit period for the draft proposed plan, with public exhibitions; proposed modifications in response to comments received; and further advertisement prior to adoption. The Montgomeryshire Local Plan underwent a similar process of extensive public consultation at the consultation draft and deposit draft stages, and further consultation over proposed modifications to the local plan following the public local inquiry into objections to the deposit version.
- 5.8 CUM points out that, as a local body constituted to provide collective opposition to additional wind farm proposals in Montgomeryshire, their participation at each of the inquiries represents the views of many local people. At the beginning of the Mynydd Clogau inquiry CUM's membership was 117. By the start of the Cwm Llwyd inquiry this had increased to over 260; and at the start of the Nant Carfan inquiry it was over 300, of whom about 250 are resident in Powys.

General public opinion concerning the Mynydd Clogau proposal

- 5.9 RES undertook a local public information and consultation programme in respect of the Mynydd Clogau proposal before and during the planning application process. Local exhibitions were held in December 1995. Shortly after submission of the original application (March 1996) an information leaflet and free-post comment card were delivered to 3,500 homes in the surrounding area. 19% of cards sent out were returned. 48% of respondents thought the proposed site was a good location for a wind farm, 40% disagreed and 12% were unsure [MC Doc 2 (ES Vol II p.18)].
- 5.10 The public consultation responses and the results of the local authority's own consultations indicated concerns, particularly in relation to bridleways and landscape/visual impact issues, and also archaeology and ecology. The revised scheme sought to address these issues. Further public consultation (an updated

information leaflet distributed to the same 3,500 homes and one-day exhibitions in Caersws and Adfa Community Halls in May 1998) was undertaken in respect of the current proposal.

- 5.11 Although RES believes the local consultation exercise to be a valuable aid to gauging local public opinion and identifying matters of public concern, it is acknowledged that it is not a rigorous scientific study. Many local people who have not responded to the consultation exercise or made representations to the Inquiry will have no objections to the proposal. RES considers that if any one body is entitled to represent local public opinion, it is the elected members of the County Council.
- 5.12 CUM is highly critical of the consultation exercise [MC Docs 52(a) pp23-4; 52(b) Addendum 3; 59]. Its main criticisms are that the survey area boundary was drawn too wide; it was not possible to say whether a particular individual response reflected the views of a whole household or a single person; the question posed was ambiguously worded; the large majority of households consulted did not respond. In the light of these factors, it considers that the consultation exercise cannot be said to show more support than opposition amongst local residents.
- 5.13 CUM cites its own community survey undertaken in relation to an earlier scheme at Mynydd yr Hendre as a comprehensive indicator of local attitudes to the prospect of a wind farm in the locality. Out of 243 responses, 157 (64.6%) were opposed to the proposal; 60 (24.6%) were in favour [MC Doc 60].
- 5.14 The public response to the Mynydd Clogau proposal as a result of application publicity for the inquiry is summarised in Section 6.11.

General public opinion concerning the Cwm Llwyd proposal

- 5.15 NWP circulated a public information leaflet to all households in a 18km square around the proposed Cwm Llwyd wind farm in October 1997 [CL Doc 20 (14)]. This ensured that all people in the area had full information about the proposal.
- 5.16 CUM conducted a survey of local opinion on the Cwm Llwyd proposal in December 2000. All households within 4km/2.5 miles of the proposed turbine positions were invited to respond. Out of 191 responses, 120 (62.8%) were opposed to the proposal; 46 (24.1%) were in favour [CL Doc 49(1)].
- 5.17 The public response to the Cwm Llwyd proposal as a result of application publicity for the inquiry is summarised in Section 7.11.

General public opinion concerning the Nant Carfan proposal

- 5.18 PR undertook a local consultation exercise as part of the Nant Carfan application process. A leaflet outlining the proposal was distributed to about 500 homes within a 5km radius of the site in March 1999. A public exhibition was mounted at Llanbrynmair Community Centre in June 1999. A second exhibition was held in April 2000, attended by around 100 people. 25 questionnaires were completed. 52% of respondents were in favour of the proposal, 28% against and 20% had no view either way.

- 5.19 The public response to the Nant Carfan proposal as a result of application and appeal publicity is summarised in Section 8.11.

6. MYNYDD CLOGAU, ADFA

APP/T6850/X/00/513765 – Application by Renewable Energy Systems for 17 wind turbines and associated development at Mynydd Clogau, Adfa, Powys.

6.1. SITE AND SURROUNDINGS.

- 6.1.1 The site is located at the eastern edge of the Western Uplands SLA about 1.5km west of the Adfa – Bwlch-y-ffridd road, and some 11km north-west of Newtown. The small settlements of Adfa, Llanllugan and Cefn Coch lie about 2.5km, 3.4km and 3.5km respectively to the north-east of the site [Plan A and Doc. 3, Fig. 1.1].
- 6.1.2 It covers some 200ha of improved and semi-improved grassland, with large patches of marsh, mire and heath, used for rough grazing by cattle and sheep [Doc. 3, Fig. 7.1]. The site area extends down in a northward direction from a ridge and bridleway (No. 26), near the eastern edge of an extensive plateau. The ridge extends, at an elevation ranging between 400 – 440m AOD, from Mynydd Clogau to the west through the central area of the site on Mynydd Bwlch-y-gors, into Mynydd Cerrigllwydion to the east. The turbines would occupy the lower part of the site with their bases all below the 395m contour.
- 6.1.3 To the east and north the land slopes down the hillside into narrow valleys and water courses, such as the Crygnant, filter away from the hill slopes towards the shallow hills and valley landscape to the east [Doc. 3, Fig. 5.2]. To the south of the ridge and bridleway 26 the land slopes down through the Bryn-y-fawnog and Upper Hill Common, comprising mainly heath and wetland, onto south facing hill slopes and saddles which define the plateau scarp. To the south-west of the edge of the site, the lakes of Llyn-y-Tarw, Llyn Du and Llyn Mawr which is a SSSI, lie in the lower plateau slopes. Llyn-y-Tarw is some 500m from the site boundary and the other lakes some 1.5 – 2kms away. To the west of the site the ground falls and rises up towards the ridges and crags around Garreg-hir, about 2.3km away, which is 485m AOD at its highest point. The site is devoid of trees or hedges, apart from a small tree group near the bottom of the northern slope.
- 6.1.4 The main approach to the site is along bridleway No. 26 leading from the Adfa road to the east. The bridleway climbs steadily from that road to the eastern end of the site and then forms the southern site boundary as it follows the crest of the ridge to its maximum height near the western end of the site. It then slopes down past the Llyn Mawr SSSI and joins a metalled road leading down through the hamlet of Bwlch-y-Garreg some 2.2km away. Footpath 25 extends from the same road up towards the eastern edge of the site. Footpath 27 extends from the roads in the Carmel locality to the west of Adfa and cuts through the north-west fringes of the site to join bridleway 26. There are other footpaths and bridleways to the north-west and south of the site [Plan E]. The nearest inhabited dwellings to any of the proposed turbine positions are Ty Uchaf, about 830m away and The Heath almost 1km away.

6.2. SITE HISTORY AND DESCRIPTION OF THE PROPOSED DEVELOPMENT.

- 6.2.1 Following discussions with the former District Council in 1993, planning permission was given at Mynydd Clogau for a wind monitoring mast and a supply contract secured under NFFO3 in 1994. In January 1996 an application for a layout of 20 x 500kW turbines was proposed on the higher part of the site (LA ref: M26150) [Doc. 6]. The overall height of the turbines was 59.5m. On 29 February 1996 the application was made the subject of an Article 14 Direction by the Secretary of State. The application was eventually withdrawn in September 1998.
- 6.2.2 The current application which is before the Assembly was dated 10 September 1998 and received by the Local Planning Authority on 11 September 1998 (LA ref: M98/669). The application is for a wind farm of 17 turbines, access tracks, meteorological mast and sub-station at Mynydd Clogau, Adfa [Doc. 7; Plan B; and Doc. 3, Fig. 4.1]. The Article 14 Direction issued in 1996 continued to apply to the site and on 1 March 1999 the 1998 application was called-in for determination by the Assembly. Powys CC have provided a note of their consultations and representations received on the application prior to its call-in [Doc. 8].
- 6.2.3 The application was accompanied by an Environmental Statement [Docs. 1 – 3]. An addendum was added dealing with traffic management and road improvements [Doc. 4]. On 31 August 1999 the Assembly requested further environmental information in respect of the Environmental Statement which was set out in a report dated 27 October 1999 [Doc. 5A].
- 6.2.4 No formal amendments were proposed to the application during the inquiry. There was some discussion about the possible re-siting or deletion of turbines 7 and 17 which is dealt with in the evidence of the parties and my conclusions.
- 6.2.5 The applicant states that the layout has taken account of adverse comments made in respect of the layout of the 1996 proposal [Doc. 17/5.] by locating the turbines off the ridge and further down the north facing slope of the site [Plan B and Doc. 3, Fig. 4.2].
- 6.2.6 The horizontal axis turbines would be 3 bladed and the likely design would be a Vestas 660kW with a tower height of 45m and a rotor diameter of 47m, giving a base to blade tip height of 68.5m [Doc. 3, Fig. 4.4]. The turbine towers would be served by access tracks and an electricity sub-station within a compound of about 35m by 17m. There would also be a small control building and a temporary construction compound [Doc 3, Figs. 4.7 and 4.8]. All cabling within the site would be underground. The grid connection would be made via an overhead cable running for some 2.5km down to the existing 132kV line between Newtown and Carno, probably linking with it south-east of Bwlch-y-garreg. RES would operate a strict safety policy for all persons involved in the construction of the project or affected by it, based on recognised Health and Safety guidelines [Docs. 17/7 and 17/8].

6.3. ENERGY SUPPLY AND LOCAL EFFECTS

CASE FOR THE APPLICANT

The main points were:

- 6.3.1 The scheme must be considered in the context of Government policies which seek to encourage the development of renewable energy sources, including onshore wind power, in order to meet the established targets for energy production from renewables and reductions in greenhouse gas emissions (summarised in Chapter 3: Renewable Energy Issues). The benefits of the proposal in terms of contributing to Government renewable energy policy objectives and providing a clean, sustainable source of energy are important considerations to be weighed against any harm or disbenefits which might be identified in terms of conflict with the development plan or other material planning considerations such as local impacts.
- 6.3.2 Government statements make clear that even though an individual scheme may make a relatively small contribution by itself to the overall target for energy production from renewable sources, this does not diminish its importance in terms of its contribution to renewable energy objectives. Government targets cannot be achieved without the development of appropriate smaller, as well as larger, energy generating proposals.
- 6.3.3 The scheme has been recognised as a competitive means of energy supply, having been awarded a generating contract under the NFFO 3 round of contracts announced in 1994. The 17 x 660kw wind turbines would have an installed capacity of 11.22MW. Applying a capacity factor of 30%, it would service the equivalent annual electricity demand of around 7,500 homes. When operating at full output, it would supply power to the equivalent of 25,000 homes [Doc 17/2]. These are significant gains. Although objectors may seek to argue that the gains would be small in the context of national needs, such arguments have been regularly rejected by other appeal decisions [Doc 16/15-25].
- 6.3.4 Wind is a safe, renewable energy source that does not release any gaseous emissions into the atmosphere. There are rapidly expanding wind power programmes in many countries [Doc 17/1]. The national grid can readily accommodate 10-20% of its input from intermittent sources like wind turbines [Doc 17/3]. The scheme would provide significant annual and lifetime savings of atmospheric pollutant emissions compared to more conventional power station sources [Docs 17/2, 22(a)]. Within the NFFO legislative and bidding framework [Doc 17/4], the Mynydd Clogau proposal is a viable and competitive scheme.
- 6.3.5 The background of Government renewable energy policy, initiatives and targets and the low level of wind power schemes installed to date [Doc 22(b)] highlights the urgent need to progress a much greater number of projects approved under NFFO 3, 4 and 5 [Doc 16/10]. If the Government target of 5% of electricity supply from renewables by 2003 is to be met, about 53% of NFFO contracted wind and waste incineration projects must be built. Only 23% of the total power capacity of NFFO 3 wind projects has so far received planning permission. The Mynydd Clogau scheme in its amended form strikes the right balance between local environmental considerations and the urgent need to build renewable energy capacity.

- 6.3.6 There would be significant beneficial local economic effects arising from the wind farm. The cost of the civil and electrical construction works would amount to around £1.5 million, much of which is likely to be invested locally. Local firms would be invited to tender for the construction work on the roads, buildings and foundations. From past experience this could entail up to 30 local employees working on the project for the construction period. Local supporting services such as hire firms, fencing contractors and hotels would also be utilised. Once operational the wind farm would require 1 or 2 full-time service personnel. Income would accrue to the landowners and the wind farm would generate business rates.
- 6.3.7 In summary, the thrust of government policy towards energy from renewable sources is an important consideration that weighs significantly in favour of the proposal. Onshore wind power schemes are a critical part of the commitment to meet renewable energy production targets. It is essential that proposals such as this, which are sensitively sited, not close to dwellings and outside areas protected by national landscape designations, are allowed to go ahead.

CASES FOR THE OBJECTORS

The main points were:

CPRW

- 6.3.8 CPRW does not dispute the general order of electricity production and emissions savings that the developer attributes to the proposed scheme. However, the benefits of large-scale wind power schemes such as this must be weighed against the harm to sensitive upland landscapes and to policy objectives relating to protection of the countryside, together with the adverse economic consequences for local businesses in sectors such as tourism. CPRW considers that the energy production and emissions savings that would accrue are insufficient to justify the unacceptable harm to the landscape. Such sacrifice of a precious landscape resource in the interests of renewable energy development is unwarranted when there are other renewable energy technologies, such as offshore wind power, which could provide much greater savings at lower cost to the environment [Doc 39].

CUM

- 6.3.9 Montgomeryshire already suffers from an over-concentration of wind farms. The House of Commons Welsh Affairs Report on Wind Energy (1994) stated that "*a district authority of relatively modest size might estimate that one or two wind farms could be constructed in its area*" (Para 166). Montgomeryshire already has three wind farms, including the two largest in the UK.
- 6.3.10 It is claimed that output from the scheme would be equivalent to the needs of 7,000 homes. In reality, it will supply an intermittent, unreliable and costly output to a far smaller number of mixed domestic and business users in amounts that contribute little to national needs [Docs 52(a) pp18-19, 52(b) Addendum 2].
- 6.3.11 The wind farm would have an installed capacity of 11.2MW, producing about 30GWh of electricity each year. This represents only a fraction of the 201.2 Mtoe of UK energy currently derived from fossil fuels. The wind farm would have to operate

for over 18 years to produce the equivalent of one day's output of electricity from the UK's conventional fossil fuel power stations.

- 6.3.12 The scheme's projected emissions savings would represent just 0.00127% (0.00257 Mtoe) of national emissions from burning fossil fuels. The energy contribution and emissions savings from the scheme are trivial in a national context and will have no discernible impact in global terms [Doc 52(a) p9].
- 6.3.13 The comparison of emissions from conventional power stations with life-cycle emissions from wind farms overstates the benefits of wind power generation. DTI data shows that wind farms have significant life cycle emissions of SO₂, amounting to 0.06 grams per kilowatt hour. SO₂ emissions are the main cause of acid rain. Modern gas-fired CCGT generators produce zero emissions of SO₂ per unit of generated power. They also have significantly reduced emissions of both NO_x and CO₂ (New and Renewable Energy: Prospects in the UK for the 21st Century: Supporting Analysis. DTI page 213), [Doc 52(a) pp21-22].
- 6.3.14 In any case, the simple link presented between CO₂ emissions and global warming is misleading. The causes of global warming are much more complex; factors other than energy production may play a far more significant part in the phenomenon [Docs 52(a) pp14-17, 52(b) Addenda 4,5, 57].
- 6.3.15 Wind power is more expensive to produce than conventional power. It is made competitive only by passing on the additional cost to consumers through the fossil fuel levy. The Government's NFFO-5 Order for England and Wales estimated the total cost to the levy of meeting the 10% target from renewable resources as some £770 - £995 million per year.
- 6.3.16 The developers, in considering the relative advantages of wind power, omit comparison with many alternative sources of renewable energy. Most of these alternatives make a much larger contribution to energy supply [Doc 53]. The developers ignore options including energy conservation measures and rapidly developing solar technologies. Simple energy conservation measures applied to the existing UK housing stock would save the amount of energy produced by the all the UK's wind farms many times over. DTI figures show that 43,000 GWh per year of primary energy could be saved in this way – over 1,000 times the output of the proposed wind farm [Doc 52(b) Addendum 1 p22].
- 6.3.17 Benefits to the local community from the scheme would be relatively small and transient. The main element of expenditure, turbine purchase, is likely to benefit Denmark. The relatively small amounts of money benefiting the local economy during the construction phase would be transitory and non-sustainable. The ES describes a temporary workforce of 20 people for six months. Little would be created by way of permanent employment. The ES asserts that 2 full-time site jobs will be created, yet also estimates only one or two maintenance crew visits per week. The rents paid to a few landowners would diminish over time in real terms and would be small in relation to the operating profits.
- 6.3.18 Set against these minor benefits would be the unacceptable environmental cost to a sensitive, high-quality landscape and a negative economic impact on local holiday businesses and outdoor pursuits in the area.

Other Objectors

- 6.3.19 Mr P Fenton (Llwyn Celyn Holiday Home Park, Adfa) and Mr D Oliver (Cefn Coch Caravan Park, Cefn Coch) objected on the basis that the proposal would have a detrimental effect on the viability of their holiday caravan sites, which are situated within about 1.5km and 3km of the location of the proposed turbines. (Also see paragraphs 6.9.8 to 6.9.11.)
- 6.3.20 In its written representations, Country Guardian stated that the relatively tiny amount of energy that would be produced by this development does not justify the resultant adverse impact on the landscape. The energy benefits of the wind farm have been overstated. The energy supply would be intermittent and unreliable; consequently it would not displace the requirement for power stations utilising nuclear or other conventional energy sources. Fossil fuels are not in such short supply that there is a need to rush into developing alternative energy systems that have other harmful environmental effects. The CO2 emission savings gained from wind energy are very small in relation to the scale of development required. The combined total of all wind turbines produce insignificant amounts of energy compared to levels of demand and conventional power stations [Doc 64].

6.4. LANDSCAPE AND VISUAL AMENITY.

CASE FOR THE APPLICANT.

The main points were:

- 6.4.1 At the time of the 1996 planning application, the visual impact was a main concern of consultees. The current proposal has been designed to reduce such impact in the surrounding landscape. Although most of the overall site area is within the SLA, due to the scale and imprecision of the boundary as shown in the Local Plan it is difficult to be certain what proportion of the turbines fall within it [Doc. 12]. A plan has been supplied by the County Council and an enlargement made [Plan G] from which it is submitted that as many as 10 of the 17 turbine positions may be located outside the SLA boundary. It should be noted that the existing Cemmaes and Carno wind farms were built within the SLA after its designation.
- 6.4.2 A detailed landscape and visual assessment is contained in the ES [Doc. 2, section 5, pages 44 – 75; and Doc. 3, Figs. 5.1 – 5.25]. Additional material requested by the National Assembly [Doc. 63] is contained in the 1999 ES additions [Doc. 5A, Appendix 1]. It is acknowledged that CUM and CPRW have questioned the effectiveness of the techniques used by the Landscape Consultant for RES, but they have not disputed that the assessment was undertaken in accordance with recognised standard practice and they have not produced a comparable assessment of their own.
- 6.4.3 Both the 1992 MLA [Doc. 29] and the applicant's own assessment confirm that the character of the landscape within a 15km study area [Doc. 3, Fig. 5.1] of the wind farm site is diverse. It ranges from plateau, scarp, hill slopes and saddles, to undulating and shallow rolling hills and river valleys [Doc. 2, para. 5.2.1 and Doc. 3, Fig. 5.2]. It is a complex and very diverse landscape exhibiting a wide range of contrasting characteristics and textures brought about by extremes of topography, varied land uses and vegetation cover [Photo 1, Fig. 1]. The visual quality of the

Montgomeryshire landscape is the complex interrelationship of this rich matrix of character, rather than the quality of any single landscape type in isolation. It is considered that the landscape of the study area has the capacity to absorb an appropriately sited and scaled wind farm without diminishing its qualities.

- 6.4.4 A detailed assessment of the visual effects of the proposal has been carried out from a selection of viewpoints agreed with the Local Planning Authority as being representative of views of the site, using a 5 stage process [Doc. 19(a)]. This was aided by computer images, including ZVI diagrams, wire-lines and photomontages [Photo 1 and Plans H – K]. The ES dealt with 17 viewpoints [Doc. 2, Table 5.1 and section 5.3.5] and a further 9 viewpoints examined in response to a request from the National Assembly [Doc. 5(A), Appendix 1]. At the inquiry the main conclusions of the visual assessment have been illustrated using a representative sample of the viewpoints.
- 6.4.5 The measures of the visual impact used defined significance criteria ranging through ‘*major*’ effect where there would be a material and permanent change to the environment; ‘*moderate*’ effect where there would be some degree of material change, through to ‘*minor*’, ‘*negligible*’ or no effect [Doc. 2, page 57]. The main conclusions and effects [Doc. 19(b)] are as follows.
- 6.4.6 Unlike many wind farms the site avoids a high plateau ridge, and the visual benefits brought about by locating the turbines down the slope away from the Mynydd Clogau ridge are considerable. The potential visibility is reduced with, in most cases, just the blade tips visible and elsewhere nothing visible, as in Caersws. The main zone of visibility is to the north and north-east, with limited visibility to the south, and to the west beyond Garreg-hir. It is the plateau ridges of Mynydd Clogau, Mynydd Cerrigllwydion and Garreg-hir that provide the strong visual containment to the south, south-east and further west. To the east, it is the enclosed and intimate nature of the shallow rolling hills and narrow valleys that provide substantial visual containment. From the majority of the viewpoints studied within an arc extending through 180 degrees from the west to the south and east, visibility of the wind farm beyond the above plateau ridges is either non-existent or negligible.
- 6.4.7 From the west, the prominent ridge of Garreg-hir is an important and locally noted viewpoint from which there are views of the site across the upland bowl which links it with the application site area [Photo 1, Fig. 3 (VP1)]. From viewpoint 1 at the southern approach to Garreg-hir the significance of the visual impact of the wind farm would be ‘*moderate*’. The character is that of plateau, with the rounded moorland of Mynydd Clogau and Mynydd Cerrigllwydion contrasting with the rocky outcrops of Garreg-hir. Much of the landscape is improved grassland. The wind farm would be seen in part against the sky, but its layout is such that it would blend into the gently rolling landform. It would sit on the plateau landscape without encroaching onto the rounded summits and its small scale would be appropriate within the open, otherwise featureless plateau. Beyond Garreg-hir to the west the land falls away to the Afon Carno and the wind farm would not be seen from settlements within the valley.
- 6.4.8 In the views from the north and north-east, fewer turbines would be seen against the horizon in comparison with the 1996 layout. The turbines would now be closer to those views, but have a lower visual impact as they would now be seen mostly against the hillside rather than the sky. They appear in scale and proportion with the

hill side and in most cases only occupy a small proportion of the field of vision. The turbines are arranged along the contour and respect the grain of the landscape. The representative viewpoints which include the small settlements of Cefn Coch, Llanllugan and Adfa illustrate these points.

- 6.4.9 In views from the Class III road west of Cefn Coch, near Tanyfoel Quarry [Photo. 1, Fig. 4 (VP4)] the site is seen across a landscape of plateau, hillslopes and saddles with little vegetation. The wind farm effect would be '*minor*'. The quarry distracts from the rounded undulations of the broader landscape. All 17 turbines could be seen on the lower northern slopes of the site, with only the blades of most of them showing above the horizon. Some of the lower turbines would be part obscured by the Cefn Gwyn ridge in the middle distance. Although the wind farm would be prominent, its siting against the plateau slopes would help reduce its scale and help it appear more as an integral part of the landscape.
- 6.4.10 All the turbines would also be seen from Cefn Coch Inn car park [Photo. 1, Fig. 5 (VP3)] across shallow rolling hills with pasture and hedgerow trees in the foreground, although none would appear on the horizon. Against the backdrop of the plateau slopes the turbines would appear well related to the landscape and there would be some intervening screening of lower parts of the towers by Cefn Gwyn and trees. Again, the site would appear well proportioned within the broader landscape picture and the wind farm effect would be '*minor*'.
- 6.4.11 From Llanllugan the fore and middle grounds of view contain hedgerow trees and copses in the valleys [Photo. 1, Fig. 6 (VP17)] and the effect of the wind farm would be '*minor*'. Parts of all the turbines are likely to be seen nestling into the lower Mynydd Clogau slopes below the main summit, with Cefn Gwyn affording some screening. Views from the network of local lanes in the area of shallow hills and narrow valleys would often be curtailed by various landscape features such as hedgebanks and trees.
- 6.4.12 From the Class III road through Adfa itself, near the village hall [Photo. 1, Fig. 7 (VP2)], the intervening landscape of shallow rolling hills, with pasture and hedgerows, gives way to the more sparsely vegetated hillslopes and saddles which skirt the eastern fringes of Mynydd Clogau. The plateau is prominent and all 17 turbines would be seen to the right of the summit, silhouetted against the sky. The narrow field of view occupied by the wind farm is an acceptable proportion of the wider picture and the sensitive siting of the turbines avoids the lines of the plateau summit. The effect from viewpoint 2 would be *moderate*.
- 6.4.13 Representative viewpoints from the east of the site have been found on the Adfa – Bwlch-y-ffridd road and the Class III road south of Tregynon. On the first road near Waen-y-Pant the view is typical of those looking to the west and north-west [Photo 1, Fig. 8 (VP5)] across the lower hillslopes and Gwygla Reservoir. Very little would be seen of the wind farm, apart from some blade tips protruding over the ridge skyline and the effect is considered to be *negligible*. This demonstrates the benefit of the turbines siting and the screening and visual containment to the south and south-east provided by the higher ground.
- 6.4.14 On the Tregynon road, in the vicinity of Ty'n-y-bryn, the shallow hills, narrow valleys and substantial plantations to the west limit the opportunity for long distance views towards the plateau [Photo. 1, Fig. 9 (VP15)]. Even where the site may be

visible through the trees the turbines would be largely obscured by the Mynydd Clogau ridge. In theory 4 blade tips could protrude above the horizon, but none of the turbines would be visible in their entirety. Again, the effect of the wind farm would be *negligible*.

- 6.4.15 In the longer distance viewpoints from the plateau slopes and rising ground to the south, only blade tips would be seen, if at all from such a distance. They would also appear as very small elements within a broad panorama and have no effect on the character and quality of the landscape experienced from these locations. The viewpoints range between 7km and 11km from the site. On the B4568 near Aberhafesp [Photo. 1, Fig. 10 (VP10)] the view from the Severn Valley suggests that in reality only a single blade tip might be visible and is unlikely to be seen at that distance. From the A483 south-west of Newtown [Photo. 1, Fig. 11 (VP12)] the view illustrates that from the slope above the Severn Valley across the urban area. The Bryn-y-Pentre woodland is prominent, with the Mynydd Clogau plateau forming a distant horizon beyond.
- 6.4.16 The 20km ZVI suggests that 9 – 12 blade tips could be seen, but at a distance of about 12km it is unlikely they would be discernible. From close to the telecom masts on Bryn Gwyn west of Mochdre, panoramic views to the north can be obtained [Photo. 1, Fig. 12 (VP14)]. From here the hills slope down to the valley floor near Caersws and the wooded hills rise towards the plateau to the north. The ZVI suggests that half of the blade tips would be visible rotating on the distant horizon, but it is unlikely they would be a significant feature in the broad panorama of landscape types seen from this distance. From the low level of the A470 bridge at Caersws [Photo. 1, Fig. 13 (VP7)] the views are towards the shallow rolling hills with the Mynydd Clogau plateau a distant horizon. Trees on the floodplain and hillside woodland on the middle distance partly obscure the plateau. Nothing of the wind farm would be seen from this point, nor along most of the Carno Valley floor, due to the landform of rising slopes away from the valley [Photo. 1, Fig. 14]. The analysis of viewpoints 10, 12, 14 and 7 shows that the wind farm effect would be *negligible*.
- 6.4.17 From locations within 1.5km of the site, the visibility from nearby rights of way would be high. The high degree of visibility is confirmed by visibility from bridleway 26 along the southern site boundary, which is some 480m from the nearest turbine. When travelling the bridleway at least part of the wind farm would be seen in each direction, with the 3 peaks of Cerrigllwydion, Bwlch-y-gors [Photo. 1, Fig. 15 (VP 'D')] and Clogau giving the greatest potential for open views of the turbines. At viewpoint 'D' the effect of the wind farm would be *'major'*. Generally it is unlikely the turbines would be seen against the skyline, but against rising pasture or more distant hills and valleys; and the relative visibility of height, hub height or blade tip would vary as the walkers moved along the peaks and troughs of the bridleway.
- 6.4.18 Most dwellings and farmsteads close to the site [Doc. 3, Figs. 6.1 – 6.3] are quite well sheltered from view due to landform and vegetation. The nearest inhabited dwelling is some 830m away. To the north, dwellings lie in the narrow valley of Nant-y-Llyn Mawr and the Carmel locality. Their views are limited by the rounded hills of Cefn Gwyn and a typical example is that from Ty-Hir [Photo. 1, Fig. 16] where moving blade tips would be seen, with more of the towers visible further to the west where the ridge line dips down. Local trees and vegetation would also serve to restrict views. The effect would be *'minor.'*

- 6.4.19 To summarise the analysis of visual impact, it can be concluded that the main zone of visibility is to the north and north-east, but the wind farm would be muted due to its layout below the ridge. As a result, the effect would be *minor*, except at viewpoint 2 in Adfa. To the west visibility is limited, except at Garreg-hir where there would be an effect of *moderate* significance. In the viewpoints found in a 180 degree arc from west to the south and east, visibility of the wind farm would either be non-existent or *negligible*. In longer distant views beyond 10 km to the south the distance and views only of blade tips means the effect would be *negligible* or have no effect. As would be expected, the visibility impact from the bridleway passing the site would be high.
- 6.4.20 With regard to the landscape effects of the proposal, given the limited extent of visual influence of the wind farm, its impact on the character and distinctiveness of the existing landscape is equally limited to the immediate plateau, hill slope and saddles on which it would be sited. The wind farm is relatively small in turbine numbers and site area, and with its limited visual effect it would not compromise the quality of the SLA. Neither would it diminish the underlying qualities of the wider Montgomeryshire landscape as a whole where its diversity affords a level of tolerance that ensures it could accommodate the wind farm.
- 6.4.21 An assessment has also been undertaken with regard to intervisibility and cumulative effects when considered with existing wind farms within 25km of the site. These are the 56 turbines at Trannon Moor, Carno, some 12km to the west; 103 turbines at Llandinam about 14km to the south; Cemmaes wind farm, some 16km north-west, which has 24 existing and 6 approved turbines; and 22 turbines at Bryn Titli about 24km south-west [Doc. 11 and Plan H]. The ZVIs and field work has confirmed the degree of intervisibility and resulting cumulative effects likely to be experienced.
- 6.4.22 The existing sites and Mynydd Clogau are spatially remote from each other and the closest is at Carno about 12km away. That wind farm has a main zone of visibility along the Carno Valley on slopes mainly to the west, which falls short of Mynydd Clogau. The Llandinam wind farm has the most extensive zone of visibility which includes the valley slopes and plateaux south and west of Mynydd Clogau and the Clogau ridge. Cemmaes is well contained in views from the east, and its main zone of influence lies to the west and does not include Mynydd Clogau. Bryn Titli has a main zone of visibility on hillsides south of Clogau and its theoretical zone extends to include the higher parts of Mynydd Clogau only.
- 6.4.23 The visual relationship of Mynydd Clogau with the other existing wind farms is illustrated in the ES [Doc 3, Fig. 5.3a/b and Fig. 5.29]. The ES wireline images and photographs suggest that Carno is not visible from the Mynydd Clogau site at all, a few blade tips at Cemmaes are theoretically visible, but unlikely to be seen at such a distance. Cemmaes B has yet to be constructed, but would have no additional cumulative effect as it would be seen with an existing cluster. Llandinam would be seen on the plateau horizon to the south, but is relatively inconspicuous as it is some 14km away. Bryn Titli could also be seen, but again it is far away and inconspicuous.
- 6.4.24 The assessment of the zones of intervisibility between existing wind farms confirms that intervisibility does exist; although not all wind farms are visible from high vantage points. Also vegetation and landscape features may curtail views from certain points. An assessment of key zones between ZVIs does not take account of the diminishing visibility of turbines with distance from the viewer. For example, the view of the large wind farm at Llandinam on the skyline recedes into the wider

landscape at a distance of some 15km [Doc. 3, Fig. 5.3b]. The combined ZVIs illustrate intervisibility between wind farms, with or without Mynydd Clogau [Plan I] and it is unlikely at such distances that intervisibility or cumulative effects would be registered as significant. ZVIs for 30km radius have also been prepared as a theoretical exercise to enable the limited visual influence of Mynydd Clogau to be appreciated in the context of the 4 existing wind farms [Plans J and K].

- 6.4.25 It is concluded that factors of distance, the differences in the type and scale of wind farm, the diversity of the landscape, and the different plateau locations of wind farms, are all important factors. From key viewpoints such as Garreg-hir the wind farms are at disparate distances from the viewer, namely 22km to Bryn Titli, 13km to Cemmaes and Llandinam, 9km to Carno and 3 km to Mynydd Clogau. The orientation of the wind farms from a single viewpoint are through a wide range of bearings. At Garreg-hir, for example, the viewer would have to move through some 240 degrees in order to see all the wind farms.
- 6.4.26 Each wind farm is different in size, design, area and arrangement, and is viewed in a diverse landscape, with each occupying a different upland plateau zone separated by diverse and often complex landscape types including broad river valleys. As a result each wind farm is seen as a discrete entity with its own specific characteristics unrelated to other wind farms in the landscape. Moreover, the landscape is not wind energy dominated, but is a diverse and complex area with several wind farms at disparate distances within it. The addition of Mynydd Clogau would not affect this situation.
- 6.4.27 Applying the conclusions of the foregoing analysis to national and local planning policies, it is a major point of objectors that the proposal is not appropriate in the SLA. Apart from the fact that only a minority of the MC turbines would lie within the SLA boundary, there is nothing in PPW or TAN8 to suggest that such landscapes are unsuitable as far as wind farms are concerned. To rule out wind energy projects in such areas as a matter of principle would run contrary to the Government's strategy, given that the resource can only be exploited where it exists in a commercially realisable form. In other parts of the UK neither Local Planning Authorities or the Secretary of State have sought to prevent wind farms in SLAs. It is also interesting to note that the SLA designation for the Western Uplands in Powys was only applied after the Cemmaes wind farm had been built, which shows that the County Council did not see its presence as precluding SLA status. This is reflected in the modifications to the MLP where the SLA policy ENV3 allows for wind farms as an exception.
- 6.4.28 The careful siting and design of the Mynydd Clogau proposal has minimised its effects and so it complies with Structure Plan policy EC4, nor is there any visual conflict with policy EC5A. Structure Plan policy EC20 deals with renewable energy schemes. Given the limited visual impact of the wind farm proposal on the landscape it is considered there would be no unacceptable adverse effect arising in terms of this policy.
- 6.4.29 There has been much debate about PSP policy EC3 and MLP policy ENV3 concerned with SLAs. As previously indicated, it would appear that the majority of the MC turbines would be located outside the SLA boundary, insofar as it can be defined, so they could legitimately be regarded differently from those within the boundary. It is plain that the MC site is on the margin of the SLA where the character of the

landscape is not the same as much of the rest of the upland plateau. It is of note that PSP policy EC3 and MLP policy ENV3 have a significant difference in that the latter contains a wind farm ‘exception’ and relates only to proposals within the SLA, whereas the PSP policy includes development within or adjacent to such areas.

- 6.4.30 MLP policy ENV3 contemplates 2 possibilities with wind farms. First, a wind farm may be appropriate to the character and quality of a SLA. The Local Plan Inspector stated there was no evidence before him to demonstrate that a wind farm would be likely to meet the ‘appropriateness’ test, but that is not to say that such a case cannot be successfully made. Second, a particular wind farm may not satisfy the test, but it is nonetheless justified as a specific exception to the normal policy. As the proposal will not unacceptably compromise environmental quality it does not conflict with MLP policy ENV24. The proposal would not lead to a proliferation of sites, nor does its distant relationship with other wind farms give rise to significant detriment arising from intervisibility and cumulative effects which would conflict with modified policy ENV25.
- 6.4.31 The national planning policy for Wales in PPW states in paragraph 13.1 that renewable energy sources should be exploited “*wherever they have prospects of being economically attractive and environmentally acceptable*”. The use of “*wherever*” does not mean anywhere will do, but it does indicate that there is no policy for an even distribution of turbines throughout Wales and, if need be, they could be grouped together in certain parts of the country. Although there is currently some concentration of existing wind farms in Dyfed, Powys and Anglesey, the large wind farm NFFO contracts have a quite wide distribution throughout Wales.
- 6.4.32 It is accepted that deciding what is “*environmentally acceptable*” tends to be difficult. TAN8 in its paragraph A44 tends to state the obvious that the majority of wind farms will be proposed in the uplands where mean wind speeds are high and that the desirability of exploiting the renewable energy resource must be weighed against the visual impact of turbines. It is submitted that well located and designed schemes such as MC should proceed if the Government is serious about meeting the 10% target with a meaningful contribution from wind.
- 6.4.33 The CPRW position would exclude large proposals in most upland and coastal areas of Wales and other rural locations where residential or community amenity would be adversely affected. Virtually only some semi-industrial locations are left and bearing in mind the need to be where there is an adequate wind resource, the reality is that there would be very few opportunities indeed.
- 6.4.34 It is the case of RES that the MC turbines can be integrated into the landscape, but if the Inspector considers that they would not be appropriate under policy ENV3 there is ample scope to apply the ‘exception’, especially if the turbines are not seen as unacceptably harmful to the character and appearance of the SLA. The fact that a number of wind farms already exist within the SLA must also be borne in mind. CCW have referred to the reference to common land in policy EC3 and the specific PSP policy EC7. However, it is submitted that if the proposal is acceptable within the SLA then it would be reasonable to conclude that it is also acceptable as far as common land is concerned. In any event, views of the turbines from the nearby Bryn y Fawng common land would be virtually non-existent. In relation to the PSP it must not be forgotten that policy EC20 does actually support renewable energy schemes, subject to various criteria.

- 6.4.35 In the MLP, policy ENV2 requires development to generally conform to the the 1992 MLA which has been widely used by participants at the inquiry. The categories of landscape which may be suitable for wind farms, namely 'plateau' and 'hillslopes and saddles' are set out. MC lies within one or other of these categories, or both. In plateau landscapes the MLP notes that there may be some locations where wind farms might be suitable if significant adverse effects on the landscape and nature conservation could be avoided.
- 6.4.36 The MLP does go on to say that certain plateau areas, including the immediate area around Garreg-hir are unlikely to provide suitable locations. It is submitted that the MC site is not in that immediate area. The word 'immediate' was not in the MLA but was added in the MLP and is not defined. However, the distance between the summit of Garreg-hir and the nearest MC turbine would be some 2.7km and even in a large scale landscape this is a considerable distance. Also, the comment about the area around Garreg-hir should not be taken as a prohibition and is not found in the policy itself. It is guidance by a Local Planning Authority which has not objected to the MC proposal. What matters anyway is the effect of MC in terms of landscape and visual effects. The evidence of RES is that the visual impact is *moderate*. This is similar to the judgement of Powys CC at the cumulative inquiry session in relation to the magnitude of change from Garreg-hir for MC.
- 6.4.37 The PSP must be given substantial weight as the development plan and the emerging MLP is so close to adoption that it should be accorded virtually the same weight. What is important in that context is that there is no objection from the Local Planning Authority on grounds that any of its policies have been breached. It is the applicant's contention that the wind farm proposal conforms to those plans and if the site with its limited impact is not considered acceptable for wind farm development, it is difficult to envisage what upland location would be suitable in landscape and visual terms.

CASES FOR THE OBJECTORS.

The main points were:

CCW

- 6.4.38 CCW endorses the value of wind power as an energy resource, but is opposed to developments which would be visually intrusive in a SLA and is also concerned about the cumulative impact of multiple developments. It has its own policies on wind power formulated in 1992 [Doc. 30(a)] and revised in 1999, where policy 5 deals with developments in SLAs [Doc. 30(b)]. When consulted as the Government's statutory adviser on sustaining the natural beauty, wildlife and enjoyment of the countryside it recommended refusal of the proposed MC wind farm to Powys CC [Doc. 28].
- 6.4.39 The Mynydd Clogau site lies in an area of upland plateau, hill slopes and saddles. The plateau provides some of the most extensive views in Mid-Wales towards the Berwyn Mountains, Cadair Idris, Plynlimon and the Kerry ridge. Garreg-hir some 2km to the west of the site is a well-used local viewpoint. The range of undulating landscape to the south-west of the site is particularly attractive, with its upland lakelets and the extensive common areas. Common land lies adjacent to the site and

nearby [Plan F] and PSP policy EC7 recognises its importance. The Bryn-y-Fawnog Common is clearly visible from the site [Doc. 3, Fig.5.3b]. The southern boundary of the site is traversed by a well-used surfaced bridleway which passes the frequently visited Llyn Mawr nature reserve. The track would be used by construction and maintenance vehicles associated with the wind farm which would detract from its present rural tranquility and reduce the recreational enjoyment of visitors.

- 6.4.40 The Macaulay Land Use Research Institute have prepared a visual impact assessment of the Mynydd Clogau scheme for CCW [Doc. 25] which assesses the extent of visual effects from the proposed wind farm itself and taking account of other existing wind farms. The extent of visibility of the top of the rotor arc within 15km radius of view from all existing wind farms and MC would be from the A487 to the west, to Newtown to the east and Rhayader in the south [Plan L]. The increase in views to the top of the rotor arc due to MC, from the current 782.9 km² of existing turbines, views would be 102.1 km² (13.1%) at 15km [Doc. 25, Tables 3 and 4]. The change would be slightly higher at 7km. Within 7km the increase in visibility of the entire structure of the turbines would be 12.1%.
- 6.4.41 The area that would be newly affected by such views as a result of Mynydd Clogau itself is broadly concentrated in the arc between north-west, north and east of the site [Plan M]. If a lower radius of view at 7km is used, the area of overlap between ZVIs of each turbine is restricted, thus reducing the combined total of turbines visible from any location [Plan N(1)]. This illustrates the potentially extensive area around Cefn Coch, Adfa and Tregynon where a considerable number of turbines might be seen. The area of land at 15km over which at least one turbine of MC would be visible at the top of the rotor arc would also include the villages to the north and east where up to 12 turbines would be visible, but there would be little impact on the low lying roads and surroundings of Carno, Llanbryn-mair, Llangadfan or Caersws [Plan N(2)]. Within a 15km radius of view of Mynydd Clogau turbines, the extension of land where any turbines might be visible is mainly to the north, north-east and east, but includes the main road approaches to Newtown from the south and the south-east [Plan O]. The analysis has included the visibility of MC turbines at the top of the rotor arc, nacelle, bottom of rotor arc, and ground level, at 7km [Plan P (1) – (4)].
- 6.4.42 The analysis confirms there would be little visibility of MC at a range up to 15km from land to the south of the site, but views would increase on the hillslopes south of Caersws and Newtown and possibly from the high land to the west and north-west of Llanidloes. At closer distances to the site at 7km the area of land from which turbines may be visible is smaller in absolute terms, but the increase is an area where there are currently almost no such views. This effect is of new impact rather than combined visual impacts, mainly into the valley of the Rhiw, and being closer in the views the turbines would be much more evident.
- 6.4.43 Land above 300m is used to give a broad indication of the extent of the types of land cover from which turbines may be visible and excludes sea, estuary and saltmarsh classes. The analysis has examined land at that elevation and its land cover [Plan Q and Doc. 25, Table 8]. The MC turbines would be visible from 29.3% of such land and 39.6% of land within 7km [Doc. 25, Table 6]. The equivalent figures for wind farms already built are 52.3% and 52.9% [Doc. 25, Table 7]. This shows the effect of visibility of turbines from MC is less than that of existing turbines within each radius of view.

- 6.4.44 An analysis of the visibility of individual turbines at MC [Doc. 25, Table 9] suggests that turbines 3 and 17 would be most visible from the north and north-west; and turbine 9, followed by 10, 11 and 12, most visible from the south-west. Combining the ratio of all parts of the turbine from rotor arc to ground level, the density of turbines in the views towards the site from the north/north-east is likely to be high.
- 6.4.45 An examination of the lengths of roads within 15km from which existing and MC turbines are visible [Plan R], shows turbines may be visible on 83.4km of a total of 254.6km of trunk or Class A roads. The MC turbines may be visible from 17.6km of road, of which 12.1km would be of between 1 – 10 turbines and the remainder between 11 – 17 [Doc. 25, Table 10]. In total, MC would be visible from an additional 9.7km of main roads over that where turbines are currently visible. A similar exercise for Class B and unclassified roads shows that MC could be seen from 153.7km of these types of road, of which 115.3km would be new views of turbines mainly from the north through to the south-east of the site [Doc. 25, Table 11].
- 6.4.46 The foregoing analysis can be related to the context provided by the MLA [Doc. 29] which refers to the “wild and open” moorland, scenic routes and extensive views of the Western Uplands. The unsuitability of the area around Garreg-hir for wind farm development is highlighted, yet the MC turbines will be clearly seen from that viewpoint. The protection given in the development plan to SLAs and common land confirms the sensitivity and high quality of the area within and around the MC site. The existing wind farms in the area show the difficulty of integrating such large vertical elements into the landscape and they are inevitably visible over long distances. In particular, they detract from the open quality of the moorland and already dominate significant areas of plateaux. If this proposal is permitted almost the entire area of upland plateaux in central western Montgomeryshire would be affected by wind turbines [Doc. 5A, Appendix 1, Fig. 3.2] contrary to MLP policy ENV25. To the north-west and south-west of Mynydd Clogau, large areas of the Llanbrynmair Moors, Trannon Moor and the Hafren Forest have been subjected to coniferous afforestation which detracts from those areas, whereas the area lying north-east of the A470 road remains largely unaffected so offering one of the few opportunities to experience open moorland views.
- 6.4.47 It is submitted that the wind farm proposal is in conflict with PSP policies EC3 and EC7 relating to the SLA and to common land. It should be noted that policy EC3 applies to development adjacent to as well as within those areas. MLP policy ENV3 does allow for an exception in the form of a wind farm to its general aim that development in a SLA should be appropriate to its character and quality. However, it must comply with other Local Plan policies, including policy ENV2. PSP policy EC20 also requires that wind farms should not have unacceptable adverse effects on the environment or amenity. It is also submitted that the proposal would compromise the environmental quality of the area extending beyond the SLA and when taken with existing wind farms in the area would be contrary to MLP policy ENV24. In summary, CCW consider that turbines of the size proposed in this sensitive location would have an impact on the SLA, common land and the landscape generally which is adverse and unacceptable.

CPRW

- 6.4.48 Between 1991 – July 2000 some 57 wind farms and single turbine schemes have been constructed in the UK, amounting to about 827 turbines [Doc. 35(a)], with an

increase in hub and overall height. The MC turbines at an overall height of 68.5m would be taller than any other current installation in Wales [Doc. 35(b)].

- 6.4.49 It is obvious that as turbine size increases so must the threshold of significance for impact analysis, so there should be a staged analysis of magnitude and significance of impact in relation to distance. The use of the revised 'Sinclair-Thomas Matrix' [Doc. 34] to estimate the potential impact of turbines of different size suggests that turbines of the order of those at MC have the potential to make a major impact up to 6km, to be clearly visible with moderate impact at up to 14km, and to show blade movement in good light up to 23km. The analysis for the applicants of the various viewpoints undervalues them, particularly those from the north and east of the site, Ty Hir and the southern approach to Garreg-hir [Doc. 50].
- 6.4.50 CPRW supports the objections of CCW and the visual assessment undertaken for them by the Macaulay Land Use Institute. The proposal would be a discordant visual intrusion permeating a visually vulnerable landscape. It would form a part of a rising tide of cumulative impact which, having washed over many parts of the Montgomeryshire horizons, is set to swamp whole landscapes. CPRW consider that the 3 existing sites at Cemmaes A, Llandinam, Carno, together with the approved Cemmaes B and the Bryn Titli wind farm, already far exceed the capacity of the landscape to absorb the individual and cumulative impacts of such large industrial-type features. CPRW support the CCW view that any benefits of the MC scheme do not outweigh the damage to an area of Welsh countryside of acknowledged landscape value. It would be contrary to PSP policies EC3, EC20 and MLP policies ENV3, ENV24 and ENV25.

CUM

- 6.4.51 CUM is a group founded in 1995 with a commitment to preserve the unspoilt uplands of Montgomeryshire from inappropriate development [Doc. 51]. They point out that the Government and public bodies have a duty under section 11 of the 1968 Countryside Act to have regard to the desirability of conserving the natural beauty and amenity of the countryside. CUM have prepared a detailed critique of the landscape and visual assessment in the ES [Doc. 52(a), pages 41 – 52]. The ES devotes little attention to the landscape and visual issues, even though they are of greatest concern; the visual impression of each turbine is misleading, and there is no evidence of the impact of ancillary equipment [Doc. 54, pages 2 - 4].
- 6.4.52 CUM are concerned that the reduced scale and exposure values of many of the figures do not provide an accurate picture of the actual views, that the viewpoints and their locations which have been chosen are extremely selective, and the wire frames and ZVIs do not reflect reality. Some wire frames appear inaccurate or misrepresent what would be seen, ZVI colours are muted which diminishes their true representation, and 3-dimensional images would be much more realistic [Doc. 54, pages 5 – 7, 10 – 16].
- 6.4.53 RES also make much of the change of layout from 20 turbines some years ago to the 17 larger, re-sited turbines now proposed, but there is little physical difference and an actual increase in swept area. In addition, moving the site downhill increases its impact to the north and east where most people live [Doc. 54, pages 8 - 9]. This so-called 'mitigation' is quite unacceptable.

- 6.4.54 It follows that there is fundamental disagreement with the applicant's assessment of the impact of the turbines from various points, which they often state are 'minor' or 'negligible'. Such large structures sited in a high, open landscape which the development plan seeks to preserve and conserve cannot fail to be visually intrusive. It is the high ground which forms the classic horizons of Montgomeryshire and these are of critical importance, with Mynydd Clogau being part of a local horizon where images of it change as one moves around it. The major visual characteristics of such an area are formed by the high and wide open spaces, with long distance vistas in all directions. The alien scale and form of large turbines would draw the eye and compromise the effect of distance.
- 6.4.55 In the nearby valley horizons there is a closer and more intimate view. Here the turbines would be unavoidable and destroy the intimacy of such places. In mixed horizons the turbines would be seen from static positions, such as dwellings, and when in motion. In the latter case, the landscape scene changes with a person's movement through it, but there would be a constant repetition of the image of the turbines each time they re-appeared in view. The introduction of large industrial turbines with moving blades on horizons would upset the viewer's perception of the space, peace and balance of the natural landscape. They cannot be integrated into it.
- 6.4.56 The development plan indicates that the sensitivity of the plateau landscapes means that sites must not have a significant adverse effect upon them, yet in many of the viewpoints and zones of visual influence the harmful effect of the turbines will clearly be substantial. A prime example is Garreg-hir and the use of viewpoint 1. This illustrates the manner in which the wind farm impact has been trivialised by the applicants in their assessment. The development plan indicates that a wind farm site close to this area, which the MLA states provides "the most awe-inspiring views over the whole of Mid-Wales and parts of Shropshire", is unacceptable and this is enough reason in itself to reject the development.

6.5. ECOLOGY AND ORNITHOLOGY

CASE FOR THE APPLICANT

The main points were:

- 6.5.1 A detailed ecological assessment is contained in section 7 of the ES [Doc. 2, pages 88 - 123]. National advice on wind farms in Annex A of TAN8 states that their impact on ecology should be minimal, leaving the land between the turbines unaffected. It also states that there is minimal danger to bird life [Doc. 5C, paras. A55 and A56]. It is not considered that there would be any breach of Structure Plan policies EC5 and 20 or of nature conservation and habitat policies ENV8 or 9 of the Local Plan. The layout also addresses many of the concerns expressed about the 1996 wind farm proposal, including those of the Environment Agency [Doc. 14].
- 6.5.2 The habitat surveys of the site showed it to be of limited ecological value, but locally it does contain some habitats of significance. Much of the site is improved or semi-improved pasture, with significant areas of unimproved acid grassland, marshy grassland, dwarf-shrub heath, flushes and basin mire [Doc. 2, sections 7.1 – 7.4; Doc. 3, Fig. 7.1]. Care has been taken to, as far as possible, site the turbines and tracks to avoid habitats of value. There will be no disturbance of any protected habitats, but

the siting of turbines 7 and 17 on the eastern side of the site would cause limited disturbance to an area of unimproved damp/wet acid grassland. No specially protected, designated or notable plant species, mammals, insects reptiles or amphibians would be affected by the wind farm.

- 6.5.3 The wind farm site does have some ornithological significance,⁹ as revealed in research and surveys undertaken over the site and surrounding locality in 1995 and 1998 [Doc. 2, section 7.5]. Nesting skylarks and meadow pipits were abundant throughout the area surveyed. Black-headed gulls from the nearby Llyn-y-Tarw breeding colony use the area for feeding. Other species in significant numbers were buzzard, raven, carrion crow and starling. Results of winter bird and breeding bird surveys are shown in the ES [Doc. 2, Tables 7.1 and 7.2; Doc. 3, Figs. 7.2 and 7.4]. Birds which hold breeding territories within the survey area and have legal protection or high conservation status are also listed and discussed in the ES [Doc. 2, paragraphs 7.5.1.2.5 and 7.6.3.3 – 7.6.3.6].
- 6.5.4 Objectors have raised particular concerns about skylark, meadow pipit and black headed gull. The skylark is an abundant species and widespread, although it has declined in lowland farming areas by over 50%, which may have led to its RSPB ‘red list’ status. The ES suggests the Mynydd Clogau population is 82 pairs and considered to be of high conservation status [Doc. 2, page 107]. However, this population is well below the threshold of 1% of the county resource that would be needed to reach regional importance. The skylark is not protected under Schedule 1 of the WCA 1981 or Annex 1 of the EC Birds Directive, as is also the case with the meadow pipit. The meadow pipit is also abundant in Britain, with greatest numbers in upland areas, and is not a ‘red list’ species. The 70 pairs at Mynydd Clogau are not of particular conservation value or of more than local significance. The black-headed gull population is of greater value as it forms an important component of the Llyn-y-Tarw SSSI. It is accepted that any significant impact on this population should be avoided, which has substantially declined over the past 70 years. However, as with the skylark and meadow pipit, it does not enjoy special protection.
- 6.5.5 The claim by CCW that there is insufficient data on the impact of wind farms on birds is refuted. There is extensive information to show that upland birds are generally unaffected [Doc. 20b] in terms of both breeding and collisions. This is particularly so with skylark and meadow pipit [Doc. 20a, para. 10]. There have been some recorded collisions involving black-headed gulls, but the risk at the application site is very low or negligible. It has been suggested that the gulls could be harmed by loss of feeding habitat, but there is little evidence to support this [Doc. 20a, para. 12], and the breeding colony itself is over 1km from the nearest turbine position.
- 6.5.6 The submission on habitat disturbance is that the only concern relates to the siting of turbines 7 and 17. It is acknowledged that there has been a difference in the evidence of the composition of the vegetation in that area, but RES now accept that there are some wet heath and base rich flush patches. However, the area is not designated for its ecological value and only a very small loss of habitat would occur. Even so, RES are willing to relocate turbine 7 outside the area [Plan C] if it is felt to be necessary. Turbine 17 cannot be moved and would have to be deleted if it was felt this was justified.

- 6.5.7 There is no evidence to show that a management scheme for the land within the site or nearby, which is hydrologically linked, is necessary, nor any contribution to habitat enhancement.
- 6.5.8 In respect of birds it is submitted that the written submission of Dr Percival [Doc. 20a] demonstrates that the wind farm effects would be low or negligible and the evidence from existing wind farms is that they do not cause any significant local population decline. However, the applicant is willing to accept conditions requiring an ornithological monitoring programme to be undertaken and also to avoid major construction works in the breeding season [Doc. 67(B)].

CASES FOR THE OBJECTORS

The main points were:

CCW

- 6.5.9 CCW are concerned about the implications of the proposal for ecology and bird life [Doc. 28, 2. Ecology] without appropriate amendment of the layout and imposition of conditions. It should be borne in mind that policies EC5 and EC5A of the Structure Plan and Local Plan policy ENV9 require that development should not cause unacceptable harm to ecology, wildlife, habitats or landscape features. In response to the 1992 Rio Summit, in 1994 the Government published a Biodiversity Action Plan to conserve the more threatened species and habitats in Britain.
- 6.5.10 There is some concern that breeding curlews are displaced from wind farm sites [Doc. 32(a)] and other species are also affected. The application site supports a notable population of skylark, which is a priority species listed in the Action Plan [Doc. 26]. The skylark and meadow pipit which also occur on the site have been identified as species which are suffering nationally a significant reduction in breeding success. These birds and associated predators, such as merlin, are largely dependant on agriculturally unimproved grasslands and heath. It is considered that it is vital to conserve upland blocks of Montgomeryshire to ensure their continued survival. There is evidence to suggest that the destruction of habitat and the impact on skylark territories by wind farm construction [Docs. 32(b) and (c)] could lead to population decline. There is insufficient data to be confident that there will be no adverse impact on these species from the proposed wind farm development.
- 6.5.11 There is a population of black-headed gulls at Llyn-y-Tarw. In 1998 a total of 266 nests were recorded there, with some 27 additional nests at Llyn Mawr. These colonies represent 80% of the Montgomeryshire population and 7.3% of the Welsh population as a whole [Doc. 27(a)]. In 2000 the breeding population at Llyn-y-Tarw inexplicably declined to 5 pairs. Habitat loss and disturbance have been cited as key factors in the decline of the black-headed gull and as they use the application site their feeding behaviour could be affected by the wind farm [Doc. 27(b)]. Disturbance might also occur from construction works, subsequent operation and improved road access.
- 6.5.12 CCW believe that the developer should be prepared to fund a monitoring programme to focus on the response to the wind farm of skylarks, meadow pipits and black-headed gulls, and a condition should be imposed on any permission to achieve this.

The written evidence of Dr Percival for the applicants does not demonstrate that there would be no adverse impact and it appears to support the need for more monitoring studies to be made.

- 6.5.13 There is concern about the siting of turbine 17 within an area of species rich wet flush heath and turbine 7 within a base-rich flush. It is considered that these turbines should be re-sited to avoid these habitats which are scarce in mid-Wales. Also, any development of the site should not involve 'improvement' of peatland drainage which would release carbon dioxide and destroy wildlife. The excavations for the turbines and tracks could result in peatland loss and the additional improved access-ways provided on the site might encourage the owners to increase stocking levels.
- 6.5.14 The development should include a Land Management Scheme for the semi-natural moorland vegetation within the site to control cultivation, drainage and stocking rates. It is appreciated that RES do not control the overall use of the land within the site, but the landowners could have been involved in some form of Agreement to achieve this. Without such a management scheme it is submitted that the proposal would harm ecological interests and be contrary to PSP policies EC5 and EC5A and MLP policy ENV9. This constitutes a significant objection to the wind farm proposal.

CPRW and MWT

- 6.5.15 The Wildlife Trust has over 1,000 members and controls 18 nature reserves in Montgomeryshire, including Llyn Mawr SSSI. Llyn Mawr has a diverse range of marginal and aquatic habitat and is of considerable ornithological importance, being extensively used by waterfowl. These include overwintering Whooper Swan, Goldeneye, Teal, Tufted Duck and Pochard, and a breeding colony of Black-headed Gull.
- 6.5.16 It is contended that there are errors in the ES mapping of habitats on the site (Doc. 3, Fig. 7.5). Of particular concern is the area identified as acid grassland around turbines 7 and 17. This is actually a mixture of species-rich wet heath and base rich flush. Base rich flushes are scarce in Montgomeryshire and the area concerned is the only known local site for the moss *Scorpidium cossonii*. In the case of species-rich wet heath, the Montgomeryshire Habitat Survey (CCW 1997) reports a total of only 9ha in the whole area. There is, therefore, strong objection to the siting of turbines 7 and 17.
- 6.5.17 The Mynydd Clogau site is part of an important upland block holding a mosaic of plant communities and providing a valuable wildlife habitat. The applicant has been wholly remiss in not proposing a Land Management Scheme in accordance with Structure Plan policy EC5A as part of the development to try and provide some safeguard of the site's long term ecological interest.
- 6.5.18 The ES for Mynydd Clogau reports notable numbers of skylark and meadow pipit in the locality. It is essential that this population should be maintained over the application site, yet the applicant suggests no mechanisms to achieve this. The ES also recognises that black-headed gulls will utilise the site and that feeding behaviour could be adversely affected by the wind farm. These effects could undermine the conservation efforts being made at Llyn Mawr, as feed behaviour affects breeding productivity. The black-headed gull population at both Llyn Mawr and Llyn-y-Tarw represent 80% of the Montgomeryshire population and 7.3% of the Welsh population.

- 6.5.19 There is clearly a need for a bird monitoring programme at the site and the evidence on this by CCW is supported, as well as the need for a land management scheme to avoid biodiversity loss.
- 6.5.20 It is unfortunate that no details of the transmission line from the site to the grid network are included in the proposal. Poles or pylons can be a direct hazard to birds and can provide convenient perches for corvid species leading to increased predation of ground nests of species such as skylarks or black-headed gulls.

CUM

- 6.5.21 CUM are critical of the ecological assessment provided in the ES [Doc. 52(a), pages 61 – 64]. It is considered that the wind farm should provide some ecological gain to compensate for its potentially damaging effects, yet the ES offers nothing in mitigation. The basic approach of the developers is to suggest that the impact on individual species will be small and so can be ignored, but it is this sort of argument which leads to the gradual erosion of habitats and decline in species. A similar point applies to the risk of bird strikes, especially if a rare species is involved where even one death can be significant.

6.6. NOISE

CASE FOR THE APPLICANT

The main points were:

- 6.6.1 Successive noise assessments have been undertaken, accompanying the original planning application (where the nearest property was some 600m from the closest turbine), and the current submission (where the separation distance to the nearest residential property has increased to about 820m). The background measurements for this latter assessment were taken over a 2 week period in May 1998 at three residential locations; Castell Uchaf, Ty Uchaf and Ty Hir. Measurement at 3 locations was considered adequate in the light of preliminary assessments of the distances and topographical relationships of nearby properties to the proposed turbine locations and the noise emission levels of the turbine type likely to be used.
- 6.6.2 In the event, the data for Ty Uchaf was not used, as rain caused the recording equipment to malfunction. The background noise data from the other 2 properties were used to assess the noise impact of the proposed turbines at 27 representatively located properties up to 2580 metres from the nearest turbine [Doc 2 Table 6.3 p79; Doc 3 Figs 6.1-6.3; Doc 17/10]. Further background measurements were undertaken at Ty Uchaf in 1999 at the request of NAW [Doc 63; Doc 5A Appendix 3]. The subsequent measurements for Ty Uchaf revealed significantly higher background noise levels than previously assumed, and correspondingly reduced the predicted levels of turbine noise relative to background noise for this property.
- 6.6.3 The noise assessments were undertaken with the findings and recommendations of the ETSU document "The Assessment and Rating of Noise from Wind Farms" NWG Final Report, September 1996 [Doc 17/6] in mind. This report, whilst not replacing the advice contained in government guidance on the assessment of noise from wind

turbines, represents the consensus view of experts involved with both the assessment and control of turbine noise effects. It is the generally accepted and only detailed methodology specifically available for this purpose.

- 6.6.4 Details of the noise assessment methodology, recorded data and results of analysis, together with tonal analysis of the turbine type likely to be used, are contained in the ES and Additional Environmental Information Statement [Docs 2 (Section 6); 3 (Figs 6.1-6.10); 5A (Section 6 & Appendices 2-4)]. The assessments considered the impact of noise emissions from the proposed turbines at neighbouring homes for a range of wind speeds up to 10m/s (measured at a height of 10m) on occasions when the dwelling would be down wind of the turbines. In general, background noise levels increase more strongly with wind speed than do wind turbine noise levels. It is therefore expected that extrapolation of data to high wind speeds has underestimated the background noise levels, rather than the reverse.
- 6.6.5 Noise from the turbines is therefore likely to be relatively less audible in windier conditions. Based on NWG guidelines, the thresholds of acceptable noise levels which are applicable are 35dB(A) or background LA90+5dB(A) for the quiet daytime period (when the objective is to preserve amenity) and 43dB(A) measured externally or background LA90+5dB(A) during night-time hours (to avoid sleep disturbance).
- 6.6.6 The noise assessment results predict that, for all wind speeds, all assessed residential properties would experience noise levels well within the limits specified in the NWG guidance. The dwelling identified as most affected is predicted, under worst wind direction conditions, to experience noise levels 6.6dB(A) below the absolute 35dB(A) quiet daytime threshold at a wind speed of 3m/s, changing to 3.1dB(A) below the threshold at 10m/s. Potential night-time received noise levels would be between 11.1 and 14.6dB(A) below the absolute night-time acceptability threshold of 43dB(A) [Doc 2 Tables 6.10 & 6.11, p86].
- 6.6.7 Tonal analysis of noise from the turbine type likely to be used has revealed no audible or inaudible tones; and the subjective impression obtained from the tests was also that the turbine noise was not tonal [Doc 5A Appendix 2]. Conditions limiting noise emissions from the development, including tonal noise thresholds, have been suggested by the applicant [Doc 67 (A)]. These have been arrived at in discussion with the Council's Environmental Health Officer and agreed with the local planning authority. They provide measurable, enforceable limits that would ensure that noise nuisance would not arise.
- 6.6.8 Although CUM and some individuals criticise the manner in which the noise assessment was undertaken and its findings, and other individuals express general concerns about noise, there is no substantive evidence that the noise predictions are inaccurate. The distance of any turbine from the nearest dwelling would greatly exceed the 350-400m distance referred to in TAN8 paragraph A33 beyond which experience has shown that there is unlikely to be a significant noise problem.
- 6.6.9 Moreover, the noise assessment was carried out even though ETSU guidelines confirm that no background noise survey is needed for dwellings where the expected wind farm noise level does not exceed 35dB(A) [Doc 17/6 (p 99 para 1.1)]. The ES confirms this to be the case for Mynydd Clogau [Doc 2 (ES Vol II Table 6.5 p 80)]. The local planning authority raises no objection in respect of noise; the Government recognises that, provided suggested noise limits are met, noise is no longer the issue it

was [Doc. 16/4 (p 41)]. Given the distances to occupied dwellings and the extensive conditions agreed with the local planning authority to enable appropriate noise limits to be enforced, there is no sustainable objection to the proposal on the basis of noise.

- 6.6.10 In summary, therefore, the evidence demonstrates that the Mynydd Clogau proposal would not result in noise nuisance for people in the locality, and that planning conditions would provide appropriate safeguards in this respect. Objections to the proposal on the basis of noise are therefore unfounded.

CASES FOR THE OBJECTORS

CUM

The main points were:

- 6.6.11 The site, in common with other upland areas of Montgomeryshire, is in a very quiet locality, with extremely low levels of background noise. It is unsuitable for industrial noise intrusion. The peaceful environment is much valued by people who live in it and those visiting the area. It is important not only to residents in their houses, but also to people in their enjoyment of the outdoor environment. Prevention of noise pollution should protect the wider environment, not just the amenity of residents.
- 6.6.12 People who live near existing turbines in mid-Wales find the persistent, repetitive noise associated with them disturbing and demoralising. Turbine noise affects not only people living close to the site but everyone who uses the roads and rights of way in the locality, particularly those actually passing through or adjacent to the site. The many visitors who come to caravan or camp in the area would have their enjoyment of the locality spoilt by turbine noise. Although dependent on wind speed and direction, turbine noise can occur even when low cloud, fog or darkness obscures sight of the turbines. Turbine noise would detract from enjoyment of the special qualities of quietness, remoteness and solitude of the uplands.
- 6.6.13 Criticisms are made of the extent and accuracy of background noise level measurements undertaken by the applicant and the applicability of the turbine noise prediction model to the hilly terrain of the site and its surroundings [Doc 52(a)(Section6)]. The criticisms include: failure to accurately identify and assess all dwellings within a 3km range of the proposed turbine positions; omission of the closest property from those selected for background noise measurement; data collected for 1 of the 3 background noise measurement positions was flawed and unusable [Docs 56(b); 63]. The predictive model used by RES dates from 1982. It therefore fails to reflect the extensive recent work on the noise prediction undertaken on behalf of ETSU. These shortcomings call into question the reliability of the predictions of turbine noise levels in relation to background noise levels.
- 6.6.14 Moreover, the noise data for the proposed turbine type have been supplied by the Danish manufacturer. The noise prediction model reflects noise propagation under flat terrain conditions. The DTI NWG acknowledges that hill slope and valley areas produce different results, especially where wind speeds can be high enough to trigger turbine operation but where nearby dwellings occupy sheltered hollows and do not experience a parallel increase in background wind noise [Doc 52(a)(p54)]. Turbine noise at higher wind speeds may also cause disturbance at properties in sheltered locations. The experience of people living up to 2km from wind farms elsewhere

[Docs 52(a) (p54); 56(a)] contradicts DTI NWG claims that there should be little impact on properties more than 350-500m from the site.

- 6.6.15 Planning regulations do not give clear guidance on what level of noise is acceptable; however noise is a material consideration in assessing the acceptability of development. Government guidance in TAN 8 (paras A29-30) states that BS4142 may not be an appropriate method of assessing wind turbine development in certain circumstances [Doc 5C]. BS4142 is not applicable to areas with background noise below 30 dB(A) and is designed for use in mixed residential and industrial areas. Given the rural nature of the site, low background noise levels and wind speed profile, use of BS4142 is inappropriate here. The combined effect of the wind turbines should be determined by reference to the particular character and sensitivity of the area.
- 6.6.16 The noise environment of the Mynydd Clogau area is extremely quiet. Night-time background noise levels below 20dB(A) were frequently recorded by RES when conducting the noise assessment. Mechanical noise from the turbines will be clearly audible and intrusive because of its different character to existing background noises such as bleating sheep and barking dogs. However, noise monitoring equipment employed once the turbines are operating will not be able to distinguish noises of differing character, since it will simply measure noise levels. This has led to wind farm noise disturbance elsewhere being immune from enforcement [Doc 52(a) (p54)].
- 6.6.17 The reliance by the DTI NWG on absolute low level thresholds based on sleep disturbance criteria where this would be higher than background noise level plus 5dB(A) fails to safeguard against disturbance from noise in very low background noise conditions. An environmental noise survey by independent acoustic consultants for Ceredigion Council in connection with a wind farm proposal at Capel Cynon concluded that the environmental noise thresholds recommended by the DTI NWG for quiet rural areas is too high [Doc 52(a) (p58-60)]. This is the only truly independent professional assessment of wind farm noise thresholds.
- 6.6.18 The selected threshold of +5dB(A) over background, defined by the NWG as noise of marginal significance, means in practice that noise will be audible and likely to cause complaints from those people who are reasonably sensitive to noise nuisance (according to WHO, the majority of people) and who decide to defend their rights [Doc 52(a) (pp58-60)]. An increase in noise intensity of 5 decibels is a significant change, given that the decibel scale is logarithmic, not linear [Doc 55]. The House of Commons Welsh Affairs Committee Report, 1994, recommended the adoption of noise limits which ensure that wind farm noise of mechanical origin is inaudible at any neighbouring dwelling [Doc 52(a) (p53)].
- 6.6.19 WHO also recommends that, in order to avoid negative effects on sleep, the equivalent noise level for continuous noise should not exceed 30dB(A) indoors. In the presence of a large proportion of low frequency noise, or where the noise is intermittent, a still lower threshold should be applied if conditions of restorative sleep are to be maintained [Doc 52(a) (pp59-60)].
- 6.6.20 The DTI NWG guidance cannot be relied upon as an impartial yardstick against which to assess the acceptability of wind turbine noise, since they are produced by the industry to enable development to proceed, not to prevent degradation of the environment. The selection of an absolute noise acceptability threshold in low

background noise environments rather than a fixed margin above background noise is specifically stated as being to avoid undue restrictions on developments in the light of their wider national and global benefits.

- 6.6.21 The potential infrasound effects of the wind farm proposal are completely ignored by the RES noise report. Information from a consultant in structural dynamics and earthquake engineering indicates the a wind turbine is likely to generate infrasound comparable to “a small continuous earthquake” [Doc 52(a) (pp60-60a)]. Low frequency vibrations can adversely affect people’s health. Given the lack of research into the malign effects of wind power generated infrasound, the precautionary principle should apply; there should be a moratorium on wind power.
- 6.6.22 CUM conclude that notwithstanding the shortcomings of the noise assessment carried out, it is clear that the change in the sound component of the local environment would be substantial and have considerable potential for annoyance. Given the tranquillity of the area and the importance of this to the quality of life of those who experience this, the likely noise effects of the turbines would be unacceptable.

Mr P Fenton, Llwyn Celyn Holiday Home Park

- 6.6.23 Mr Fenton gave evidence from his perspective as owner of the nearby Llwyn Celyn Holiday Home Park. The holiday park, situated opposite the property Pant included within the noise assessment, would be vulnerable to the adverse noise effects from the wind turbines. Llwyn Celyn lies downwind of the proposed turbines in a position where noise is likely to be funnelled on the prevailing winds along the valley between Mynydd Clogau and the Cefn Gwyn ridge to the north-west. Although the environmental statement dismisses noise as an issue, it is evident from residents living close to wind farms elsewhere that there are many noise problems associated with existing developments. The significance of noise as an issue is also confirmed by the considerable coverage contained in government guidance on renewable energy development. The turbine type which the applicant has indicated is likely to be used has given rise to particular noise problems which are currently unresolved [Doc 43]. This provides grounds to believe that noise effects may be more severe and widespread than assumed by the noise assessment.

Mr J Nichols and Ms L Morley, Ty Uchaf

- 6.6.24 In their written submissions the owners of Ty Uchaf, 960m from the nearest proposed turbine position, refer to the audible impact of the wind turbines in such a quiet rural location. They consider that the complexities of the sound propagation and the effects of terrain and topography are such that noise impacts from the turbines cannot be predicted with certainty. The character of turbine sound compared to the prevailing noise environment is more important than a simple comparison of noise levels. Low frequency sounds can be particularly intrusive and disturbing. Turbine noise can have significant long-term effects on physical and psychological health. The many complaints by people living in close proximity to wind farms demonstrate the failure to anticipate the noise consequences of turbines. In addition to the adverse effects on residential amenity, their plans to develop an acoustic music studio at Ty Uchaf would be impossible to pursue.

6.7. TRAFFIC AND ACCESS

CASE FOR THE APPLICANT

The main points were:

- 6.7.1 It is estimated the construction phase of the wind farm would take about 6 months, based on movements between 0700 – 1900 hours on 5 days a week. The details of traffic and access proposals are contained in sections 4.4 – 4.6 and 9 of the ES [Doc. 2], its 1998 Addendum [Doc. 4], and the 1999 additions [Doc. 5, pages 3 – 6].
- 6.7.2 The proposed route to the site for turbine and equipment delivery traffic, including abnormal loads, was devised after considering various alternatives and in consultation with Powys County Council. From the A483 Welshpool – Newtown road, the route would follow the B4390 through Berriew, Manafon to New Mills. The construction crane would take a slightly different route through Berriew from the A483 road to avoid a ‘listed’ canal bridge on the B4390. Just beyond New Mills the route would bear right onto the C2015 road and then left over Llanwyddelan Bridge. It would then continue along the C2015 road through Llanwyddelan and Adfa, before turning south onto the C2014 Bwlch-y-ffridd road and turning right onto the bridleway track up to the site. The total distance from the A483 road is about 18km and the time taken to travel from Berriew would be about half an hour. Various traffic management measures, visibility improvements and provision of lay-bys would be undertaken along the route in the interests of road safety and vehicle movement.
- 6.7.3 The total number of two-way lorry and abnormal load journeys involved from Berriew is estimated at 202, mainly over a 6 week period. The 68 abnormal loads for the large construction cranes and turbine delivery involved during that period would be a maximum of only 8 journeys per day. They would travel under controlled conditions to ensure highway safety and with minimum disruption to residents. Although the Highways Authority have requested that 12 lay-bys are created along the Berriew route [Doc. 4, Fig. 3a], it is considered that not all of these are necessary because the loads would be of short duration, controlled, and few in number. This particularly applies to some or all of those proposed along the C2015 road to Adfa [Doc. 4, Fig. 3a, Nos. 7.2 – 7.8]. There could also be some unnecessary loss of hedgerow if all the lay-bys were installed.
- 6.7.4 The bulk of the construction traffic, mainly carrying stone and concrete, would be some 1331 two-way journeys in total. They would travel along about 5km of road from Y Foel Quarry which is located west of Cefn Coch. It is not now proposed to obtain any stone from on-site borrow pits and it would be sourced from Tanyfoel Quarry [Doc. 13(b)].
- 6.7.5 In response to concerns raised during the inquiry by individual objectors, CUM and Berriew Community Council, about the provision of various improvements to the route to the site from Berriew, discussions have continued with the Highways Authority. Diagrams have been produced to satisfy the Highways Authority that it is possible for large vehicles to manoeuvre through the narrow streets and past historic buildings in Berriew [Doc. 66 and Plan D]. Broad agreement has been reached with them and a draft section 278 Agreement prepared, but it has not been possible to formalise this pending a decision on the planning application [Doc. 68A and B]. It is considered that the situation can be satisfactorily controlled by means of appropriate

negative conditions [Doc. 67B] and the Council are in agreement with this course of action.

- 6.7.6 RES are confident that, with appropriate highway works and traffic management measures in place, there will be no difficulties in negotiating the route to the site and even if there were difficulties they would be short-lived given the limited period needed for construction of the wind farm.
- 6.7.7 CUM and others have objected to the use of bridleway 26 to gain access to the site for construction and maintenance purposes. In agreement with the Highways Authority the bridleway could be made the subject of a temporary closing order for the short construction period and a diversion route provided. The large construction vehicles would use the temporary diversion route. It is also submitted that since the wind farm site landowners have rights to use the bridleway for vehicles, there is nothing to prevent access for wind farm vehicles during its operational period and visits would be no more than once a week [Doc. 66].

STATEMENT OF HIGHWAY AUTHORITY

- 6.7.8 As Highway Authority, Powys CC stated at the inquiry that following discussions with RES it had been agreed that the most acceptable route to the site is from the A483 trunk road and along the B4390 Berriew – New Mills road, then onto the C2015 road through Adfa. Considerable works will be required at specific locations to enable construction traffic to reach the site without compromising highway safety, and these are outlined in the ES Addendum and additional 1999 information [Docs. 4 and 5A].
- 6.7.9 The Highway Authority do have concerns that agreement has not been finalised on the number of improvements to be made and traffic management arrangements. Consequently, it is considered that appropriate conditions should be imposed on any consent for the wind farm to safeguard free flow of traffic and highway safety interests [Doc. 13(a)].
- 6.7.10 The note prepared by RES in respect of using bridleway 26 is agreed [Doc. 66]. The Council have also responded to particular safety queries raised by Mr J I Evans at the inquiry [Doc. 13(c)].

CASES FOR THE OBJECTORS

The main points were:

Berriew Community Council

- 6.7.11 In their written representations and in a short comment by Clr. W D Cooke at the inquiry, the Council expressed concern about the passage of large vehicles through the centre of Berriew which could have difficulty in manoeuvring past 7 historic properties in particular. The Council was not represented during the later stages of the inquiry to comment on the outcome of discussions between the applicant and Highway Authority on that matter.

CUM

- 6.7.12 It is considered that in respect of traffic and access matters the proposal would have adverse effects on the local population and the use of the minor road network in the area. This would be contrary to Structure Plan policies EC20A and T12. It is also considered that there has been a lack of proper discussion with the Highway Authority about the potential highways problems, contrary to the advice in TAN18, paragraph C10.
- 6.7.13 It is not clear from the various volumes of the ES whether the stone for the access tracks would be obtained from on-site borrow pits or from Tanyfoel Quarry.
- 6.7.14 There is no doubt that the proposal would increase traffic on narrow local roads. Local residents, farmers, caravan site operators, hauliers and other businesses would all suffer. Many people who walk the lanes or ride horses or cycles would feel unsafe. The use of bridleway 26 to reach the site is questioned. If it is to be diverted during the construction period, details should be provided, and its subsequent use by vehicles to access the site may be illegal [Doc. 56(c)].
- 6.7.15 There is a real concern about large vehicles holding up traffic and causing delays, especially in an emergency. The table of vehicle movements provided by the applicants is misleading as it treats a two-way journey as a single trip. If this is corrected by doubling the RES figures for total journeys and the likely trips of site personnel and managers are added, then the total number of journeys during the 6 month construction period could be 6,968 [Doc. 52(a), pages 68 – 70].

6.8. ARCHAEOLOGY

CASE FOR THE APPLICANT.

The main points were:

- 6.8.1 Several desk-top and field surveys have been undertaken for RES by CPAT. A total of 15 archaeological sites were found within the site area where turbines would be sited, only 1 of which had been previously recorded [Doc. 2, Sections 8.1, 8.2 and Appendix 9; Doc. 3, Figure 8.1]. The countryside around the site and the area within it where the original 1996 layout was proposed contain a significant number of prehistoric monuments.
- 6.8.2 However, the area further down the hillside where the current layout is proposed contains no evidence of that period, having been subjected to significant agricultural improvement. Archaeology found within this area is of a medieval and post-medieval nature and is concentrated around former farmsteads. These are building remains, enclosures and a peat bank at Cerrigllwydion in the west; building and field system remains of Bwlch-y-gors near the middle of the northern boundary; and building remains and ridge and furrow at Pant Glas near the eastern end of the site. None of the sites are considered to be of national importance.
- 6.8.3 The siting of the turbines would not significantly affect the visible built remains above ground, but some of the cultivation features could be disturbed during construction. It is proposed that a archaeologist should maintain a watching brief

over the site during construction to record these features and any sub-surface finds, as well as assessing if any disturbance might possibly arise from the access road to the site where it crosses over a Roman road to the east (Doc.2, Section 8.3 – 8.6). Subject to these mitigation measures and appropriate conditions, which CPAT have accepted, it is considered that the proposal would have no unacceptable effects on the archaeological sites or their settings. Accordingly, there would be no conflict with Structure Plan policy EC16 or policies ENV19 and 20 of the Local Plan.

CASE FOR THE OBJECTORS

The main points were:

CUM

6.8.4 CUM feel that the approach adopted to the human past is too clinical. The Western Uplands, of which Mynydd Clogau is part, retain substantial remains of thousands of years of human occupation as an integral part of the landscape. The open upland environment must have shaped and dominated the sensory output of Bronze age settlers long ago and those who came after them. They would all have appreciated the space and freedom around them.

6.8.5 As indicated in WOC 60/96, paragraph 10 and Structure Plan policy EC16, the desirability of preservation of the setting of monuments is a material consideration. The sites at Mynydd Clogau may not be grand or impressive, but they are a component of the landscape and the 'sense of place' which is felt by local people. This would be destroyed if turbines were erected.

6.9. TOURISM, RECREATION AND RIGHTS OF WAY.

CASE FOR THE APPLICANT

The main points were:

6.9.1 It is recognised that tourism is a major force in the economy of Powys and that it is important that aspects of an area which are significant in attracting visitors are not seriously affected by insensitive developments. However, it is not accepted that there is any evidence to show that wind farms can be regarded as having an adverse effect on tourism, and examples in Cornwall suggest otherwise.

6.9.2 In 1995 a customer survey at the Mullion Holiday Park in the Lizard AONB, just 2km away from a 14 turbine wind farm, did not reveal any mention of the wind farm being a cause for concern and there has been no effect on the bookings at the caravan park since the wind farm opened. An analysis of the visitors book at the Deli wind farm exhibition centre showed that it was visited by over 72,000 persons between April 1992 and the end of October 1995, with an estimate of a further 150,000 persons having used the car park just to look at the turbines. Over a 2 year period of some 6,000 questionnaires being completed by visitors, only 2 showed disapproval of the wind farm. A new Centre for Renewable Energy Education is now under construction after being approved by the Secretary of State and supported by the North Cornwall District Council. The Lakefield Caravan Park and Equestrian Centre

close to the Deli wind farm has found that visitors like turbines [Doc. 23(a)]. The 1994 holiday guide to South-West Cornwall includes a photograph of a wind farm with text drawing attention to it [Doc. 21(a)], as does the South West Regional Development Agency [Doc. 21(b)]. Also, further wind farm projects have been approved in Cornwall which hardly suggests that tourists are leaving in large numbers because of them.

- 6.9.3 Other examples of encouraging tourism are the Swaffham turbine viewing platform and eco-centre in Norfolk and visitor centre proposals at Four Burrows wind farm, Carrick. In Wales the Centre for Alternative Technology at Machynlleth demonstrates renewable energy projects, including wind turbines, and is a top tourist attraction in Mid-Wales. It is interesting to note that in press articles citing reasons for a decline in Mid-Wales tourism, it is factors such as cheap foreign holidays and the weather which are blamed rather than wind farms [Doc. 23(d)]. In terms of both tourism and recreation, wind farms are included as features for walkers to visit. Examples are an outdoor leisure route past a wind farm near Gawthwaite, Cumbria [Doc. 23(b)] and a 'Local walks around Machynlleth' leaflet – 'Walk 11: Farming the Wind' which includes the Cemmaes wind farm [Doc. 23(c)].
- 6.9.4 With regard to the evidence of Mr Fenton of Llwyn Celyn Caravan Park it is submitted it should carry little weight and that evidence presented on behalf of RES should be preferred. The letters from his caravan occupiers were orchestrated by his newsletter [Doc.41]; he continues to use the brochure lauding the merits of the locality; and the re-valuation was done in ignorance of wind farms and comparing them to development such as gas terminals and power stations [Docs. 40(a) and (b), E].
- 6.9.5 The ES has dealt with questions of safety for the public passing near to the turbines using rights of way [Doc 2, section 10.3]. No safety objections from the County Council have been raised in respect of the proximity of turbines to the rights of way. Blade damage is most unlikely, but in any event the turbines are some distance away from public paths and in extreme storm conditions, such as that which hit Cemmaes some years ago, the chance of persons being around is remote. There is no record of being hit by debris or blade ice. At many wind farm sites the public are encouraged to walk right up to the turbines and animals often graze all around them.
- 6.9.6 The nearest footpath to a Mynydd Clogau turbine would be 70m east of turbine 7. This is well within the guideline of a distance equal to the tower height recommended by Powys CC, which in this case would be 45m [Doc. 19(c)]. The Powys CC guideline for bridleways is 200m or double the turbine tower height. The nearest turbine is some 480m from a bridleway. It is submitted that there would be no significant risk to the safety of walkers or horse riders.

CASES FOR THE OBJECTORS

The main points were:

General points.

- 6.9.7 Concern was raised by a number of objectors about the perceived adverse impact on tourism and informal recreation which would arise from the wind farm. A general

point made was that an industrial development in the form of the wind farm would be foreign to the reasons why people choose to visit the Montgomeryshire area. CCW introduced a letter from Mid-Wales Tourism which supported this stance [Doc. 31]. The wind farm would not be compatible with the tranquillity, openness and natural character of the landscape. If visitor numbers were affected then it would have a serious effect on the local economy. Additional specific points made in oral and written representations are set out below.

Mr P Fenton/CPRW

- 6.9.8 Mr P Fenton and his wife own Llwyn Celyn Holiday Home Park at Adfa [Doc. 40(a)]. This is sited off the county road leading past the track to the wind farm site and would be about 2.4km from its eastern side, with views of the turbines from about half of the 53 static units [Photo. 3]. The park offers tranquil surroundings where people can enjoy quiet pursuits in an area of great beauty. The caravan occupants contribute to the local economy by spending on rents, shopping, and visiting local attractions.
- 6.9.9 Since 1994 the Fentons have invested heavily in the caravan park and a recent valuation confirmed the asset value had doubled [Doc. 40(b)B]. In 2000 they considered expanding the site and had it surveyed [Doc. 40(c)], but then found out about the wind farm proposal. A re-valuation of the site has found it would lose 25% - 50% in value if the wind farm is built [Doc. 40(b)E].
- 6.9.10 Many of the caravan occupiers have indicated they would vacate the site as it is felt it would suffer from visual intrusion and noise [Doc. 41]. There are other caravan parks in the locality which have views of the proposed site and are equally concerned, as is the main caravan distributor [Doc. 44]. The number of pitches totals 400 which, assuming an annual revenue of £5000 per pitch [Doc. 40(d)], generates £2,000,000 per annum in the local economy. The arrival of the wind farm would seriously threaten this benefit to the area and it is contended that tourism would suffer. The Wales Tourist Board appear to share this concern in their 'Tourism 2000' strategy [Doc. 42]. Also, the British Horse Society objection is supported as there will be a safety risk to the horse riders and trekking establishments in the area. The objector fears that the reality of the effects of visual intrusion, noise, and construction traffic arising from the wind farm would be quite different to that claimed by the applicant, as has been shown by the actual experience of persons living near other wind farms [Doc. 43].

Mr D Oliver

- 6.9.11 Mr D Oliver, the owner of Cefn Coch Caravan Park which caters for 70 static holiday units and faces towards the wind farm site, believes that the desire of his customers to enjoy natural beauty and quiet enjoyment away from the industrialised areas where they normally live would be thwarted by the proposal and he would have great difficulty in attracting new customers. Apart from supporting the wider local economy, the caravans help to subsidise his 100ha farm holding to the extent of some 80% of his income, so this is also at risk. The views from Cefn Coch would be overwhelmed by the turbines only some 3km away [Photo 2].

Mrs M Watkin/CUM

- 6.9.12 Similar views to those at Cefn Coch Caravan Park are obtained from the Cefn Coch Inn and the licensee, Mrs M Watkin, believes the ambience of her function room which looks out over unspoilt countryside will be destroyed. The business is heavily dependent on the tourist trade and she believes up to 70% of her trade would move away if the wind farm was approved because the inn would no longer enjoy an attractive rural setting. This would also affect employment, such as the 10 part-time local staff she employs in the tourist season.

Ramblers Association/CPRW

- 6.9.13 CPRW and the Ramblers Association [Doc. 46] state that hill walking is a popular activity, with its relative ease of access and extensive visibility across open horizons. The uplands have the important characteristics of timelessness and solitude, where people can gain respite from the pressures of modern urban life. The size, colour and movement of industrial turbines contrast with the moorland landscape, attract attention in vistas, and are an alien element. Mynydd Clogau is often frequented by walkers on its numerous footpaths [Plan E] and the CROW Act 2000 will result in the area being designated as open country for people to roam freely. To install a power station would be against the spirit of the Act.

Mr S Martin/CPRW

- 6.9.14 Mr Martin is Chairman of the Shropshire Branch of CPRE but appeared on a personal basis as owner of a cottage near Trefeglwys, some 9km from the MC site. He has viewed other wind farms at Llandinam, Bryn Titli and Carno and is aware of their visual impact when walking through the area. He is particularly concerned about the effect of MC on Garreg-hir with its commanding views of the surrounding landscape. He is typical of many people who visit the area and who spend time and money in the expectation of being able to enjoy the tranquil countryside. He deplores the prospect of another industrial wind farm which would degrade the landscape and add to cumulative impact.

BIIS/CPRW/Mr & Mrs D Anderson/CUM

- 6.9.15 CPRW and the British Horse Society (BHS) raise concerns about the impact of the turbines on horses. Horses have an instinct for flight when they sense danger and they become alarmed at sudden movements [Doc. 45]. The BHS has records of horse being alarmed by the sight, sound and shadows of wind turbines. BHS has a policy which deplores the use of bridledways for access to wind farms and states that turbines should be sited at least 200m away from an right of way used by horses [Doc. 45, App. A]. That policy was published in 1995 when turbines were of much less height than now. In 1998 the BHS resolved to press Government to devise a standard for a minimum distance based on the height of turbines [Doc. 45, App. B].
- 6.9.16 The Mynydd Clogau area is important for horse riders as there is a local network of well used routes, within which bridleway 26 is a central feature. If its use become hazardous then the whole network will be harmed. The proposed turbines would be 68.5m in overall height and although they are set back from the bridleway they would be seen as a cluster by horses traversing the ridge. It is considered this will be a potentially alarming spectacle.

- 6.9.17 The owner of Ty Cerrig, about 1.2km east of the site, breeds show horses and hopes to establish an equestrian business. This would be prevented by the danger to highly strung horses using the bridleway network around the wind farm. This would deter potential customers [Doc. 62(b)] and the turbine noise could alarm new born foals at the property. A similar concern about horses being alarmed by the turbines is expressed by a local pony trekking centre based at Aberhafesp, which uses the bridleway past the site [Doc.49].

6.10. SITE SELECTION

CASE FOR THE APPLICANT

The main points were:

- 6.10.1 Site selection must be based on the reality that wind speeds must be high enough to guarantee economic and reasonably continuous production, so sites are usually in exposed and often elevated locations. The area of land required and the need to avoid close proximity to dwellings means that urban and settlement areas are not suitable. It is also unlikely that inland and coastal landscapes or nature conservation areas which have a national designation would be acceptable. It follows that turbines tend to be located in sparsely populated rural areas outside nationally designated landscapes and away from settlement concentrations, assuming there are willing landlords and the right wind speed. There are also many other selection factors to take into account, including access, grid connection and various environmental constraints. The combination of all of them means that there are not hundreds of potential sites waiting to be developed in Powys or elsewhere, and no prospect of vast areas of turbines appearing over cherished landscapes as some objectors imply.
- 6.10.2 In the case of MC, the site selection process is described in detail in the ES and considered a variety of criteria, including the wind resource and environmental, technical and financial constraints [Doc. 4, section 2]. 73 potential sites were initially identified in Wales which were then subjected to a filtering exercise and reduced to the 12 best prospects where wind monitoring has been undertaken since 1993. Since then some have been pursued by other developers, some have been refused planning permission and others are being carried forward by RES. The MC site has been chosen largely because it has good wind speeds, good access and geology, a nearby grid connection point, not subject to any national landscape or ecological designations, not likely to create unacceptable noise effects, and it was felt it did not conflict with planning policies. Also, the Local Planning Authority raised no objections in principle during early consultations on the proposal.
- 6.10.3 There is no requirement in any Government guidance which suggests a developer ought to demonstrate that their site is the only or the best site in an area, and that possible alternatives have been considered and rejected. It has been held that the question of the materiality of alternative sites and their investigation must vary on a case by case basis and is not a general requirement [Doc. 24].

CASE FOR THE OBJECTORS

The main points were:

CPRW

- 6.10.4 It is submitted that RES have not shown that there is a need to develop this particular site. Site selection is an important factor, as shown in the 1998 Barningham High Moor wind farm case in Durham. The Inspector there concluded that a sufficiently rigorous comparative site analysis had not been undertaken to demonstrate that there were no alternative sites with less environmental impact. His view was upheld in the High Court in 1999. Since that time the 1999 Environmental Impact Regulations have come into force, accompanied by guidance in WOC 11/99. Schedule 4 of the Regulations states that an outline of the main alternatives studied and the reasons for the choice of site should be explained. Paragraph 83 of the Circular states that this should be outlined in the Environmental Statement. The additional information produced by RES for the Assembly after the Regulations came into effect is subject to those Regulations and so the matter of alternative sites is a requirement as well as being 'good practice.'
- 6.10.5 No effort has been made by RES to explain which sites have been considered or why MC was eventually selected. It follows that no need has been demonstrated for the development of this site in the face of contrary evidence that it would be harmful to interests of acknowledged importance.

6.11. OTHER REPRESENTATIONS

- 6.11.1 Apart from the individuals specifically mentioned under the various topic issues, several other persons gave oral evidence in support of the points made by the main objectors, particularly in relation to visual impact, amenity and tourism. A summary of the main points are as follows.

Mr & Mrs M Westwood

- 6.11.2 They live about 2km north-west of the site boundary. They express the view that many local people are opposed to the MC scheme, but those who have lived in the area all their lives have a reluctance to appear at a public inquiry as it is foreign to their quiet and peaceful way of life. They are concerned that the proposal will be a precedent for future extensions and that it will have an intrusive impact on the landscape and ecology. Their house may also be affected by noise pollution from the scheme.

Mr J I Evans

- 6.11.3 Mr Evans considers that the 'viewpoints' provided by the applicant do not adequately reflect the visual impact on Cefn Coch, Llanlunan and the area around New Mills. He also believes that the siting of the turbines down hill towards the valley basin will magnify noise pollution. He believes that a weight restriction is proposed for Ystrad Bridge (Cefn Coch – Llanfair Caereinion road) so all site traffic will go through Adfa where the road is inadequate and could damage the Adfa Chapel.

Mr H Benbow and Mr R Benbow

- 6.11.4 Mr H Benbow owns and farms land near to the site. He considers there are already too many wind farms in Montgomeryshire. They surmount the hills and detract from their special character and appearance. The wind farm will have an adverse impact on local tourism as a wind farm is alien to the intrinsic attraction of the area. People seek to escape from the industrial areas of England and do not want to find the same environment waiting for them in Wales. Mr R Benbow farms in partnership with his father. Having travelled away from the area some years ago and then returned, he appreciates the beauty of the landscape. The turbines would be much more intrusive in the countryside than buildings, and are particularly conspicuous in skyline vistas. The need for energy should be met closer to where it is needed.

Mrs P Madge

- 6.11.5 She lives at Castell-isaf about 1.5km from the eastern site boundary. She is part of an organic food co-operative which sells its produce locally. She believes that, in a similar way, there should be a local energy policy rather than large-scale developments like MC which are owned and run for the profit of outside companies. She supports appropriate renewable energy initiatives, but believes that there are too many wind farms in the area which have a dramatic effect on the rural scene and provide very little benefit which does not outweigh the harm they cause. It is accepted that harmful emissions should be reduced, but this should be achieved by exploring alternatives to on-shore wind power and in energy saving education. The wind farm would demean the natural landscape and the rural quality which visitors come to enjoy.

Mr T Richardson

- 6.11.6 He lives at The Heath about 1km south-east of the site boundary which provides its own electricity from a small turbine. He believes more effort should be made to encourage energy saving and use of insulation. He is concerned about the visual, ecological, drainage and noise devastation caused by the construction of wind farms and the resources used compared to the intermittent energy they provide. The wind farm would be out of scale with the landscape and upset the fragile balance of rural society, whilst providing financial benefit for only a few and contributing virtually nothing in a global context.

Mrs J Hill

- 6.11.7 She lives at Rhos in the Carmel locality about 1.3km north-east of the site. People visit the area to see the beautiful natural scenery undisturbed by unnatural industrial structures, so the proposal will have an adverse effect on tourism. She does not object to the principle of wind power, but not *en masse* in Montgomeryshire where there are already too many turbines. She is also concerned about possible noise, the effect on television reception, and interference with the natural water table. The Government should do more to promote energy savings and explore alternative sources of renewable energy.

Mr David Oliver

- 6.11.8 Mr Oliver represented himself and 14 other residents in Cefn Coch whose houses look directly from their rear windows and gardens towards the Mynydd Clogau ridge. They object to the intrusion in that vista, loss of residential amenity, and the likely impact on the local economy and have submitted a petition to that effect [Doc. 61]. They are also concerned about the disruption from construction traffic, the impact on views from local paths and roads, and the potential loss of custom at the local public house and garage.

Mrs H Smith and Mrs T Jones

- 6.11.9 Mrs Smith and Mrs Jones emphasise the tranquillity and natural beauty of the area, which they feel will be harmed by the wind farm proposal. Mrs Smith points out the inter-dependency of local rural communities and the reluctance of many local people to speak out against wind turbines in case they upset some neighbours. She notes that the 1994 survey by CUM in connection with the former Mynydd yr Hendre wind farm scheme [Doc. 60] showed over 60% of those surveyed as being opposed to the scheme. Since then she believes that public opinion has hardened, especially since the erection of the Carno wind farm. People are no longer so easy to persuade that there is no noise and only low visual impact.

Mr C Humphrey/CPRW

- 6.11.10 For CPRW, Mr C Humphrey raised the question of the transmission lines connecting the wind farm to the national grid which is the subject of written objection by residents in Bwlch-y-Garreg [Doc. 48]. He considered there was insufficient detail in the ES about the route and the design and location of any poles [Docs. 2, para. 4.2.4 and Doc. 5A, pages 2/3 and Figs. 1 and 2]. The route could affect the settlement of Bwlch-y-garreg and the lakes at Llyn Tarw and Llyn Mawr SSSI, with their important bird populations, as well as being visually intrusive in the landscape. It follows that it is important that the line is buried in this sensitive area, which could be made the subject of a planning condition. This would also avoid the difficulties which arose with the Carno wind farm 132kV transmission line which used the Electricity Act section 37 procedure and was allowed by the DTI.

Written representations

- 6.11.11 In respect of written representations, at the time of the original application about 92 letters of objection were sent to the County Council and PINS received a further 73 objections, although many of these were from the same persons reiterating their original objections. There was also a single letter of support for the wind farm. In general, the points made in written representations have been covered as part of the cases of the main parties, including the issues of landscape and amenity, ecology and tourism. The following additional matters were also raised.
1. The construction traffic would cause damage to roadside verges, bridges and buildings, and the so-called 'improvements' to the approach roads would themselves detract from the rural beauty of the area.
 2. Any benefit from the wind farm must be offset against the energy costs of construction and transport.

3. The debate over the wind farm has divided the close knit community and set neighbour against neighbour.
4. If approved, the scheme would be a precedent for further proposals and extensions.
5. A letter from Mick Bates AM and Lembit Opik MP [Doc. 15] suggests that no further wind farm developments should take place until the National Assembly have developed a Welsh Energy Strategy. In the case of Mynydd Clogau they feel that it is an area which should enjoy the same protection as nationally designated areas in terms of its scenic qualities and the wind farm should not be treated as an exception to that aim.
6. Letters were submitted from Graziers Associations using commons CL39 and CL41 [Doc. 69 and Plan F(2)]. The first requests that the wind farm and access is fenced-off from the common and the second objects to the use of the bridleway for access.
7. Country Guardian, described as an “*independent environmental organisation*”, submitted a written statement. This was accompanied by a 32 page document ‘*The Case Against Wind Farms*’ and a further 53 pages of diverse articles, speeches, letters and notes covering renewable energy policy and technical data, tourism, property values, public opinion and safety issues [Doc. 64]. The statement raises similar issues of visual impact and loss of amenity, alleged lack of need or significant contribution to resolving greenhouse effects, noise, tourism impact, and public opinion, to those discussed throughout the inquiries.

7. CWM LLWYD, CARNO

APP/T6850/X/00/513824 – Applications by National Wind Power Ltd for:

(1) 42 wind turbines, access tracks and associated works in the vicinity of Mynydd Rhosfach, Cefn Coch and;

(2) 132/33kV sub-station, compound and associated works, near Cefn Brith, Carno.

7.1. SITE AND SURROUNDINGS.

- 7.1.1 The proposed wind farm site is located on the eastern edge of the Western Uplands SLA in the Montgomeryshire Division of Powys. The western site boundary is some 4.4km by road north-east of the A470 trunk road at Carno. The small village of Cefn Coch lies about 3.5km from the eastern boundary of the site [Doc. 5, CD41 and Plan A, Figs. 1 and 9].
- 7.1.2 The wind farm site covers 420ha of largely enclosed, undulating upland plateau, varying between 325m AOD in the south-east corner to 430m AOD in the centre of the site. Within the site the high points of the plateau include Mynydd Fron Goch, Mynydd Rhydybiswail, Mynydd Bryngwyn, Mynydd y Cwm, Mynydd yr Hendre, Mynydd Pistyll-du and Mynydd Rhos-fach. Tributaries of the Afon Cwm Llwyd to the west and the Afon Rhiw to the east rise in the application site, and the steep valley sides of those watercourses fall away from the edge of the site. To the south of the site the land rises over Esgair Cwmowen and Garreg Hir and then falls down into the Carno Valley. To the north the land falls and then rises over Mynydd Cae'rbwla and down into the valleys beyond.
- 7.1.3 The enclosure pattern on the site is mainly made up of large irregular shaped fields bounded by fences and used for sheep grazing. Some of land has been subjected to agricultural improvement, including extensive drainage, but it is generally a patchwork of grassland, heath, bracken, bog and mire [Plan A, Figs. 19 and 20]. There are no occupied buildings within the site, although there is a ruined dwelling at Pistyll-du near its southern boundary. There are a number of dwellings and farmsteads within 1.5km of the edges of the site, mainly to the north-east around the lane to Plas-y-drain, to the south-east towards Carmel and to the west along Cwm Llwyd. Apart from Bryngwyn which is the subject of an agreement with the applicant, none are closer than 530m to a turbine position.
- 7.1.4 The site is divided into 2 areas by about 1.6km of the Class C road running roughly east – west through the site. This road leads from Cefn Coch down to the Rhyd locality, where it turns south-west along Cwm Llwyd to Carno. It is proposed to site 24 turbines to the north of the road and 18 to the south. There are several footpaths and bridleways which cross parts of the site. Towards the eastern end of the site is the junction with the Class C road of a narrow surfaced track which extends across part of the site towards Bryngwyn. This junction lies almost opposite a minor road extending south-east from the Class C road past Tanyfoel Quarry towards Adfa.
- 7.1.5 The proposed sub-station site is located some 800m to the south-west of the edge of the wind farm site. It lies just over 1km along a rough track and public footpath which extends south off the Class C road past the dwellings of Llanerch and Cefn Brith. The site is at the foot of a hillside to the east, with a gully stream to the south

and forestry plantations beyond. To the south-west the ground falls away steeply towards Cwm Llwyd.

7.2. SITE HISTORY AND DESCRIPTION OF THE PROPOSED DEVELOPMENT.

- 7.2.1 The site has a history of proposed wind farm use going back over 10 years [Doc. 5, CD38]. It started in 1991 as a larger scheme under the name of Mynydd-yr-hendre when it was identified as a potential site by MANWEB Generation Holdings. Discussions with the former District Council began in 1992 when a possible scheme of 147 turbines on an area of 620ha extending further north than the current proposal was envisaged. Following discussions, the scheme was reduced in scale and a planning application was submitted in May 1994 for 83 turbines of an overall blade tip height of 56m, together with an ES [Doc. 1, CD1]. The Secretary of State declined requests to ‘call-in’ the application.
- 7.2.2 Following consultation on the application, revised proposals were submitted with amendments to the ES [Doc. 2, CD2]. The revisions provided for 57 turbines, of which 25 were to be of an overall blade tip height of 41m and the remaining 32 having an overall height of 65m. A report by the former Montgomery District Council’s Director of Planning recommended approval of this proposal in principle [Doc. 2, CD3], but before it could be considered by the Planning Committee in November 1995 it was ‘called-in’ for decision by the Secretary of State. An Article 14 holding direction was also made. The application was not progressed further and the MANWEB interest was acquired by others, before being obtained by NWP. The application was eventually formally withdrawn in May 1998.
- 7.2.3 The current wind farm application before the Assembly was originally submitted to Powys CC on 17 October 1997 and was for 44 turbines, access tracks and ancillary development to include transformers and a sub-station [LA ref: M97/814] [Doc. 2, CD4]. After further discussions on the application, a letter of 21 December 1998 from the agents West Coast Energy revised the proposal and also submitted an ES for the scheme [Doc. 3, CD5]. The revised proposal was for 42 turbines within the same site area and withdrew the sub-station element of the application. At the same time a separate application was submitted for the sub-station outside the wind farm site [LA ref: M99/117] [Doc. 4, CD6].
- 7.2.4 Both applications were ‘called-in’ for determination by the Assembly on 23 February 1999 and an Article 14 holding direction was also made. Additional information concerning the applications was requested by the Assembly and submitted to them on 10 May 2000 [Doc. 5, CD38, App. 5].
- 7.2.5 Further amendments were made to both applications before and during the inquiry which were not opposed by the main parties or the Local Planning Authority. In the case of the wind farm application M97/814, a letter from West Coast Energy of 13 December 2000 stated that it was not now intended to seek the stopping-up or diversion of any public rights of way on the site. A plan was also enclosed showing other land outside the application site which was in the control of the applicant [Plan L]. On 11 January 2001 the screen planting proposal referred to in the context of the Carreg-y-Big viewpoint [see illustration on Photo. 2, VP14/17n ii] was withdrawn [Doc. 15]. On 23 January 2001, following inquiry discussions about the scale of the application site layout plan [Plan A, Fig. 2] and certain turbine and track locations, a

replacement plan Figure 2B was submitted, together with a schedule of turbine grid co-ordinates [Doc. 29 and Plan B]. This plan also incorporated minor amendments to the positions of turbines 4, 17, 35 and 36; deleted and added short lengths of track; and plotted the definitive lines of bridledways.

- 7.2.6 The wind farm as now proposed is a full application for 42 turbine generators and access tracks as shown on Figure 2B. Although the site is not in a valley (being actually located on the plateau to the east of Cwm Llwyd) and the location described on the planning application is “in the vicinity of Rhosfach, Cefn Coch”, the proposal has been commonly referred to as “Cwm Llwyd.”
- 7.2.7 The turbine towers would be between 35 – 40m hub height, with an overall blade tip height of 59m. Details of the turbines would have to be agreed, but a typical specification might be similar to the 600kW, 3 bladed types illustrated in the ES [Plan A, Figs 4 and 5]. The turbines would be linked by stone tracks and on-site cables would be laid underground [Plan A, Fig. 7]. During the construction period 2 storage compounds would be required and sited in the locality of turbines 32 and 33, with access off the Class C road.
- 7.2.8 The 132/33kV sub-station application M99/117, with compound and control building, was originally submitted as a full application. The building walls were proposed as reconstituted stone with a slate pitched roof. The ES included an illustration of a typical control building, compound and trident line [Photo. 1] and plans [Plan A, Fig. 6b] which showed a compound 41m long and 31m wide containing the transformers and control building, and enclosed by a steel palisade fence about 2.5m high. An underground power cable linked the compound over Cefn Brith to the vicinity of turbine 3. A large scale plan showed the application boundary extending either side of the track from the compound up to the Class C road to the north, indicating the possibility of improvements to that route. It also showed the compound to be larger than indicated in the ES and impinging on a waterfall stream and gully on its southern side.
- 7.2.9 On 13 December 2000 West Coast Energy wrote to PINS [Doc. 16] to say that investigations had shown there was no need to undertake works on the western side of the track and a revised plan was submitted [Plan K]. During the inquiry concerns raised about the detailed siting of the compound resulted in the applicants requesting an application amendment on 5 March 2001 which would reduce the compound area and provide an appropriate ‘stand-off’ distance away from the waterfall feature [Doc. 54(1) and Plan J].
- 7.2.10 However, before the close of the inquiry the applicants’ advocate stated that he wished to withdraw that amendment and that the plans would be illustrative only. He asked that the sub-station application be amended to an ‘outline’ application and that this would be confirmed in writing. No objection to this procedure was raised by any of the main parties. On 12 March 2001 a letter was received by PINS amending the application to outline, with details to be treated as reserved matters [Doc. 54(2)]. I have dealt with the application and the consideration of possible conditions on that basis.
- 7.2.11 The point for the grid connection for the site would be indicated by the Regional Electricity Company, and the overhead line would be the subject of a separate application under the Electricity Act. However, the Cwm Llwyd site is within about

2km of the existing 132kV trident line along the Carno Valley and a possible corridor for the line from the site would be from the sub-station near Cefn Brith and to the west of Bryn yr Ysbyty and Criniarth [Plan A, Fig. 3]. An outline ecological assessment has been carried out for a possible line along the corridor [Doc. 18].

7.3. ENERGY SUPPLY AND LOCAL EFFECTS

CASE FOR THE APPLICANT

The main points were:

- 7.3.1 The scheme must be considered in the context of Government policies which seek to encourage the development of renewable energy sources, including onshore wind power, in order to meet the established targets for energy production from renewables and reductions in greenhouse gas emissions (summarised in Section 3 Renewable Energy Issues). The benefits of the proposal in terms of contributing to Government renewable energy policy objectives and providing a clean, sustainable source of energy are important considerations to be weighed against any harm or disbenefits which might be identified in terms of conflict with the development plan or other material planning considerations such as local impacts.
- 7.3.2 There is an environmental imperative to reduce greenhouse gas emissions that are contributing to climate change. As part of its response to this, the Government has set targets for the energy industry to meet, in terms of the proportion of electricity generated from renewable sources. It has determined, through NFFO contracts awarded, that onshore wind farms are a key part of its strategy for renewable energy supplies to secure its targets. The existing rate of development of renewable energy sources is failing to meet these targets. Government statements make clear that even though an individual scheme may make a relatively small contribution by itself to the overall target for energy production from renewable sources, this does not diminish its importance in terms of its contribution to renewable energy objectives. Government targets cannot be achieved without the development of appropriate smaller, as well as larger, energy generating proposals.
- 7.3.3 Onshore wind energy production has the potential to contribute significantly to the attainment of renewable energy supply targets. The National Assembly for Wales has itself recognised the potential of Wales, because of its climate and geography, for generating from onshore wind [Doc 20/3]. Using the breakdown of technology bands adopted by the DTI for its "high wind" scenario, the BWEA has concluded that Wales should contribute 9% of the UK's renewable energy targets for onshore wind energy. This equates to 290MW of wind power capacity in addition to that already installed [Doc 5 (CD28): Doc 20/4]. Although not guidance for Wales, the emphasis in the Scottish NPPG6 is on a much more positive and urgent response to renewable energy schemes and the acknowledgement that most new capacity will come from wind farms is relevant, since it represents the most up to date expression of UK government policy, based on national renewable energy and greenhouse gas reduction targets [Doc 4 (CD13, paras 7, 13, 18)].
- 7.3.4 The existing operational wind farms in Wales currently provide 156MW of capacity and 2.5% of total electricity demand in Wales. In order to contribute to achieving UK targets for sustainable energy supplies by 2003, 2010 and beyond, Wales will need to

develop high-quality, high capacity wind farms like Cwm Llwyd. The scheme would increase wind energy capacity in Wales to 186MW (3% of total electricity demand). [Doc 19(3)].

- 7.3.5 The Cwm Llwyd site was selected as the result of systematic comparative analysis of the advantages and disadvantages of a range of sites in Wales [CL Doc 3 (ES Vol 3 Chapter 3)]. It has been the subject of detailed investigation as to its wind speed characteristics and ability to provide a reliable and cost effective supply of electricity to the National Grid [CL Doc 3 (ES Vol 3 Section 3.4.2)]. Its potential viability is confirmed by the fact that the site is the subject of a NFFO 3 contract, awarded in 1993.
- 7.3.6 The 42 660-750KW turbines proposed would add about 30MW of rated capacity of electricity yielding about 80 GWh per year for supply into the grid. This is sufficient in an average year to provide for the needs of 19,000 homes or about 12% of the total electricity demand in Powys [Doc 3 ES Vol 2 Sections 2.3 and 2.4]. It would increase the amount of wind energy production in Powys to the equivalent of 48% of the county's electricity needs [Doc 19(3)]. It would offset around 67,000 tonnes per annum of CO₂ emissions into the atmosphere over its 25 year operating life, together with around 785 tonnes of SO₂ and 235 tonnes of NO_x [Doc 19(3)]. This would contribute significantly to national policy objectives for sustainable development.
- 7.3.7 Turning to other effects of the scheme, based on NWP's experience elsewhere contracts would be let within the region for an estimated £6.25m (25%) of the construction costs. These would principally be civil engineering and electrical contracts. Subject to competition requirements, NWP would seek to include regional manufacturers and other UK companies on the tender list for turbine supply. If used for supply of turbine components, the estimated percentage of UK content would increase significantly.
- 7.3.8 The subsequent local expenditure (maintenance, supervision, rentals, rents, rates etc) arising from the Cwm Llwyd scheme (additional to resources already related to existing wind farms in the area) is an estimated £396,000 per annum [Doc 19(3)]. This would include employment of local skilled workers in the maintenance of the wind farm for the life of the project.
- 7.3.9 NWP operates a good neighbour policy at all of its UK wind farms and the company supports local community schemes. It contributes funds to an amount related to the size of the wind farm to local community councils or other representative bodies; responds positively to local "good causes"; and advertises in local publications such as tourism guides which promote the local area. NWP would intend to assist facilities for local people and tourists around the Cwm Llwyd wind farm by providing a parking lay-by and information board, way-marking public rights of way and supporting visits by schools and other groups.
- 7.3.10 Due to the size of the Cwm Llwyd project and NWP's existing local presence, NWP would provide financial support to Powys County Council for a renewable energy visitor facility on or near the A470T. This would complement other sustainability initiatives in mid-Wales such as the Centre for Alternative Technology [Doc 1 (ES Vol 2 section 2.3.2.9)]. A Section 106 obligation has been executed to this effect [Doc 57 (2)].

- 7.3.11 Discussions have been undertaken with CCW, Powys CC and the landowners to provide a land management agreement for ecological and environmental improvements on parts of the site, designed to reduce grazing pressures and enhance existing habitats [Doc 57 (1)].
- 7.3.12 The scheme would contribute to the county's sustainability objectives, by increasing the extent to which local individuals and communities are involved in renewable energy production [Doc 19(3)].
- 7.3.13 In summary, the Government's approach to renewable energy demonstrates an emphatic and increasingly determined commitment to achieving much higher levels of energy production from renewable sources, to meet the challenges of sustainable energy production and combating climate change. Government emphasis on the importance of developing renewable energy sources has recently increased markedly. The role of wind power in achieving government objectives and targets is crucial.
- 7.3.14 Although others have questioned the justification for the scheme on the basis that it would provide only a very small amount of power compared to national energy requirements, government policy and statements and recent appeal decisions confirm that the fact that a particular scheme would make only a small contribution in national terms to overall energy needs is not a reason to dismiss it as not worthwhile. In any event, the energy production capacity of the Cwm Llwyd scheme is substantial, and much greater than many renewable energy schemes. The thrust of government policy in favour of renewable energy development and the contribution of the Cwm Llwyd proposal to this are material considerations carrying significant weight, as are the local economic and community benefits which would flow from the scheme.
- 7.3.15 Other parties appearing at the Inquiry (Mr G Thomas, Bron Haul, Carno and Mrs Lloyd, Hendre, Carno – both participating landowners in the proposal) refer to the local economic and community benefits that would flow from the scheme. The Trannon wind farm has resulted in contributions to the local community fund. 6 people are already employed on wind farm sites operating in the locality; this means jobs supporting 6 local families. Similar benefits would result from the Cwm Llwyd proposal. Without local employment opportunities such as this young people would desert the area. Mr A L Burton (Tyn yr Eithin, Carno) makes reference to the economic difficulties faced by the farming industry in mid-Wales in recent years. Wind farms can provide valuable extra income, enabling individual upland farm units to remain healthy and viable.

CASES FOR THE OBJECTORS

The main points were:

CPRW

- 7.3.16 CPRW acknowledges that the Cwm Llwyd site has the benefit of a NFFO 3 generating contract for a declared net capacity of electricity generation equating to about 30MW installed capacity. However, the award of a NFFO contract is completely without prejudice to the planning approval process, which must be carried out in the normal way. PPW states that government policy is to stimulate the exploitation and development of renewable energy resources "whenever they have prospects of being economically attractive and environmentally acceptable". This

means that full regard must be had to countryside protection policies in determining the proposal.

- 7.3.17 Although only limited information about the proposed turbines was provided in the ES, CPRW's own estimates of likely emission savings arising from the scheme and the contribution made to domestic electricity consumption are similar to those provided by NWP [Doc 36(2)]. In a UK context, however the estimated emissions savings are relatively small [Doc 36(2)].
- 7.3.18 CPRW considers that the energy production and emissions savings that would accrue are insufficient to justify the unacceptable harm to the landscape. Such sacrifice of a precious landscape resource in the interests of renewable energy development is unwarranted when there are other renewable energy technologies, such as offshore wind power, which could provide much greater savings at lower cost to the environment.
- 7.3.19 Although NWP cites the financial assistance it gives to local communities as a beneficial local effect associated with the proposal, press releases that accompany such donations confirm that this is in reality a publicity and promotional exercise for the company and the wind power industry [Doc 38].

CUM

- 7.3.20 CUM support the essential principles of sustainability, involving the replacement of finite resources with renewable ones. However, developments that exploit a previously-untapped renewable resource can compromise other non-renewable assets. Both positive and negative effects need to be considered.
- 7.3.21 Although it is Government policy to encourage renewable energy systems, approval of proposals pursuant to this policy is not mandatory. Renewable energy systems are subject to normal planning procedures.
- 7.3.22 In evaluating the benefits of wind energy, its dependence on a finite, non-renewable resource (a suitable location) and the unpredictability of its power generating capacity are relevant to the judging the benefits claimed for wind power.
- 7.3.23 Planning decisions on renewable energy proposals are based on balancing their benefits against any harm that might arise. The Environmental Statement provided by the developer to inform the Cwm Llwyd decision is slanted towards the benefits of the proposal and obscures its harmful effects.
- 7.3.24 The carbon emissions savings of onshore wind power, developed to its full potential, would be less than 1% of UK total carbon emissions. The CO₂ savings claimed for Cwm Llwyd of 67,000 tonnes per annum equates to just 0.013% of Britain's CO₂ emissions. They are very small in a national context and insignificant on a global scale [Doc 42(1)].
- 7.3.25 The Environmental Statement comparisons of emissions from conventional power stations with life-cycle emissions from wind farms (ES Vol 2) is flawed and misleading. DTI data shows that wind farms have significant life cycle emissions of SO₂, which is the main cause of acid rain; it also shows that modern gas-fired CCGT

generators produce zero emissions of SO₂ per unit of generated power (*New and Renewable Energy: Prospects in the UK for the 21st Century: Supporting Analysis. DTI page 213*).

- 7.3.26 The claim that the proposal will supply enough power for 19,000 homes or about 12% of Powys' power needs ignores a number of factors. Power generation from the wind farm will be intermittent, depending on wind conditions. The claim also ignores demand for, and consumption of, electricity outside the home. On a per capita use basis, the estimated amount of electricity produced each year would equate to consumption by only 5,591 homes [Doc 42(1)].
- 7.3.27 The average continuous output from the scheme would make only a marginal contribution to simultaneous consumption of electricity by each household in Powys - equivalent to just 7% of Powys homes boiling a 2.5kW electric kettle at the same time [Doc 42(1)]. Judged against the electricity demand of a major conurbation the contribution made by the proposal would be even less significant.

Other objectors

- 7.3.28 Other objectors appearing at the Inquiry (including Dr A Cresswell, Llannerch, Carno and Mrs A Davies, Carreg-y-Big) consider that the wind farm would have negative effects on the local economy. It would, blight the value of adjacent farms and nearby properties and reduce the attractiveness of the area to people who might otherwise rehabilitate dilapidated dwellings and develop cottage industries, thus injecting capital into the local economy.

7.4. LANDSCAPE AND VISUAL AMENITY

CASE FOR THE APPLICANT

The main points were:

- 7.4.1 The activities and elements of the proposed wind farm which will affect the landscape fabric and visual amenity will occur in 3 phases – a short-term construction phase, a long-term operational phase, and a short-term decommissioning phase. Clearly the construction phase will have an impact, but its controlled extent and duration will ensure the effects are temporary and only last for about 9 months.
- 7.4.2 The operational phase is expected to be 20 – 25 years and the features of site entrances, access tracks, sub-station and transformer compound, anemometry masts, and the 42 turbine generators will have a long-term effect on the landscape and amenity. The sub-station building is not considered to have any significant effects due to its location and scale, and the anemometry masts are shorter than several communications masts in the study area and unlikely to have a significant effect. The new site tracks are similar to existing farm tracks in the area and will occupy a very small proportion of the site.
- 7.4.3 The applicants' assessment has, therefore, concentrated on the potential effects of the wind turbines. The 4 operational wind farms within or close to the 20km study area, namely Cem maes A, Carno, Bryn Titli and Llandinam, together with the permitted

Cemmaes B scheme, have been taken into account also. The final decommissioning phase will be of limited duration and will remove all above ground structures, leave below ground works in place and restore the ground surface which has been disturbed. It will thus have a minimal effect on the landscape and amenity.

- 7.4.4 An initial landscape and visual assessment is contained in the ES [Doc. 3, Vol. 2, Chapter Six, and Vol. 4]. A further study was undertaken for the inquiry, with the method of assessment [Doc. 23, Apps. 1 and 2] involving a review of the visual characteristics of wind farms, examination of the key components of the landscape, a visibility and viewpoint analysis, an assessment of the effects on the landscape fabric and character and on amenity, and conclusions on the acceptability of the predicted changes to the landscape and amenity. It should be noted that the ES adopted a matrix of 5 levels of significance of predicted changes based on 3 initial levels of substantial, moderate and slight. That approach is essentially sensitivity x magnitude of change = significance. A different approach has been applied for the inquiry assessment which takes account of the large number of factors involved in receptor sensitivity and location specific factors for every location in the study area. In simple terms this method is magnitude of change x (range of receptor and location specific factors) = significance. This method does not limit sensitivity to only 3 levels and enables the weighting of the factors to take account of specific conditions.
- 7.4.5 It is considered that the MLA [Doc. 5, CD30] provides an acceptable basis for classifying landscape types and this was used in the ES which also sub-divided the 6 landscape types within 8km of the site into 12 landscape character areas [Doc. 3, Vol. 2, paras. 6.4.2.13 – 6.4.2.34; and Plan A, Fig. 8]. Landscape character areas are single unique areas that are discrete geographical areas of a landscape type. It is accepted that landscape effects can occur at distances greater than 8km, but the ZVI for Cwm Llwyd [Plan A, Fig. 15] shows there are only fragmented zones of visibility beyond 10km, so it is the effects on landscape character areas within 10km radius which have been concentrated on. Between 8 – 10km from the site there are also 3 landscape character areas that were not assessed in detail in the ES – hillslopes and saddles to the west of Trannon Moor, hillslopes and saddles north of Mynydd-yr-Hendre plateau, and the valley to the north of the Afon Garn valley. As these are only very small and/or fragmented zones of visibility the effects on them have not been examined.
- 7.4.6 The landscape analysis has, therefore, looked at the key characteristics, designations, quality and visual receptors in the 12 character areas used in the ES [Doc. 30/1]. The quality analysis is based on an interpretation of the distinctiveness, integrity and condition of each character area and uses 4 levels of quality – exceptional, high, medium and low [Doc. 23, App. 2, para. A2.16]. It should be noted that the high quality level is similar to the medium category used in the ES. The results find 4 of the character areas to be of high quality; 6 to be of medium quality, including the Mynydd-yr-Hendre, Trannon Moor and Mynydd Rhiw-Saeson plateaux; and the remaining 2 areas to be generally high, with some medium quality [Doc. 30/1].
- 7.4.7 The main parties generally agree that the MLA contains appropriate descriptions of the character types, but CCW and CUM disagree with NWP over its assessment of the plateaux as being of medium quality. However, it is relevant to note that the expert landscape witnesses giving evidence at the other inquiry sessions for RES, Powergen and Powys CC broadly agree with the conclusion on the medium quality of

the plateaux, and the witness for NWP has reached the same conclusion specifically for the area of Cwm Llwyd.

- 7.4.8 The visual assessment has been carried out in several stages, followed by an assessment of the effects of the wind farm [Doc. 30/2]. The first stage was a visibility analysis based on ZVIs which show the main locations in the study area where the topography would permit views of the proposed and existing turbines [Plan A, Figs. 12 – 16]. A further ZVI covers the inner 5km radius of the study area, showing where views of the Cwm Llwyd scheme and existing turbines might be [Doc. 23/4]. The second stage of the assessment linked the ZVI analysis to the situation in reality by refining the general zones of visibility suggested in that analysis through examination of actual viewpoints. Agreed statements were presented to the inquiry summarising the baselines for landscape character, ZVI and viewpoints [Doc. 5, CD 42 and 43]. The third stage was a local residential amenity analysis based on observation in the field and wireframe visualisations. The fourth stage was a recreational amenity analysis based on field observations from viewpoints, rights of way, common land and land above 600m due to the possible implications of the CROW Act 2000.
- 7.4.9 The visibility analysis stage indicates that in the outer 10 – 20km zone the topography would screen views of the proposed wind farm from the majority of this zone, apart from fragmented areas in the Snowdonia National Park and in the SLAs. These zones include a few scattered properties, some short sections of Glyndwr’s Way and Severn Way, and some short sections of Class B and minor roads [Plan A, Fig. 15].
- 7.4.10 The only areas where one or more Cwm Llwyd turbines would be seen on their own without existing turbines would be in the broad valley and shallow rolling hills areas to the north-east of the site, plus small extensions to zones of visibility where topography already allows one or more existing wind farms to be visible [Plan A, Fig. 16]. At this distance of 10 – 20km the Cwm Llwyd turbines would appear small in the views and probably largely screened by intervening features, such as buildings and trees.
- 7.4.11 Between 0 – 10km from the Cwm Llwyd site it is likely that topography would permit views of at least some of the turbines from the central, eastern, north-western and south-western sectors of this inner zone [Plan A, Fig. 15]. These areas include the plateau around the application site; Trannon Moor to the south-west; parts of Mynydd Waun Fawr, Llanwyddelan rolling hills and the Afon Rhiw valley to the east where only the turbines on Cwm Llwyd would be seen; part of the area around Talerddig and the Mynydd Rhiw Saeson plateau to the west; and a small part of the Carno Valley. Visual receptors would include the industrial part of Carno, some scattered properties, a very short section of Glyndwr’s Way, and short sections of the road network. The areas where only the Cwm Llwyd turbines would be visible are mainly on the Mynydd-yr-Hendre plateau itself and hill slopes and saddles, rolling hills and the Afon Rhiw valley to the immediate east of the site, together with some small areas to the west of the site [Blue areas in Plan A, Fig. 16].
- 7.4.12 It must be remembered that the use of computer generated ZVIs does not allow for the screening effects of features existing on the ground, so the number of turbines actually visible in reality would not be as extensive as implied. The effect of the wind farm turbines on the landscape fabric would be very small, affecting only about 1% of the site area, and reversible when the site is decommissioned. There would be

no loss of distinctive features, such as trees or hedges. The overall effect would not be significant.

- 7.4.13 The policies of CPRW [Doc. 36(1)] distinguish between large and small scale schemes, but it should be appreciated that the extent of a ZVI is not proportional to the number of turbines. For example, there are 56 turbines at Carno compared to 1 at CAT, yet the area affected by the former wind farm is only 50% greater [Plans H and I].
- 7.4.14 In relation to the landscape character, there would be a significant effect on the Mynydd-yr-Hendre plateau where the site is located. Within this character area there would be significant effects on a number of the viewpoints and the topography would permit views of most of the turbines from most of the central and northern parts of the plateau [Plan A, Fig. 15]. The plateau is a narrow 'C' shaped area which in general is an open rolling landscape with few surface features to provide screening. Also, the landscape of the more elevated or open areas in the Mynydd Waun Fawr hillslopes and saddles character area and the views from properties such as Dol-y-fardyn-fach [Doc. 23/6, No. 32] could be significantly affected.
- 7.4.15 It is not considered there would be significant effects on the 5 plateaux margin and scarp areas, the 3 areas of undulating hills, the 4 areas of shallow rolling hills, the 10 narrow valleys, the 4 broad river valleys and the Caersws riverbowl. This is mainly due to distance and the presence of the existing wind farms in the plateaux margin and scarp and other plateaux areas.
- 7.4.16 With regard to the Western Uplands SLA as a whole, the Mynydd-yr-Hendre plateau lies on its eastern edge and is sufficiently far from other wind farms to avoid significant cumulative effects on other parts of the SLA. It follows that the localised effects of the Cwm Llwyd scheme would be acceptable. There would not be significant effects on the Upper Severn and Berwyn Mountains SLAs as a result of distance and the extensive forestry plantations around the latter. Also, there will be no significant effects on the landscape character of Snowdonia National Park, due to the distance of 13km or more to its edge and the limited views from the park towards the wind farm site which are small areas containing no rights of way.
- 7.4.17 It is submitted that even if the localised significant effects on parts of the SLA are considered to be adverse, they would not be unacceptable.
- 7.4.18 For the effects on visual amenity the ES used 17 viewpoints to assess the magnitude and significance of effects of the turbines [Doc. 30/3 and Plan A, Fig. 10]. The existing and predicted views from these viewpoints are shown in the ES [Photo. 2, VPI – 17]; and the magnitude and significance of the changes to the views in terms of landscape character, fixed viewpoint receptors, and linear route receptors have been assessed [Doc. 30/4 – 30/6]. In response to CPRW a further 3 viewpoints have been assessed [Photo. 4].
- 7.4.19 The assessment of the magnitude of change in the view as a result of the Cwm Llwyd wind farm described it as substantial, moderate, slight or negligible. This was dependent on a number of parameters including distance, the extent of development visible and the proportion of the field of view it would occupy, the background in the view, the landscape character, other built development visible, and blade movement.

The significance of the predicted changes in terms of its effects on landscape character and the visual amenity of receptors were then considered.

- 7.4.20 The viewpoint analysis found that the magnitude of change in the ES viewpoints [Photo 2] at VP1: Garreg-hir, VP12 and 13: the Carno to Cefn Coch road, and VP14: Carreg-y-Big would be substantial, with significant effects on landscape character and fixed viewpoint receptors. Of the other 13 viewpoints there would be a moderate magnitude of change at 5 of them, but only at VP17: Llyn Hir would the overall effect be significant for landscape character and rights of way users.
- 7.4.21 At the additional 3 viewpoints suggested by CPRW [Photo 4], no turbines could be seen from VP 18, but it is agreed that the magnitude of change at VPs 19 and 20, below Carno wind farm and at Bryn-y-fan, would be moderate. The ES analysis has also compared the 1994 and 1998 CL wind farm schemes at certain viewpoints [Photo 3].
- 7.4.22 The residential amenity stage involved undertaking a survey of over 50 residential properties within 2km of the wind farm site [Docs. 23/5 and 23/6] and preparing a series of wireframes of views from properties [Doc. 23/7]. The survey showed there would be significant effects assessed as a substantial or moderate magnitude of change on the visual amenity of 15 occupied properties [Doc. 23/6].
- 7.4.23 The topography screens most of the properties to the west and south of the proposed site and virtually all the properties in Cwm Llwyd itself would only see the blades or tips of 3 or less turbines. The one exception would be the elevated Llechwedd-du which would have a substantial change of view [Doc. 23/6, No. 18]. To the north and north-east of the site there is not a distinct plateau edge to screen views of the turbines. Consequently, there would be a substantial or moderate change of view which would significantly affect the residential amenity of the occupiers of 8 properties [Doc. 23/6, Nos. 26 – 33]. The same would apply to 6 properties to the east and south-east [Doc. 23/6, Nos. 40, 41, 45, 46, 48 and 51]. It is also concluded from the analysis of the Cefn Coch viewpoint [Photo. 2, VP4] that there could be significant effects on a few properties on the western edge of Cefn Coch village, particularly from first floor windows.
- 7.4.24 There would be significant effects on the visual amenity of motorists and other road users on the 4km section of Class C road passing through the site close to the turbines. However, there would not be significant effects on visual amenity on the A and B roads in the study area or on most of the minor roads and tracks due to the screening effects of small scale topography and surface features.
- 7.4.25 In respect of local recreational amenity, the ZVI suggests there would be views of between 11 – 42 turbines from rights of way in the area, particularly on the Mynydd-yr-Hendre plateau, both within and outside the site [Doc. 23/4 and Plan A, Fig. 24]. The open upper slopes of the Talerddig hillslopes and saddles to the west of the site would be similarly affected. It is considered the wind farm would have a significant effect on walkers and horse riders in those locations [see examples at Photo. 2, VPs 1, 14 and 17]. There are 2 areas of common land within 3km of the wind farm [Plan F] where there would be views of between 11 – 30 turbines. It is considered the wind farm would have a significant effect on the visual amenity of users of those commons.

- 7.4.26 With regard to potential for open access to mountain, moor heath and down under the CROW Act 2000 provisions, there are no mountains over 600m around the application site and no other land has yet been designated. There is no evidence available to show which areas of land will be affected and CCW have indicated that the mapping process cannot be completed until 2003 at the earliest, followed by further procedures before such land can be designated. Such uncertainty means no weight should be attributed to the CROW Act provisions at this time.
- 7.4.27 It must be borne in mind that it is unlikely that a proposal such as Cwm Llwyd sited anywhere in the United Kingdom would not result in some significant effects on landscape character and amenity in its locality. However, significant effects are not necessarily unacceptably adverse and can be regarded as positive or negative depending on the perception of the observer. Public attitude surveys show that a majority of people find wind energy acceptable [Doc. 23(8)] and the local objectors mainly represented by CUM are a minority group. CUM claims only about 300 members, with many coming from outside Montgomeryshire. This is only a minute proportion of the overall population in excess of 52,000.
- 7.4.28 The rolling, open, large-scale terrain of the wind farm site is a landscape that can contain a substantial number of turbines without being dominated by them. The proposal is in scale with the landscape which is very effective in containing views of the turbines. As a result, the significant effects would be very localised and the development is acceptable in this location.
- 7.4.29 In considering the landscape and visual evidence of the other main parties it is important to recognise that CPRW are fundamentally opposed to wind farms in rural Wales, so its evidence and policies must be considered against this stance. This is at odds with national policy and CPRW's own support in principle for renewable energy. Although they suggest they would encourage off-shore schemes it is likely, in practice, they would have a similar approach given the many conservation designations applying to much of the coast and coastal waters in Wales. Accordingly, the evidence of CPRW can be of little assistance in considering the individual merits of CL.
- 7.4.30 In the case of CCW, its own 1999 policies on wind turbines [Doc. 31/1, policies 5, 6 and 7] have been acknowledged to be inconsistent with national advice in PPW, TAN8 and in the development plan, so should carry little weight.
- 7.4.31 The history of the CL site shows that a much larger scheme was recommended for approval in principle in 1995 and it is appropriate to ask what has materially changed since then. At that time the other wind farms which exist today were in place and, apart from the approved Cemmaes extension and the single CAT turbine, the baseline remains the same. The MLP was at an early stage then and the policy envisaging a limit of capacity for wind farms in Montgomeryshire has not survived into the Local Plan as now proposed. The main change has been that UK energy policy is now more insistent and positive in its support for renewable energy.
- 7.4.32 In respect of current policy it is submitted that the careful design and layout of the site within the process of environmental impact assessment, together with the micro-siting changes agreed during the inquiry mean the impact of the proposal has been minimised, thus satisfying PSP policy EC4. PSP policy EC20(E) requires that a wind farm should have no unacceptable adverse effects on the SLA and it must be assumed

this is compatible with policy EC3. The test to be satisfied in the Structure Plan is, therefore, whether or not CL would have unacceptable adverse effects on the SLA against a background that a wind farm is capable of being appropriate in such an area in the context of policy EC3. Also, policies EC3 and EC20(E) are limited to effects on the SLA itself.

- 7.4.33 Policy EC20 is a permissive policy which encourages renewable energy sources and reflects national energy advice current at the time it was formulated. It is submitted that the evidence shows that the changes to the baseline landscape and visual amenity are acceptable when measured against the test set out in that policy, so rendering CL an appropriate development in the context of the quality and character of the Western Uplands SLA.
- 7.4.34 The main policies affecting landscape and amenity in the MLP are policies ENV2, 3, 24 and 25. Policy ENV24 addresses proliferation, policy ENV25 addresses cumulative visual (not landscape) effects and is somewhat wider than policy ENV24. Policy ENV2 is concerned with landscape effects, whereas ENV3 is specifically concerned with the SLA landscape. The submissions on the Structure Plan overlap with MLP policy ENV25, not least because the baseline for CL includes existing wind farms so the cumulative effects would also be acceptable.
- 7.4.35 Policies ENV2, 3 and 24 can be considered together. From policy ENV2 it is clear the MLA should be read closely with the MLP. The 1992 MLA indicates that wind farms may be acceptable on plateaux and no changes were made to that approach in the deposit MLP, or in the subsequent 1997 modifications. This is important as in 1995 the Llandinam, Bryn Titli and Cemmacs wind farms had been built and Carno had planning permission. It follows that the Local Plan and policy ENV2 must have been aware of these 4 commitments on the plateaux and yet envisaged that further such development was potentially acceptable.
- 7.4.36 In the specific case of Garreg-hir it is submitted that this area “containing the Bwlch-y-garreg lakes” is not relevant as CL is not part of that “immediate area”, but is some distance to the north. The evidence of the Powys CC witness at the cumulative session and the report to the January 2001 Planning Committee in advance of her evidence [CI Doc. 15B] make no reference to any relationship of CL with Garreg Hir, so it must be assumed that the Council agree that CL is not within that “immediate area” referred to in paragraph 5.42 under MLP policy ENV2.
- 7.4.37 The general conclusion of NWP that the special features of the plateau landscape would not be unacceptably affected by CL would appear to gain implicit support from the position of Powys CC in offering no objection to the scheme. It is submitted that CL does comply with policy ENV2.
- 7.4.38 In relation to MLP policy ENV3 it must be appreciated that whilst the Local Plan Inquiry Inspector’s Report disclosed that no evidence was presented which showed wind farms were appropriate in the SLAs, the Inspector did not say they would be inappropriate and policy ENV3 has been through the whole Local Plan process and will almost certainly be adopted in its current form [Doc. 19(1)]. The submission of NWP is that they have shown that CL would be appropriate to the character and landscape of the SLA, so there is no need to go further to consider the case for an exception to the general test of that policy.

- 7.4.39 Even if that submission is not accepted, CL would still comply with policy ENV3 if, assuming all Local Plan policies are read together and are consistent, there would be no unacceptable compromise of the environmental quality of Montgomeryshire as required by policy ENV24. It is submitted there would be no such compromise and the proposal does satisfy the relevant MLP policies. For similar reasons it is also submitted that there is no conflict with the national advice on landscape and visual matters in PGW [Doc. 4, CD12, paras. 5.1.1, 5.3.5 and 5.3.13] and in TAN8 [Doc. 4, CD15].
- 7.4.40 With regard to the separate sub-station application, it is now an 'outline' submission which will enable all matters of siting, design and external appearance to be considered in detail in due course. The proposal is inextricably linked to the wind farm proposal and would not proceed without it. Various PSP policies EC3, EC4, EC20 and T12 are relevant, but it is submitted that the proposal would not conflict with them. Subject to the agreement of appropriate details, it is considered there would be no unacceptable visual impact. It is accepted there would be some impact from traffic during the construction phase of the project, but this would be short-term and acceptable. In the long term the operational traffic visiting the sub-station would be minimal.

CASES FOR THE OBJECTORS

The main points were:

CCW

- 7.4.41 The Cwm Llwyd application site lies mainly within a plateau landscape which provides some of the most extensive views in mid-Wales. These range from the Berwyn Mountains in the north to Cadair Idris in the west and the Kerry ridge to the south-east. Garreg-hir some 2.5km to the south is a well used local view point and the undulating area around it with its upland lakelets is particularly attractive. Much of the area can be explored from numerous rights of way and the CROW Act 2000 is likely to increase the opportunities for recreation across such plateaux, including all common land. There is common land adjacent to east side of the site and several other areas within 10km [Plan F]. The Class C county road which bisects the site is one of the few metalled roads from which the less able can enjoy wide views across the plateau.
- 7.4.42 It is important to note that in the MLA and the MLP the special features listed for plateaux include open moorland, extensive views, scenic routes and important viewpoints. Policy ENV2 of the MLP seeks to safeguard those features. The experience gained from existing wind farms at Carno, Cemmaes, Llandinam and Bryn Titli has shown the difficulty of integrating turbines into the upland plateau landscape. Such large vertical features are inevitably visible over long distances and existing schemes already dominate significant areas of plateaux in Montgomeryshire. They add to the adverse effect of coniferous afforestation in these areas which is recognised in the MLP which now proposes to limit new schemes. The part of the SLA lying north-east of the A470 between Caersws and Llanbryn-mair, within which the Cwm Llwyd site lies, remains largely unaffected by conifers and turbines, so offers one of the few opportunities to experience open moorland and upland plateau

views. The proposed development would clearly conflict with PSP policies EC3 and EC7.

- 7.4.43 A detailed assessment of the visual effects of the Cwm Llwyd turbines has been prepared for CCW [Doc. 32] which supports the broad concerns expressed above. The study calculated the visibility of the wind farm at each of 3 radii of view (7, 10 and 15km) and at 4 points on the turbine structure (top of rotor arc, nacelle, bottom of rotor arc, and ground level + 1m), and combined with the land from which existing wind farms may be visible [Plan N, Figs 1-7].
- 7.4.44 The results show that most of the views of turbines are at distances closer than 15km radius of view [Doc. 32, Table 3 and Plan N, Figs. 2 – 5]. These views are not from any of the larger settlements in the area, but some views would be obtained from the periphery of Carno and Llanfair Caereinion. The pattern of the visibility is in unconnected patches distributed around the wind farm, but with the greatest concentrations in its immediate vicinity. These include land to the east around Cefn Coch and Adfa, the hills west of the Rhyd, west and south-west of Carno, the hills between Llanbrynmair and Llangadfan, and the land to the north of Llangadfan.
- 7.4.45 The top of the rotor arc may be visible from an area of 226.7km², compared with 141.0km² at 10km and 96.4km² at 7km. The greatest proportion of the maximum view of the top of the rotor arc of which the entire structure is visible is for the middle viewing radius of 10km, at 54.6%, which is also true for the areas for the bottom of the rotor arc and the nacelle [Doc. 32, Table 4]. This is due to there being higher areas of land than Cwm Llwyd between 7km and 10km away, mainly to the west of Carno and between Llanbrynmair and Llangadfan [Doc. 32 and Plan N, Figs. 2 and 6]. The results suggest that at a 15km radius of view turbines may be visible from about 32% of the land surface, increasing to 45% within 10km, and 62.6% within 7km. Half or more of the turbines may be visible from about 25% of the area within the 7km or 10km radii. At 15km radius for the nacelle and bottom of the rotor arc the most extensive areas of visibility appear to be in the 31 – 40 turbines band [Doc. 32 and Plan N, Figs. 3 and 4], and the core areas from which ground level (+ 1m) is visible at the turbines are to the north of Cwm Llwyd and north-east of Llanbrynmair [Doc. 32 and Plan N, Fig. 5].
- 7.4.46 The extent of areas from which Cwm Llwyd turbines may be visible has been compared to the area of open vegetation cover above 300m and common land [Doc. 32, Fig. 9]. Cwm Llwyd is roughly in the centre of an expanse of such land [Doc. 32, Fig. 8]. For this land, totalling some 800km², within the 15km radius from which 1 or more turbines may be visible, just over 18% is woodland and 76% open vegetation [Doc. 32, Table 5]. Almost 50% of the land with open vegetation would have views of half or more of the total number of turbines [Doc. 32, Table 6]. In respect of common land above 300m within the 15km radius, about 42% of the 26.6km² which is open vegetation would have views of 1 or more turbines could be seen [Doc. 32, Table 7].
- 7.4.47 The visibility of each individual turbine at the top of the rotor arc and at ground level (+ 1m) has been calculated for the 15km radius [Doc. 32, Table 8]. This suggests that turbine 5 [Doc. 32, Fig. 10] and turbine 6 both of which are sited towards the south-west corner of the site would be the two most visible structures.

- 7.4.48 In terms of visibility of the wind farm from the local road network [Doc. 32 and Plan N, Fig. 11], it would probably only be seen from 4.65km of trunk or 'A' class roads out of over 82km [Doc. 32, Table 9]. However, of the 593km of other roads in the area, about 136km could have views of at least one of the turbines [Doc. 32, Table 10]. The main localities are to the east and north-east of the wind farm around settlements such as Cefn Coch, Adfa and Tregynon.
- 7.4.49 It is concluded that the ZVIs show that the visual impact of the wind farm will be greatest to the west, north, north-west and east, especially around Cefn Coch and Adfa and the minor road network. From the south the impact is reduced by hilltops, especially in relation to most settlements.
- 7.4.50 To assess the CL wind farm in the context of visual policy, the starting point is CCW's own policies formulated in 1992 and reviewed in 1999 [Doc. 31/1]. Policy 5 deals with such developments in SLAs. It is not inflexible and makes it clear that CCW only object where there is detriment to the features and qualities of a SLA. Indeed, the expression "normally oppose" allows for exceptions even in those circumstances where other considerations may apply. It is contended that this policy is in line with PSP policies EC3 and EC20 and also compatible with MLP policy ENV3 insofar as the possibility of a wind farm being sited in a SLA is accepted. The policy is not in conflict with PPW [Doc. 4, CD12, para. 5.3.5] either, which aims to maintain the quality of the countryside outside statutorily designated areas and expects locally designated areas to be soundly based. In this case, the Western Uplands SLA is soundly based and justified, with appropriate supporting development plan policies which must be fully applied to the proposal.
- 7.4.51 PSP policy EC3 applies to the whole of the site as it embraces development both within or adjacent to SLAs, and to common land [Doc. 13]. PSP policy EC7 applies to any proposals which affect common land and the CROW Act 2000 will increase the significance of common as all such areas are within the Act's provisions. Policy EC20 makes it clear that landscape issues may outweigh the need for renewable energy development. The emerging MLP policies [Doc. 11] must carry considerable weight and policy ENV3 whilst providing for the possible exception of a wind farm, does not remove the requirement for them to be sensitive to landscape quality and to integrate with the landscape. Accordingly, it does not override PSP policy EC3 nor does it qualify policy EC7 in any way. The same applies to PSP policy EC20 which only allows for the possibility of wind farms where they would not have unacceptable adverse effects and give special consideration to landscape issues.
- 7.4.52 The most authoritative and independent analysis of the landscape is the MLA which underpins the SLA in the Structure and Local Plans. In relation to plateaux and their margins and scarps which are the type of areas affected by CL, the MLA emphasises the openness and remoteness, together with the value of their habitats. The special qualities of these areas are set in a county where landscape quality is described as uniformly high. This clearly suggests that the site is within a landscape of very high quality.
- 7.4.53 Against the forgoing background, CCW take issue with the applicant's claim that the Mynydd yr Hendre plateau landscape area is of only medium quality. In cross-examination the landscape witness for NWP indicated that she reached her conclusion because of factors such as grazing, its past use by man, and condition of fencing and walls. All of these are typical of such an area and do not detract from its character.

She regarded forestry plantations as a detracting feature, but these are few in number and small in scale in this area. She also stated that the Tanyfoel quarry was a detractor of the plateau, but this is actually outside that area and within a hillslopes and saddles area where it did not prevent a generally high rating of that area. CCW's evidence is that the landscape quality of Mynydd yr Hendre is at least 'high' in a national context and in Powys it must be regarded as high or exceptional. Furthermore the applicant has not assessed its scenic quality which is exceptional and offers one of the few remaining opportunities to experience open moorland and upland plateau of such quality.

- 7.4.54 In terms of the impact of the wind farm, the applicant has accepted that there would be significant effects on the plateau character, the visual amenity of some residents within 2km of the site, and upon some motorists, horse riders, walkers, and users of the nearby commons. The difference between CCW and the applicant is that the former regards these effects as unacceptably adverse whereas the applicant considers them acceptable. CCW believe that the effects would be unacceptable not only in a local context, but also because of the impact on the open vistas which can be experienced from and to the site. The proposal does not meet the sensitivity and integration tests of PSP policy EC3.
- 7.4.55 It is apparent that the applicant has had no regard to the impact upon common land in relation to PSP policies EC7 or EC3, bearing in mind the open nature and landscape value of such land. It is submitted that common land parcel CL54 would be significantly compromised by the proposal and to a lesser extent other common land within the visual influence of the wind farm [Plan F and Plan N, Fig. 9].

CPRW

- 7.4.56 A study of existing and approved wind farms in Wales shows that, apart from 2 single turbine installations and the 6 turbines at Parc Cynog, Carmarthen, the Cwm Llwyd proposal would have the tallest turbines and be one of the 3 largest sites, with the other 2 sites being nearby at Carno and Llandinam. The blade-swept area of CL combined with the axis height above ground contributes to a visual effect that could be referred to as the 'moving mass area' (area of circle with radius of 21 – 24m x 42 turbines). This moving mass area could be of a similar order of magnitude and visual impact to the other two larger installations.
- 7.4.57 A visual impact analysis has been undertaken for turbines of the height proposed [Doc. 36(2)]. The visibility of the turbines in relation to distance was carried out using the so-called Sinclair-Thomas Matrix [Doc. 37(B)]. This suggests that 60m high turbines in bands A and B at distances of 0 – 5.4km have the potential to be independently adverse, those in bands C and D at 5.4 – 12.1km have the potential to be adverse if they augment representative views in bands A and B; and bands E – G would normally become progressively insignificant [Table in Doc. 36(2), page 9]. It follows that the applicant's claim that beyond 8km the development would be unlikely to affect landscape quality due to distance, is not accepted.
- 7.4.58 Fieldwork suggests that ZVI data should be available at up to the limits of band F or 20.4km at the point where the turbines become indistinct and have a negligible impact on the wider landscape. This is close to the limit chosen in the ES of 20km. Although the ZVIs in the ES could have used a more detailed OS base, they do show that, especially to the south-west and north-east the majority of turbines will be

visible at hub height and more over much of the plateaux within a 10km radius [Plan A, Figs. 14 and 15]. Within the bands A and B or 5.5km radius of the site the turbines would be dominant when seen in their entirety and even highly discordant where only the upper blades were seen. Views in bands C and D of up to 12.5km the turbines would be clearly seen and contribute towards the aggregate visual impact. The ZVIs show that local topography produces a scatter of visibility at even greater distances which would mainly be of relevance in combination with views of other existing or proposed wind farms.

- 7.4.59 It is considered that the three-fold hierarchy used in the ES for sensitivity and magnitude of change is too crude [Doc. 3, Vol. 2, paras. 6.3.2.9 and 6.3.2.11]. CPRW have used additional grades which it is accepted can appear as too complicated a picture, but which provides a wider band of 7 grades and reflects the intermediate stages between the crude levels of high, medium and low or substantial, moderate and slight. For comparison purposes with the ES these can be converted to numerical indices [Doc. 36(2), pages 11 and 12; and Doc. 37(C)]. CPRW are concerned that the approach in the ES effectively downgrades the landscape character areas, particularly plateaux, and fails to recognise the importance of their vast vistas.
- 7.4.60 CPRW accept that the 17 viewpoints used by the applicant cover a broadly representative selection, but suggest that 3 further viewpoints 18, 19 and 20 be added. No. 18 near the top of the Talerddig – Cwm-nant-yr-Eira road was withdrawn at the inquiry as it was accepted that turbines would not be seen. No. 19 was the road below the Carno wind farm entrance and No. 20 was at the summit of Bryn-y-fan, near Llyn Clywedog. CPRW also consider that the photographs of viewpoints 2, 3, 4, 11, 15 and 16 could be misleading to some extent because of the precise positions they were taken from. It is also felt that road users are not predisposed to be low sensitivity receptors.
- 7.4.61 CPRW's own assessment shows the areas of agreement and disagreement with that made in the ES in respect of receptor sensitivity, magnitude of change and visual effect for the 17 viewpoints plus the 3 additional locations [Doc. 36(2), pages 19 and 20]. The results have been converted to a numeric ranking [Doc. 36(2), page 21]. The ES adopts the threshold of what is 'significant' as lying at the lower end of major/moderate. CPRW do not disagree with this, but their matrix allows for 'contributory' and 'conditional' significance as well as 'independent' significance to be included at an increasing range of viewing distance, thus refining the crude judgements made around the moderate category [Doc. 36(2), pages 22 and 23]. The results of the ES and CPRW analysis based on the numeric scoring system [Doc. 36(2), page 23] shows that the ES only recognises 2 of the 17 viewpoints as having a visual impact of independent significance, whereas CPRW records 7, including 3 of major significance. Similarly, the CPRW individual scores for each viewpoint are higher in almost every case.
- 7.4.62 It is submitted that the ES has consistently applied a lower ranking than appropriate to the visual effects of the wind farm proposal. This is mainly due to the failure to appreciate the sensitivity of viewpoint receptors and the crude evaluation of the plateaux landscapes as of only medium quality and sensitivity. It follows that the overall visual impact of the proposal would be considerable and substantially greater than suggested through the ES.

- 7.4.63 The decision on the Cwm Llwyd application must hinge on the balancing of the renewable energy need and any incidental benefits against any significantly detrimental effects on the landscape or amenity. It is therefore necessary to demonstrate that any adverse effects are significant in terms of local and national policies. CPRW consider that the policy implications of the foregoing visual analysis, which shows there is a significant degree of adverse impact, are that the proposal is contrary to Structure Plan policies EC3 and EC20E, and to Local Plan policies ENV3, ENV24 and ENV25, together with other policies which have been dealt with in the evidence of CCW, CUM and MWT [Doc. 36(2), page 26].

CUM

- 7.4.64 Given the importance of the development plan, due consideration must be given to the fact that the PSP and MLP consistently emphasise the extremely high quality of the Montgomeryshire landscape [eg: Doc. 4, CD7, paras 4.16, 4.37, 4.38, 4.40, 5.13; and CD8, paras. 5.1 – 5.4, 5.11]. The development plan resists development that would have significant adverse effects on the landscape [eg: Doc. 4, CD7, paras. 4.42, policy EC20E; and CD8, para 5.42]. Policy ENV3 of the MLP is of particular interest because it is set out in terms which show the aesthetic credentials of wind farms seen through the eyes of those who formulated the Local Plan. The policy has the basis that development in general in the Western Uplands SLA should be “*appropriate to the character and high landscape quality*” of that area, before going on to say “*unless an exception is justified for a wind farm development complying with other Local Plan policies.*” The wording makes it clear that a wind farm is not a form of development which could be in keeping with the SLA character and quality, otherwise there would be no need to treat it as an exception. It must also be that any development should offer above average solutions to aesthetic problems and landscape effects.
- 7.4.65 NWP claim to have the resources and expertise to plan carefully designed wind farms, but then complain of the difficulty in environmental assessment of defining the likely effects on particular interests and their significance. They refer to the uncertainty created by the “ultimate subjectivity of certain judgements” [Doc. 3, Vol. 2, paras. 1.8.1.2 – 1.8.1.4]. It is interesting to note that the list of references shows only 5 titles on landscape and visual assessment compared to 38 on archaeology.
- 7.4.66 NWP list 5 categories in the ES by which the significance of visual effects can be assessed, which provide only 1 category above the conceptual centre point of moderate and 3 below [Doc. 3, Vol. 2, para. 1.8.1.6]. This shows a bias in favour of low effect judgements. The terms ‘moderate’ and ‘medium’ are used by NWP throughout the charts in their landscape and visual assessment in a similar fashion which gives a consistent bias against the ‘major’ category where impacts are unacceptable. Thus, even though the development plan refers to the high quality of the landscape, the applicant applies a blanket downgrading across the whole of its assessment, which cannot be regarded as an objective or neutral approach. This is shown by the ES listing all the landscape character areas, except one, as of only medium quality and all as having a medium level of sensitivity [Doc. 3, Vol. 2, Table 6.3].
- 7.4.67 At the inquiry the applicant’s landscape witness sought to justify her view of the SLA as medium quality by comparison with Snowdonia National Park. This goes against the statement in MLP policy EC3 that the SLA is of high quality and the Local Plan

Inquiry Inspector's Report [Doc. 19(1)] which refers to that high quality and "*the highly attractive landscape that exists throughout the SLA*". In any event, differences in the type of landscape, with the space of the SLA plateau and the mass of the Snowdonia mountains, do not mean they are different in quality.

- 7.4.68 NWP assert that the visual impact of the turbines will be substantial and that of the sub-station slight. At the same time in a further assessment the gap between those categories is diminished to major/moderate for the turbines and moderate/minor for the sub-station. In a further table listing all 12 landscape character types only one, the Mynydd yr Hendre plateau is there considered to be a major/moderate visual impact on its quality [Doc. 3, Vol. 2, Table 6.4]. If the downgrading exercise is accepted it is clear that where NWP find only a single significant effect from 12 types, it should be nearer to 6 types if there is a compensatory upward adjustment as CUM believe. Mynydd yr Hendre should then be classified as a major impact.
- 7.4.69 It is the conclusion of CUM that NWP's consistent downgrading of the uniform high quality of the Montgomeryshire landscape is a deliberate means of attaining the results necessary to justify construction of the wind farm
- 7.4.70 17 viewpoints are listed in the ES and their sensitivity assessed [Doc. 3, Vol. 2, pages 81 – 96 and Photo. 2, VPs 1 – 17]. This exercise is flawed as, for example, the Llandinam wind farm (VP8) with panoramic views of the Cambrian Mountains and all existing wind farms, and Clatter (VP10) enclosed within a river bowl and with no wind farms in sight, are both assessed as low sensitivity.
- 7.4.71 Furthermore, NWP emphasise the importance of the receptor types in determining sensitivity, but provide no evidence in support of this opinion. How do they know what different people will perceive? They see a sensitive receptor in both physical landscape terms and people, which offers a confusion between insentient land forms and sentient beings within the same category. They go on to make dubious assumptions about receptors and the roads they travel on. For example, all receptors in Llanfair Caereinion are judged to be road users, whereas on the same road in Cefn Coch, residential, footpath and road users are considered. The same applies where Llyn Mawr receptors are shown as both footpath and road users, yet Garreg-hir has only the former. This is conflicting and cannot be objective.
- 7.4.72 There is further lack of objectivity in the grading of sensitivity in relation to the type of road classification and user. For example, the A470 is listed as a tourist route of medium sensitivity and the Cefn Coch – Carno road through the wind farm as a minor road for agricultural and quarry traffic of low sensitivity. This ignores 2 factors. First, is that sensitivity is at its greatest close to the wind farm and diminishes with distance. Second, there is significant use of the latter route by workers at the Laura Ashley factory in Carno, tourists, and other holiday makers based in the holiday parks in the locality. It is also a doubtful premise to imply that local people have a lower sensory threshold than A470 tourists.
- 7.4.73 CUM are concerned about the particular impact of the proposal on Carreg-y-Big and Bryngwyn. The screen planting proposed to mitigate the effect on the former property was withdrawn at the inquiry [Doc. 15], but it showed ignorance of tree growth conditions, a poor layout and would have introduced an alien form of planting into the landscape. However, the introduction of the shelter belts in the first place was a recognition by NWP that the visual impact on Carreg-y-Big was unacceptable,

yet now they have been withdrawn there is no mitigation of that harm so the impact should be regarded as a reason to reject the proposal. The other factor is that the wind farm would not just be seen from the house, but would involve travelling past the turbines to reach it which would add to the major impact on that property. In the case of Bryngwyn, CUM have been made aware at the inquiry of the agreement between NWP and the occupier, but maintain their concern that it would be badly affected and so a potential loss to the local housing stock.

- 7.4.74 There are other matters of concern which have visual implications. The ES is vague about the details of the turbines to be used and it is difficult to assess the scale from the information provided [Plan A, Fig. 4]. However, at the inquiry the overall turbine height of 59m (or 193 feet) has been clarified. CUM consider this can be compared with the height of a 60 year old oak tree at about 18m high or a man of 1.8m height to give some idea of the massive scale of the turbines [Doc. 43(5)].
- 7.4.75 The applicant's landscape witness acknowledged the composition of landscape and sky in her evidence, yet the skyscape, cloud, sun, shadow, weather and seasons are all words which are absent from the ES [Doc. 50, App. 9]. The sky is a vital part of the visual equation, in terms of horizon vistas and its sun and shadow effects that reveal the subtlety of the plateau form and colour. This is a serious omission from the landscape assessment. Also, bearing in mind the height of the turbine towers the shadows they cast will be extremely long in the early morning and evening [Doc. 50, App. 10]. A motorist driving west at sunset past the wind farm towards Carno could experience stroboscopic flicker within the already dazzling sunlight.
- 7.4.76 NWP provide little evidence about the visual and amenity impact of the sub-station. It is now proposed to widen the track to the site on its uphill side from about 2.5m – 3m wide to 4.5m wide, possibly including a new stretch of track near Cefn Brith. This could result in a scarring of the hillside which would remain for many years. There are no details of how the area would be restored or where the surplus soil will be dumped. Also, the applicant is uncertain of the views of the sub-station from Cwm Llwyd now forestry trees have been cleared, and it is obvious that there would have to be substantial excavation of the hillside to provide a level compound for it.
- 7.4.77 The policy information submitted by NWP contains little analysis [Doc. 3, Vol.2, section 5.4 and Doc. 5, CD39]. However, in the ES [Doc. 3, Vol. 2, para. 6.5.4.1] and in the evidence of NWP's landscape witness it is suggested that the decommissioning phase of the wind farm would have a positive effect on the landscape and visual amenity of the area. If this is so, then it is logical to assume that building it in the first place will have an adverse effect.
- 7.4.78 NWP acknowledge the status of the MLA as the definitive local landscape assessment, yet say little about their compliance or otherwise with its aims or the support for it in MLP policy ENV2. The MLA is an objective tool to inform the planning process and also an indicator of the suitability of different landscapes for development. Within the SLA the MLA states that the hillslopes and saddles character areas may provide suitable locations for wind farms, whereas under the plateaux areas the emphasis is different by indicating great care should be taken. It also specifies that the area around Garreg-hir would not be suitable. CUM believe that it is the intention to safeguard the amenity value of Garreg-hir as a viewpoint over an expansive area, including the mountains to the north which would be

disrupted by the proposed wind farm. The proposal fails to safeguard this special feature of the plateau and conflicts with MLP policy ENV2.

- 7.4.79 The MLA goes on [Doc. 5, CD30, paras. 5.71 and 8.75] to note that the few roads which cross plateaux are significant tourist routes and offer splendid views, with scenic routes across the plateaux whose settings should be conserved. The wind farm would straddle such a route and represents an unacceptable conflict with policy ENV2. The journey along this route from Carno to Cefn Coch [Photo. 5] provides a panorama west over the lowland towards Shropshire, views towards the Aran Fawddwy mountains and Cadair Idris to the north and north-west. The view to the south west towards Plynlimon is already degraded by the Carno wind farm.
- 7.4.80 Taking the raft of landscape policies in the development plan as a whole, it is clear that the Cwm Llwyd site is in a locality least suited to such a development. If approved, it would cast doubt on the purpose of those policies. Montgomeryshire already has the largest concentration of wind farms in the UK and MLP policies ENV 24 and 25 seek to prevent proliferation and cumulative impact.

7.5. ECOLOGY AND ORNITHOLOGY

CASE FOR APPLICANT

The main points were:

- 7.5.1 An ecological and hydrological assessment of the area including the application site was undertaken in 1995 as part of the Mynydd yr Hendre scheme and new data was gathered in 1998, as set out in detail in the ES [Doc. 3, Vol. 2, Chapter 7 and Vol. 3, App. 7]. There are no designated areas of nature conservation or ornithological interest within the site and only 3 designated and 1 non-designated sites of such interest within a 5 – 10km distance. These are described in the ES, but would not be affected by the wind farm [Doc. 3, Vol. 2, paras. 7.4.2.2 – 7.4.2.11 and Plan A, Fig. 21].
- 7.5.2 The assessment showed that the site comprises an extensive area of enclosed upland habitat which has been substantially improved for agriculture. A wide variety of communities were identified, with the most diverse range of types being associated with bogs and mires [Plan A, Fig. 19]. Those communities are, however, limited in area and fragmented in their distribution. The hydrological conditions and topography of the site have resulted in a predominantly west-east linear alignment of valley mires [Plan A, Fig. 20]. There are high water table levels in blanket peat and valley mires, with acid flushes conducting water from hillslopes to the valley mires. The ES identifies four examples of mire habitats which are considered to be development constraint areas [Doc. 3, Vol. 2, paras. 7.4.3.33 – 7.4.3.39; and Plan M].
- 7.5.3 CCW have mentioned an additional constraint area around turbines 2 and 12, but this is not considered to warrant the description of blanket bog and it is now proposed to delete the access track crossing this area anyway. Only active blanket bog is a priority Annex 1 habitat under the Habitats Directive and there are no areas proposed as Special Areas of Conservation within the site.

- 7.5.4 However, the concern of CCW over the system of east-west running wetland areas in the north-east area of the site which they say has affinity with blanket bog is acknowledged. A Management Agreement has been prepared [Doc. 57(1)] which seeks to minimise the pressure on such high value areas by controlling grazing patterns on the hill. This will address CCW's concern that the site tracks will improve access for farmers delivering fodder and increase grazing, but it also must be pointed out that access is already adequate across the site using existing roads and tracks, so no significant additional impact would probably result anyway.
- 7.5.5 It is important to note that ecological advice has been adopted by NWP during all stages of the planning and design of the wind farm. Consequently the scheme already includes a range of measures which will minimise or avoid potential ecological impacts, including re-siting of turbines and tracks and other measures to minimise the impact on the hydrologically sensitive parts of the site. The mitigation measures are described in the ES [Doc. 3, Vol. 2, section 7.7]. The work would be overseen by a site ecologist and include an ecological methodology for the construction of the wind farm and a land management programme. A draft programme for good practice in the construction and restoration has been prepared [Doc. 21, App. SL5] and the Management Agreement proposed for certain sensitive areas [Doc. 57(1)].
- 7.5.6 It is submitted that the proposal is not out of accord with development plan policies. Taking account of the mitigation measures proposed, it has avoided unacceptable adverse effects or minimised its environmental effects, so is not in conflict with CSP policies EC4, EC5 or EC20(D). Policies EC8 and EC20(C) of the PSP and policy ENV8 of the MLP only relate to nationally designated areas and policy EC9 concentrates on protected species. The measures proposed as parts of the design and management of the wind farm would protect and enhance or improve habitats and satisfy the aims of MLP policies ENV9 and ENV10.
- 7.5.7 The land management scheme previously mentioned is in the form of a section 106 Agreement. This has been discussed during the progress of the inquiry and CCW have now accepted that such an Agreement, alongside certain conditions, could satisfy their outstanding concerns. The revised layout plan on a digital basis enables each turbine to be located with a high degree of accuracy, thus delivering confidence that the turbines and associated tracks are capable of avoiding damage to sensitive areas, such as active blanket bog. The Agreement controls not only sheep grazing, but cultivation, drainage and other activities on parts of the application site and other land adjacent to it.
- 7.5.8 In respect of ornithology, the developers have undertaken studies over the years as part of the wider ecological work. The survey findings and the envisaged impact of the wind farm are summarised in the ES [Doc. 3, Vol. 2, sections 7.4.5, 7.5.2 and 7.6.4; and Vol. 3, Apps. 7.4 and 7.5].
- 7.5.9 The ES comments about the likely number of breeding curlews compared to the 1993 figure of 7 territories are speculative as the 1998 site visit did not attempt to gauge population sizes [Doc. 3, Vol 2, paras. 7.4.5.37 – 7.4.5.39]. The CUM evidence suggests an awareness of at least 2 pairs of curlew in 1998 and it is unlikely that this would be an under-estimate to the extent that there are more than the 7 pairs listed in the ES. No other parties at the inquiry seem to have examined the curlew population themselves.

- 7.5.10 Both CCW and CPRW mention that curlew are in the 'long list' of globally threatened species [Doc. 21, App. SL2], but it is important to note that they are not afforded specific statutory protection nor subject of any Action Plan or conservation programme. Many of the long list species are common and cannot be considered to be high priorities. Curlew are included because they have unfavourable conservation status in Europe and are listed in the Bonn Convention on migratory species. It is submitted that the wind farm would give rise to no significant effects on the European status of curlew, so its inclusion in the long list is of no relevance.
- 7.5.11 CCW, CPRW and CUM suggest the Trannon Moor studies indicate a decline in curlew breeding population as a result of wind farm development. This is not accepted. In fact, pre-construction surveys were carried out in 1977 and 1995 which showed 9 and 13 pairs respectively, whereas the post-construction work 1997 – 99 showed 10, 8 and 9 pairs. This fluctuation is entirely consistent with the pattern of natural population fluctuation one would expect without any development. There is no formal study to show that curlew have less breeding success on the edge of the wind farm than those in the centre, so any suggestion of this is speculative. Any conclusions drawn from such a study depend substantially on where the study boundary was drawn, as an extension of say 50m would have shown a different situation. The Swedish study was devoid of pre-construction data, but used average data gathered from nearby similar habitats. The study did show that waders could cope with wind farms and this finding is as relevant to an upland site as to a lowland area. In summary, there is no evidence to show that the Cwm Llwyd wind farm would have a significant adverse impact on breeding curlew populations.
- 7.5.12 The skylark is also not specially protected under UK or European legislation, although it appears on the Biodiversity Action Plan long list. CCW have confirmed that they raise no objection to the development on the basis of impact on skylarks, subject to a monitoring programme. NWP have every intention of undertaking a bird monitoring programme at the site whether or not a condition to that effect is imposed. The reason for the decline in skylark numbers is largely due to changes in cereal cropping on arable land [Doc. 21, App. SL3] and this seems at odds with the suggestion by CCW that they are largely dependent on unimproved grasslands and heath and the conservation of uplands is vital to their survival.
- 7.5.13 The concern of CUM about barn owls is noted. In 1993 a barn owl nest was discovered over 400m from the nearest turbine position, but this appeared abandoned in a subsequent survey although 2 turbines were deleted at the time because of their proximity to the nesting site. There is good quality habitat for hunting to the north and west of the wind farm site, but in any event it is considered that the owls would not be adversely affected because of their keen eye sight and their low flying activity which would be below turbine blade level. This view is supported by the recording of a barn owl hunting within the Carno wind farm in the 1999 Trannon survey.
- 7.5.14 It is considered that the available evidence shows that golden plovers co-exist with wind farms, as shown in the Haverigg wind farm study [Doc. 21, App. SL4]. That site was found to be used by golden plover on a daily basis, with no records of collisions and roosting within 100m of turbines. A sighting of a flock of around 1,000 golden plover and lapwing landing in a field within 300m of turbines at the Siddick wind farm in Cumbria has also been reported.

- 7.5.15 Overall, the objectors have not shown that birds would be subject to any significant collision risk, or suffer any continued disturbance beyond the construction period. The Trannon surveys must be considered in the context of the boundary position and no evidence has been presented from other wind farms to show harm to bird populations. It is submitted that Structure Plan policies EC4, EC5 and EC9 are satisfied in respect of birds and there is no pertinent advice in the MLP which deals directly with ornithology.

CASES FOR THE OBJECTORS

The main points were:

CCW/MWT

- 7.5.16 The PSP policies EC5, EC5A and EC20D, together with MLP policy ENV9, require development to minimise or avoid adverse environmental impacts and to protect wildlife habitats. Despite agricultural drainage and improvement, a substantial part of the site continues to support semi-natural vegetation, including a diverse range of wetland habitats. The north-east quarter of the site supports an unusual system of east-west running wetland below rocky ridges and displays an affinity with blanket bog in terms of its vegetation species. Blanket bog is an Annex 1 habitat under the EU Habitats Directive and has been accorded priority status by the UK Bio-diversity Group. Its Habitat Action Plan [Doc. 34] recognises the threat to such habitats caused by heavy grazing and drainage and seeks management schemes to maintain its status.
- 7.5.17 MWT share the concern of CCW that the blanket bog areas and mosaic habitats should be safeguarded. It is also concerned that the improved access within the site created by the turbine tracks will encourage increased sheep grazing in the central and northern parts of the site, with increased opportunity for out-wintering of stock as fodder can be more easily transported. The bog mire and heath habitats are particularly susceptible to damage by winter grazing.
- 7.5.18 CCW accept that micro-siting of the turbine positions would minimise damage to 3 of the 4 constraint areas identified in the ES [Plan M] and the removal of the track between turbines 2 and 12 avoids crossing the valley mire in that locality. However, there is concern that the track network around turbines 42 and 43 would damage the bog and mire mosaic in that area. The improved access created by the track network could increase the potential for sheep grazing damage, especially in the area around turbines 41 – 44.
- 7.5.19 Consequently, the Land Management Agreement now proposed is necessary to properly manage the semi-natural vegetation, including the wetland of greatest value [Doc. 57(1)]. These layout and management measures are also necessary to take account of the relevant development plan policies on habitat protection and enhancement. CCW accepts that a suitable Agreement along the lines of that placed before the inquiry by NWP does address the habitat issues to a sufficient extent that they should not form a basis for refusal of the wind farm. However, it would prefer the Agreement to impose maximum, rather than average, stocking numbers to achieve habitat conservation and easier monitoring and enforcement.

- 7.5.20 In respect of ornithology, CCW have concerns about the impact of the wind farm on certain bird populations. The ES has shown that there is a breeding population of curlew within and on the edge of the application site and CCW believe that the proposed wind farm would displace them. The population was stated to be 7 pairs in 1993 and it is assumed from more recent surveys that the number remains about the same. This probably represents about 2.5% of the Montgomeryshire total and is a locally significant figure, so it is not accepted the population is small [Doc. 33. 9]. Curlew are listed in the UK Biodiversity Action Plan as a globally threatened/declining species [Doc. 21, SL2]. A major reason for this is their unfavourable status in Europe, probably due mainly to loss of breeding habitat.
- 7.5.21 The applicants have referred to the Trannon Moor study in 1995 and 1997 and a study undertaken in Sweden [Doc. 3, Vol. 2, page 128; and Doc. 33. 4 – 5 and 8, and Plan C]. In fact, further studies at Trannon Moor were undertaken in 1998 and 1999 when the author concluded that the wind farm has had an adverse effect on the species as breeding pairs had declined from 6 to 2 between 1995 – 99 [Doc. 33, 6 and 7]. The study shows that breeding numbers were not only affected during construction of the Carno wind farm, but have not recovered 3 years later. Moreover, it seems that breeding curlew displaced from the wind farm core area to peripheral areas suffer poor breeding success. The ES itself suggests that for breeding waders displaced by the wind farm the suitable habitat elsewhere is limited and CCW agree with this [Doc. 3, Vol.2, para. 7.6.4.8]. No evidence has been presented to show that there is a good alternative habitat in the vicinity of the application site.
- 7.5.22 The Swedish study concluded that there was no reduction in the breeding density of waders caused by a wind farm, but it presented no data on the situation prior to construction so is flawed. It also has other factors which make it unreliable in respect of curlews. It related mainly to waders other than curlews with different characteristics and behaviour; it was based on data only from one year and does not appear to have used the Brown and Shephard survey method [Doc. 33. 2] as claimed; and it was a coastal, not upland, site and was compared to other sites which may have been substantially different from itself. It follows that little credence can be given to it as useful research, although it is alarming to note that the breeding densities of 5 out of 9 species of waders encountered were lower in the wind farm site than elsewhere.
- 7.5.23 MWT broadly share the views of CCW on the significance of the curlew population at Cwm Llwyd and on its conservation importance. The Trust also agrees that the Trannon Moor study suggests there is likely to be a detrimental effect on breeding curlews from a wind farm development.
- 7.5.24 The ES states that skylarks occur in great numbers throughout the site. It is a bird which has declined by 54% nationally between 1969 – 91 and is included for conservation in the Government's Biodiversity Action Plan [Doc. 33. 1]. Both CCW and MWT consider it is vital to conserve the upland unimproved grasslands and heath to ensure their survival, especially in view of the loss of lowland habitats which have not been replaced. In addition to the skylark there is some concern that the wind farm could affect other vulnerable bird species, including snipe and barn owls. The snipe is known to breed on the site, but is difficult to study and its night time activity could make it susceptible to collision or disturbance from the turbines. A pair of barn owls are known to breed adjacent to the site and it is also a species which has not been studied in relation to wind farm impact. A recent count in Montgomeryshire revealed

only 47 known pairs. A wintering flock of golden plover are known to frequent the site and could be subject to collisions and disturbance, but it is again believed that the effect of a wind farm on it has not been studied. The applicants have mentioned a study at Haverigg wind farm, but it appears to lack pre-construction data so only shows that some of this species continued to use the site.

- 7.5.25 It is the submission of CCW that the Trannon Moor study suggests there is a strong risk of displacement of curlew from a wind farm site. At Cwm Llwyd a locally significant population of breeding curlew would be affected and this raises a significant objection to the wind farm proposal. If the development is to be approved then a condition or Agreement should be imposed to provide for a suitable bird monitoring programme to research the effects on the notable populations of waders and skylarks. Also, the construction of access tracks and turbine foundations should not be allowed during the bird breeding season.

CUM

- 7.5.26 The evidence of CUM confirms that snipe are present on the site and it is felt that they could be susceptible to turbine blade collision as they fly erratically mainly at dusk and into night-time. CUM are also aware of curlew breeding within the site and they are of conservation interest, having declined in recent years both nationally and particularly in Montgomeryshire. It is contended that the Trannon Moor study shows a decline in curlew territories within the Carno wind farm boundary, whereas it remained stable outside it, which suggests there is an adverse effect. At Cwm Llwyd several turbines would be within 150m in one case and 200m in another of curlew breeding sites.
- 7.5.27 Barn owls are present on the site and bred there in 2000. It is likely they would be affected by the noise of the turbines as they rely on their acute hearing to detect prey and their hunting range would be reduced. There is also a danger of bird strike. They are protected under Schedule 1 of the WCA 1981 and are of national importance.
- 7.5.28 Other species recorded on the site include meadow pipits and skylarks, sedge warblers, grasshopper warblers and reed bunting, all of which suffer from declining populations. It is questionable whether such species will continue to retain territories over the site with its noise and human activity. The protected peregrine falcon has been established near the site for some years and hunts over it regularly. Observations at the Bryn Titli wind farm indicate that it has a deterrent effect on the use of that site by this species, as well as buzzard, kestrel and raven. All of these species use the Cwm Llwyd site, as do hen harrier regularly, merlin, golden plover and short eared owl occasionally, and overflying whooper swans during migration. These latter species were not recorded in the ES. It has been estimated by Dr S Percival of the University of Sunderland that the collision rate per turbine in Britain each year is 0.026. It follows that the 42 turbines at Cwm Llwyd could result in at least 1 death each year which could decimate the wader population over time.

7.6. NOISE

CASE FOR THE APPLICANT

The main points were:

- 7.6.1 A noise impact assessment was originally undertaken as part of the environmental statement for the Mynydd yr Hendre proposal which preceded the current scheme, comprising around 80 turbines [Docs 1 (CD1) & 2 (CD2)]. This was completed in 1994. Noise measurements were undertaken at 8 dwellings neighbouring the proposal, selected on the basis that they may be subject to the greatest noise impact, to determine background noise levels. The positions of these dwellings in relation to the Cwm Llwyd proposal, together with the locations of other dwellings for which noise impact predictions have been derived from these data, are shown on Fig 23 of Vol 4 of the Cwm Llwyd environmental statement [Plan A Fig 23].
- 7.6.2 The background noise surveys and results are summarised in ES Vol 2 Ch 9, sections 9.3 & 9.4 [Doc 3]; the data is presented in ES Vol 3 Appendix 9.2 Figs 1210/TH 1-57 and 1210/Dir 1-10 [Doc 3]. Background noise regression analyses for the noise impact prediction locations are contained in ES Vol 2 Ch 9 section 9.5 and Vol 3 Appendix 9.4 Figs 1210/Reg 1-16 [Doc 3]. The noise impact conclusions for each location are found in ES Vol 2 Ch 9 section 9.7 and Vol 3 Appendix 9.5 Figs 1210/Assessment 1-29 [Doc 3].
- 7.6.3 In response to observations made by CUM about the reliance which could be placed on the assessment of prevailing background levels from the measurements taken, supplementary noise impact assessments were also produced incorporating 90% confidence limits for the calculated prevailing background noise level at each assessed location [Doc 24 Appendices C-E].
- 7.6.4 In undertaking the noise impact assessment full regard was had to national planning policy guidance concerning the effect of noise contained within PPW, TAN 11 "Noise" and TAN 8 "Renewable Energy". The limitations of the BS 4142 rating system, which is designed to assess the likelihood of noise of an industrial character giving rise to complaints in mixed residential and industrial areas, for assessing wind turbine noise in rural areas are recognised.
- 7.6.5 The approach used to assess the acceptability of the proposal in terms of noise impact is based on the document "The Assessment and Rating of Noise from Wind Farms: ETSU-R-97", issued by the DTI NWG [Doc 25]. The document, which is cited as a source of information on the assessment and rating of noise from wind turbines in TAN 8, details the method by which noise criteria may be established to protect the amenity of neighbouring properties, to ensure that unacceptably adverse or detrimental effect will not occur. Account has also been taken, in tendering evidence on predicted noise impacts, on more recent research by ETSU, "Wind Turbine Measurements for Noise Source Identification" (ETSU 1999) and "A Critical Appraisal of Wind Farm Noise Propagation" (ETSU 2000) [Docs 27 & 26].
- 7.6.6 The background noise measurements obtained at the 8 survey properties have been used in conjunction with predictions of the incident noise levels at a total of 29 locations near to the site to provide calculations of the relative impact of noise from the proposed turbines at wind speeds from 2.5m/s (turbine cut-in speed) to 12m/s (the

rated speed of the turbines). Where background noise measurements were not performed at a dwelling, data obtained at comparable locations were used to undertake the assessment. The prediction calculation took account of the expected source sound power level of the turbines; changes in turbine operation with increasing wind speed; and sound propagation factors such as geometric spreading, atmospheric absorption, ground effect, refraction by meteorological gradients and barrier losses.

- 7.6.7 The prediction methodology is designed to give the highest noise levels likely to occur at any dwelling, assuming worst-case propagation conditions. Likely noise effects have been calculated for quiet daytime and night-time periods and assessed against DTI NWG guidelines for acceptable noise thresholds and sleep disturbance criteria [Doc 3 ES Vol 2 Ch 9.7 & Doc 25].
- 7.6.8 The noise criteria seek to ensure that in a low noise environment the daytime level of the LA90,10min of the wind farm noise should be limited to an absolute level within the range of 35 - 40dB(A). It seeks to ensure that turbine noise would not exceed 35dB(A) at any dwelling or, where this would be higher, a level 5dB(A) above background noise level. The DTI NWG believes that this offers a reasonable degree of protection to wind farm neighbours without placing unreasonable restrictions on a wind farm development [Doc. 25].
- 7.6.9 To determine whether turbine noise would cause sleep disturbance to the occupants of neighbouring dwellings, the assessment also analysed the predicted internal LAeq noise level at properties, with windows open for ventilation. It is predicted that the noise from the proposed turbines would be within the DTI NWG guideline threshold of acceptability, and also would not infringe the sleep disturbance criteria, except in the case of one property close to the site (Bryngwyn). Agreement has been reached with the owner of this property regarding future purchase, thus removing any potential objection. Although it is predicted that the turbines would be audible at the majority of the other surveyed dwellings at certain wind speeds when the properties are down wind, the level of audibility would not be such as to cause unacceptable harm to amenity or statutory nuisance.
- 7.6.10 In response to matters raised by CUM in relation to noise issues the following points are made:
- a. The sound monitoring equipment used was appropriate for metering background noise levels in a low noise environment [Doc 24 Appendix A]. Noise measurements, for example at Carreg y Big and Gwaun y Maglu, include data below 30dB(A)LA90. Background noise levels in many survey locations are affected by nearby streams. Although the flows within streams will be reduced during long dry periods, rainfall data for the area indicates that periods of prolonged nil rainfall are infrequent [Doc 24 Appendix G].
 - b. The methodology utilised predicts external turbine noise levels at a given location. This enables the effect on enjoyment of outside amenity areas to be gauged, as well as calculation of internal noise levels, including with open windows.
 - c. The most recent WHO guidelines for community noise (March 2000) are not referred to in any existing planning policy guidance within England or Wales.

However, the guideline has been taken into account in selecting a sleep disturbance criterion of internal noise levels not exceeding 35 dB LAeq, with a preference not to exceed 30 dB LAeq. Regard has also been paid to the potential for event noise levels above 45 dB LAmax to cause sleep disturbance in very quiet noise environments.

- d. The C-weighted sound power level characteristics of the turbines is such that it is not necessary to consider the noise data in any other form than the A-weighted predicted levels.
- e. The wind farm site is neither parkland nor within a conservation area. Advice relating to such situations therefore does not apply here.
- f. The study findings of Bruckmayer and Lang referred to by CUM, relating to greater sleep disturbance arising from internal sound levels with room windows closed than with windows open [Doc. 44], do not alter the noise impact predictions that sleep disturbance would not be caused by the turbines at any dwelling with the exception of Bryngwyn. For an external noise to produce an internal sound level of 25-30 dB(A) with the room windows closed, it would need to be in the range of 45-55 dB(A). With windows open for ventilation, an internal disturbance noise level of 30-35 dB(A) would require an external noise level of 40-50 dB(A).
- g. Although reference is made to the tranquillity of the locality, the predicted noise levels from the proposed wind farm at the majority of neighbouring dwellings are at the lower end of the range of noise levels which might typically be experienced in areas defined as tranquil [Doc 24 Appendix B]. These predicted noise levels are at a wind speed of 12m/s, when other wind noise effects would also be present.
- h. It is acknowledged that differences in wind speed and direction produce variations in the measured background noise level at different sites. However, as the data confirm, the amount of variation depends on the sheltering characteristics of the site and the presence of features such as running water. Assessment of the predicted wind farm noise levels using a 90% confidence level for the LA90 measurement data [Doc 24 Appendix E] demonstrates that, apart from Bryngwyn which is associated with the proposed development, only one dwelling may exceed the DTI NWG guideline lower absolute quiet daytime criteria based on the 90% confidence background level.
- i. Whilst concern is expressed about the possibility of the turbine type selected having a higher noise impact than that calculated, the generic sound power level which has been used can be readily met or bettered by modern machines, which are generally of similar design [Doc 20/5]. The imposition of noise transmission conditions would mean that turbines failing to meet the warranted level would result in the turbine failing its noise specification and being turned off.
- j. In response to concerns about the potential effects of topography upon the predicted noise levels at nearby dwellings, further predictions have been undertaken [Doc 24 Appendix D] which account for the effects of topography based upon guidance contained within a recent ETSU report on wind farm

noise propagation [Doc 26]. The effect of applying corrections to account for the effect of topography is to reduce the predicted noise levels at all properties below the levels published in the ES.

- k. No tonal noise assessment was undertaken for the ES as this can be controlled by noise specification of the turbines and the imposition of a condition which specifies tonal content corrections. No vibration or infrasound report was given for the wind farm since recent ETSU studies indicate that there is no perceptible vibration or infrasound effects from turbines at distances over 100m.
- l. Although rain during the background noise survey period affected the collection of data at two locations, rain affected data was removed from the background noise level calculations. The wind data used to determine the prevailing background noise levels [Doc 24 Appendix F] is considered sufficient to evaluate the noise environment at the measurement locations.

7.6.11 In summary, although CUM make numerous criticisms of the methodology and conclusions, these do not have the weight of qualified acoustic opinion and have been comprehensively and conclusively addressed by expert evidence on behalf of NWP. Noise conditions drawn up to ensure that noise from the operation of the wind turbines does not unacceptably impinge upon the amenity of neighbouring occupiers have been confirmed as satisfactory by the County Council.

7.6.12 Development plan policies relevant to the issue of noise comprise PSP Policies EC 20(a) and EC 23 [Doc 4 (CD7)]. The test set by these policies is that development should not give rise to unacceptable amenity problems. The results of the noise assessment undertaken in respect of nearby residential properties show this would be so, and the agreement with PCC of conditions which comply with ETSU guidelines will secure protection of the amenities of neighbouring residents. Accordingly, it is submitted that the proposal complies with development plan policies.

7.6.13 Other relevant policies and policy guidance, namely MLP Policy ENV 26 [Doc 4 (CD8/9)] and advice in TAN 8 and TAN 11 [Doc 4 (CD15&16)], have also been considered. However, none of this disturbs the relevant advice in the ETSU guidelines, with which the proposal and the suggested conditions fully comply. In the event that MLP should be adopted, the elevation of Policy ENV 26 to the status of development plan policy would not alter the conclusion that the proposal does not conflict with the development plan in terms of noise issues.

7.6.14 In summary, therefore, the noise implications of the proposed development have been thoroughly assessed in accordance with relevant authoritative guidance. All criticisms of the assessment by objectors have been answered. With the single exception of Bryngwyn, which is the subject of an agreement between its owners and the developer, the predicted noise levels at neighbouring properties would be within acceptable limits. Conditions agreed as satisfactory by the County Council would ensure that all properties, including Bryngwyn, received adequate protection from noise nuisance. There is no conflict with development plan policies relating to noise, and there is no material consideration that weighs against favourable determination on the noise issue.

CASE FOR THE OBJECTORS

CUM

The main points were:

- 7.6.15 This is a very quiet environment, unsuitable for industrial noise intrusion. Night-time background noise levels of below 20 dB(A) were recorded frequently in the noise assessment conducted by RES at the nearby Mynydd Clogau site.
- 7.6.16 The methodology used to assess the noise impact of the proposal is flawed. Although TAN8 refers to BS 4142 as "the standard which comes nearest to dealing with the issues encountered in wind turbine development", BS 4142 relates to developments in mixed industrial and residential areas. It is not applicable to areas with background noise below 30 dB(A) such as this locality. It is designed to assess the likelihood of complaints from people residing inside the building. This disregards the outdoor enjoyment of the tranquil countryside environment by residents and visitors to the area.
- 7.6.17 The DTI NWG report [Doc 25] and WHO guidelines indicate that a difference between background noise and turbine noise of 10 dB(A) is likely to give rise to complaints. However, the DTI NWG approach abandons the general principle of setting the acceptable noise level 5 dB(A) above background noise level in favour of an absolute noise threshold in areas of very low background noise. Because the DTI NWG was set up to assist the wind power industry its guidelines cannot be seen as impartial.
- 7.6.18 The adoption of an absolute noise threshold in very quiet areas is done in order to ease restrictions on wind farm developments. However, such an approach is not justified, given the very small national and global benefits gained from a single wind farm. It results in a lower standard of protection from noise for the least spoilt, tranquil environments that are the most vulnerable. It also increases the potential for a greater than 10 dB(A) difference in the noise environment for residents.
- 7.6.19 The experiences of residents near the Mynydd Gorddu wind farm and elsewhere demonstrate that the existing approach to wind farm noise assessment offers insufficient protection for those who live nearby [Doc 51(1)&(2)].
- 7.6.20 WHO guidance on sleep disturbance changed in 1999, and now sets a more stringent threshold for noise avoiding sleep disturbance at 30 dB(A).
- 7.6.21 The assessment of noise effects has failed to take account of the tranquil nature of the locality. PPW confirms that the effect of noise on the enjoyment of areas of landscape, wildlife and historic value should be taken into account. This advice applies to the site, which lies in a Special Landscape Area. Past nuisance case law (Bamford v Turnley 1862) establishes that what constitutes a nuisance depends upon the context in which it occurs. The area around Cwm Llwyd is undoubtedly tranquil and unspoilt by urban influences [Doc 45(1)&(2)]. CPRE criteria include wind power developments amongst forms of development creating a zone of disturbance within tranquil areas.

- 7.6.22 The quality of the sound environment is an extremely important component of the upland experience. Noise from the development may be heard in Carno and Cefn Coch [Doc 3 ES summary]. It will also be heard at Garreg-hir, an important viewpoint offered special protection under the local plan.
- 7.6.23 CUM has been unable to undertake an independent noise assessment, owing to the prohibitive cost and difficulty of finding a suitable independent consultant. Nonetheless, it has serious concerns about the noise assessment in the ES. The data presented are those produced for the Mynydd yr Hendre application in 1994. No attempt has been made to provide fresh predictions based on more recent research into noise propagation. The DTI NWG guidelines provided by the ETSU report "The Assessment of Noise from Wind Turbines" has no statutory weight. It is produced by representatives of the wind energy industry and so cannot be impartial and objective. Requests by the National Assembly for further information on aspects of noise issues have been effectively ignored [Doc 58].
- 7.6.24 Other criticisms are the lack of information as to the type of turbine proposed; the inconsistent application of barrier attenuation allowances due to topography in the noise prediction methodology; the absence of an indication of reliability of prediction results; and the shortcomings of existing methodologies to predict wind turbine noise.
- 7.6.25 The background noise survey is deficient in several respects. In particular, the survey is open to criticism on the basis of insufficient periods of measurement and relevant data at some properties [Doc 44]; use of data at times of high stream flow after rain; lack of data for wind directions providing shelter to properties. The absence of data on background noise levels during the most benign conditions precludes the reliable calculation of "worst-case scenario" predictions for affected properties [Doc 45(3)].
- 7.6.26 There is no tonal noise assessment, no vibration report, and no infrasound report concerning the proposed turbines. Low frequency tones can be disturbing to people and animals. Anecdotal accounts confirm this.
- 7.6.27 In summary, the noise acceptability thresholds adopted by the developer are insufficient to protect the amenity of residents in a quiet rural area. The tranquillity of the area is an essential component of its special character. The prevention of noise pollution should include protection of the wider environment, not just the amenity of residents. The turbines would be clearly audible in the locality and would destroy its peace and tranquillity for residents and visitors alike. The results of the noise impact assessment are unreliable for the reasons given; and should in any event be repeated to a greater level of accuracy before any decision is taken to site turbines in this locality.

Other objectors

- 7.6.28 The evidence of a number of local residents appearing at the Inquiry as interested persons (Mrs A Davies (Carreg-y-Big); Messrs H and R Benbow (Dol Fardyn, Cefn Coch); Dr A Cresswell (Llanerch); Mrs P Madge (Castell-isaf, Adfa)) also refers to the quiet, peaceful nature of the locality and the disturbance that would result from turbine noise. Mr P Brachi (Ffrwd-wen, Carno) refers to the existing noise disturbance from the Trannon turbines experienced at his dwelling (about 1.5km away) during windy conditions, describing this as a deep, repetitive thump or thudding sound at about 80 beats per minute, which is almost felt rather than heard.

7.7. TRAFFIC AND ACCESS

CASE FOR THE APPLICANT

The main points were:

- 7.7.1 Of the development plan policies concerning highways matters identified in the Agreed Statement [Doc 5 (CD39)] as of potential relevance to the proposal, PSP Policies T12 and EC 20(a) are considered to be at issue [Doc 4 (CD7)]. Policy T12 concerns increases in traffic as a result of development. Policy EC20(a) specifically relates to wind energy and requires that there should be no unacceptable problems arising from the provision of site accesses or from the generation of construction movements on minor rural roads. As regards other material policy considerations and advice relevant to the proposal, MLP Policy ENV30 seeks appropriate agreements to secure the implementation of appropriate off-site works [Doc 4 (CD8/9)]. There is also general advice on highway safety matters in TAN8 and TAN18 [Doc 4 (CD15, CD17)].
- 7.7.2 NWP has considerable experience of constructing wind farms throughout the UK using public roads for access in consultation with highway authorities.
- 7.7.3 The proposed access route is described in section 4.7 of the ES Volume 2 [Doc 3 Vol 2]. It follows the C class road towards Cefn Coch and Llanfair Caereinion from the A470(T) at Carno for a distance of around 5km. The road is well used with local light traffic plus rigid-bodied lorries of up to 20 tons weight travelling to and from Tan-y-Foel quarry near the site.
- 7.7.4 The access route is different to the earlier Mynydd yr Hendre scheme, which involved a longer approach along minor roads from the A458(T) to the north east, passing through Llanfair Caereinion and Cefn Coch. The route now proposed is more satisfactory from a technical standpoint and less disruptive to local communities.
- 7.7.5 Although sections of the C class road have poor forward visibility and limited passing places, the route presents similar issues to the access to the Trannon Moor wind farm near Carno, also developed by NWP. The Trannon Moor turbines are of similar size to those proposed at Cwm Llwyd; delivery vehicles would therefore be similar. Upgrading of the Trannon Moor route involved a legal obligation within an agreement under Section 278 of the Highways Act 1980 [Doc 20/9]. The technical difficulties of the Carno - Cefn Coch route could be overcome without excessive cost or inconvenience.
- 7.7.6 The proposed route has been surveyed by highway consultants and their report [Doc 53(1)] has been discussed with the County Council. The main constraints to access have been agreed. A trial run along the route with an articulated lorry similar to those proposed for delivery of turbine components has been conducted in the presence of the highway authority [Photo 6 (video)]. This has demonstrated that the road could accommodate the proposed vehicle deliveries, subject to a detailed survey of culverts, verges and the load capacity of the bridge at Rhyd and implementation of improvement works as necessary.
- 7.7.7 The requirements of the highway authority can be incorporated within an agreement under section 278 of the Highways Act 1980 for appropriate road improvements

before commencement of site works. The W S Atkins report and NWP schedule [Doc 53(1)&(2)] identify the improvements required to the public road system. The implementation of works the subject of the section 278 agreement could be secured by a planning condition. A condition requiring a detailed scheme is quite acceptable where, as here, there is a level of confidence that an appropriate solution can be achieved.

- 7.7.8 The major components of the improvements to the C class road would be verge hardening; culvert reinforcements; road widening/passing bay provision where necessary; improvements to the bridge at Rhyd if needed; and improvements to forward visibility, removal of road humps and carriageway resurfacing as required [Doc 53(2)]. These road improvements would be of benefit to the wider community. If required, agreed areas of the widened road could be downgraded following commissioning of the wind farm to retain its rural character.
- 7.7.9 A traffic management programme would be included as part of any highway agreement. This would schedule the larger deliveries such as turbine components to minimise inconvenience to road users. The programme would include: an agreed schedule of delivery loads, sizes and timings; provision of a tractor unit to assist heavier loads as necessary on the uphill section; communication arrangements with Railtrack at the Carno rail crossing [Doc 20/17] and Tan-y-Foel quarry; traffic marshals; warning vehicles in front of delivery vehicles; notification of local residents along the route.
- 7.7.10 Vehicle movements arising from the proposal are summarised in the ES Vol 2, section 4.15 [Doc 3]. The major use of the road would be over a 9 month construction period. During this time there would be daily light traffic (cars and minibuses) transporting workmen, and lorry deliveries of site equipment, construction plant and turbine components. There would be a likely maximum of 30 HGVs and 40 personnel vehicle arrivals in any one day [Doc 20/8].
- 7.7.11 Deliveries of quarry stone for the construction of access roads would come from Tan-y-Foel quarry close by the site. Concrete for the turbine bases would also be obtained from the quarry. The quarry has confirmed that it is able to supply these materials [Doc 20/18].
- 7.7.12 After construction, traffic would comprise a low level of regular visits from maintenance staff in light vans. There would also be occasional visits during routine maintenance by standard short HGVs and possibly a light crane.
- 7.7.13 Two site accesses on to the C class road would be constructed, at points where good visibility is available. These would be laid out to a standard suitable for use by construction and delivery vehicles [Plan A Fig 3]. In response to concerns raised by CUM about the visual impact of such accesses in a rural location, it is suggested that modified access features such as haunched verges instead of concrete kerbing be provided to the site access radii. This can be secured by a condition.
- 7.7.14 The existing access track past Llannerch and Cefn Brith from the C class road would be improved and widened to 4.5m to provide access for substation construction. There would be approximately 70 lorry deliveries over a 6 month construction period, plus daily movement of workmen. Although there would be some disruption and disturbance for occupiers of Llannerch and Cefn Brith, this would be for a short

period only. The track would be restored to its current running width following completion of the substation; thereafter there would be only minimal access by maintenance staff.

- 7.7.15 In response to concerns raised by Mrs Davies (Carreg-y-Big) about perceptions of danger when using the gated access track to her property at night, which passes close to some turbines, it is suggested that the gates could be replaced by cattle grids. This would remove the need to get out of a vehicle to open and shut gates.
- 7.7.16 In summary, the submitted evidence demonstrates that the development could be carried out safely and without undue traffic and environmental impacts. The necessary improvements to the public road system and traffic management measures during the construction phase have been discussed with the highway authority. A condition requiring a detailed scheme (which would be a Section 278 agreement) is quite acceptable where, as here, there is a level of confidence that an appropriate solution can be achieved. Although CUM raise a number of concerns relating to traffic and access, these are adequately addressed by the evidence presented and conditions proposed. Subject to the measures identified and conditions proposed, all relevant issues concerning traffic and access can be adequately dealt with. There is therefore no conflict with development plan policies or other material policy considerations and guidance relating to traffic and access matters.

STATEMENT OF THE COUNTY COUNCIL

- 7.7.17 The County Council wrote to the developer on 24 November 2000 registering a number of holding concerns in relation to the proposed access route [CL Doc 14(1)]. A number of physical constraints to the proposed route have been identified, in particular the bend and bridge at Rhyd, the adequacy of passing places along the route given its twisting alignment and restricted forward visibility in places, and the steep gradients between Rhyd and the site.
- 7.7.18 A County Council traffic survey undertaken in November 2000 [Doc 14(2)] confirms that the road is lightly trafficked, with a two-way 24hour flow of 336 vehicles at its south end and 172 vehicles in the vicinity of the site. However, this includes a relatively high proportion of heavy goods quarry traffic. The Council has some concern about the additional traffic that might occur during the construction period; however this concern would be considerably lessened if stone and concrete is obtained from Tan-y-Foel quarry.
- 7.7.19 The Council's letter of 18 December 2000 suggested highway matters which might be the subject of planning conditions [Doc 14(1)]. These essentially covered the layout of the site accesses, improvements to the C class highway and traffic management arrangements during the development construction phase. Subject to these matters being satisfactorily resolved, the Council has no objection to the proposal from a highway standpoint.
- 7.7.20 At the time of the inquiry, the precise extent and form of improvements needed to the highway had not been agreed between the developer and the County Council. Although the Council is broadly in agreement with the summary of highway improvements contained in the consultants' report and the schedule of works produced on 24 January 2001 [Doc 53(1)&(2)], a detailed specification of these works has not been provided. For this reason it has not been possible to produce a

Highways Act Section 278 agreement at this stage. However, the County Council is confident that such an agreement detailing adequate highway improvements, together with the agreement of satisfactory traffic management arrangements during the construction period, is achievable. It considers that planning conditions in "Grampian" form relating to the detailed approval and implementation of appropriate measures, followed by a Section 278 agreement, would be an adequate means of ensuring that the highway issues are satisfactorily addressed.

CASE FOR THE OBJECTORS

The main points were:

CUM

- 7.7.21 Despite the length of time since NWP acquired rights to the site in 1995, the ES fails to provide adequate detail of the improvements required to the C class road leading to the site. Consequently, the issues of site access have still not been resolved.
- 7.7.22 Traffic surveys carried out by CUM [Doc 47] show that the Carno to Cefn Coch road is used by a considerable amount of local traffic in addition to quarry vehicles and farm traffic. During the period of this survey quarry lorries were not travelling the road. It is surprising that the developers did not carry out a traffic survey themselves in order to assess the access issues. CUM estimate that the development would involve about 100 journeys daily during the construction phase, about 18,000 journeys in total. This would be a high percentage increase over existing traffic. The road does not have the capacity to cope with the amount and type of additional traffic involved.
- 7.7.23 The consultants' report on the feasibility of using the C class road identifies potential constraints to its suitability. In particular, there are very steep gradients involved, which will require supplementary tractor units to push or pull the loads; and the bend by Rhyd Cottage may not be negotiable by large vehicles. Paragraphs 4.7.4.1 and 4.7.5.2 of the ES [Doc 3 Vol 3] are contradictory in this respect. The video produced by NWP does not demonstrate that a laden, extended, articulated lorry of the type to be used could negotiate the lane from Carno to the site. There are no alternative routes for other traffic or emergency vehicles should a large vehicle become stuck.
- 7.7.24 The ES does not state that stone and concrete for access roads and turbine bases will definitely be obtained from Tan-y-Foel quarry. There is no guarantee that such materials will not be brought to the site from further afield, thus adding to construction traffic, disruption to local road users and difficulties of adequate traffic management. Although NWP says that stone and concrete will be obtained from Tan-y-Foel quarry, no allowance has been made for the movement of sand and cement to the quarry in order to mix the concrete. These journeys by heavy vehicles would be through Llanfair Caereinion and would cause local disruption.
- 7.7.25 Two new site entrances are proposed, in addition to the entrance to the substation access road. The size and scale of these [Plan A Fig 3] would be out of character with their location on a scenic route in a rural setting. In this respect the proposal is at odds with paragraph 6.30A of the modified MLP, which resists changes to minor roads where these would be unacceptably prejudicial to their amenity or conservation value.

Other objectors

- 7.7.26 Mrs A Davies (Carreg-y-Big) objects to the consequences of the scheme for the sole means of access to her property. The access track to Carreg-y-Big from the public highway runs through the site of the proposed turbines; some turbines would be positioned very close to the access, including one by a gate across the track. Such close proximity of turbines would be intimidating and a potential threat to safety, particularly when the track has to be negotiated in the dark and in windy conditions. (Also see paragraph 7.11.3 and 7.11.4.)
- 7.7.27 Dr A Cresswell, the owner-occupier of Llannerch, which obtains vehicular access from the C class road along the track proposed as means of access to the substation, raises objection to this aspect of the proposals. Part of the track proposed for improvement, close to the entrance onto the public highway, is in her ownership. As landowner she would not be prepared to permit the track upgrading works proposed on this land [Doc 55].

7.8. ARCHAEOLOGY

CASE FOR THE APPLICANT

The main points were:

- 7.8.1 A systematic assessment of the area was undertaken in 1990 and further studies for the Mynydd yr Hendre scheme in 1993. These were revised for the current site by CPAT in 1998, as detailed in the ES [Doc. 3, Vol. 2, Chapter 8 and Vol. 3, App. 8.1]. The field work involved searching a 100m wide corridor along the lines of the turbines, tracks and other site infrastructure. There are no existing scheduled monuments within the site.
- 7.8.2 A total of 41 sites were found [Plan A, Fig. 22] and categorised into those of major importance which would meet the criteria for scheduling, those of regional/local importance for understanding landscape development and utilisation, and those of minor interest which provide no significant information on landscape development and utilisation. 1 or possibly 2 sites were categorised as of major importance, 36 of regional/local importance, and 3 of minor interest.
- 7.8.3 The site is in an upland area where there is evidence of occupation since prehistoric times and large numbers of prehistoric monuments have been recognised in the landscape around the site, including hut circles, cairns and stone circles, although only 3 sites of this period were found within the wind farm area. The vast majority of remains within the site are from the medieval and post-medieval periods, including habitations, farm structures and cultivation, peat mounds and stands, and pillow mounds. The layout of the turbines and access tracks is such that, subject to care during construction and the clear marking of archaeological remains, as indicated in the ES [Doc. 3, Vol.2, sections 8.6 and 8.7], there will be no damage to the identified remains.
- 7.8.4 CPAT have been consulted on the objections raised by CUM and their basis is rejected [Doc. 52]. The survey methodology used is standard practice to achieve an

optimum return having regard to time and financial resources. The experience of CPAT in investigating upland archaeology is that there is not a vast amount of remains to be found, but that sites are well spread out and sub-surface features will be relatively limited. In any event, the applicants accept that there should be an archaeological 'watching brief' during the construction of the site to respond to any currently unknown material which may be uncovered. With regard to use of metal detectors, the Cwm Llwyd area is already fairly accessible to the public with a public road and footpaths across it.

- 7.8.5 In respect of the setting of remains, it is contended that Government advice is concerned with those directly affected by the development, not remains outside the site and that the remains and their settings must be considered as a whole, not separated out so that 'setting' can be considered as material consideration on its own.
- 7.8.6 Trees have been planted around Carneddau which will have much more effect on its setting than the wind farm and excavations at that site show no evidence of continuity of occupation since prehistoric times. This is true of much of the uplands. The evidence is that man has occupied this upland locality for a rather shorter period than he was absent from it. The quantity of Bronze Age material found in this area is not unusual in Wales, and it is not correct to suggest that such remains are uncommon in the bulk of Britain.
- 7.8.7 The landscape of the area has been altered considerably, particularly over the last 100 years or so, by agricultural improvement. The Capel Stone Circle just to the south of the wind farm site boundary, for example, is now set in a green sward, very different from its appearance when erected and probably different from even a few hundred years ago. The landscape we now see is not similar to that in the original Bronze Age, nor even of the medieval period. It is an evolving scene where each generation will create its own sense of place.
- 7.8.8 Assessing the proposal in the light of PSP policy EC16, it is submitted that there would be no unacceptable effects on remains or their settings, that further archaeological investigation can be secured by condition, and that an appropriate investigation of archaeology on the site has been undertaken. The evidence of CUM falls well short of demonstrating any unacceptable harm to the archaeological resource within the site and the settings have been addressed in relation to that context and the Capel stone circle.
- 7.8.9 CPAT have had regard to the archaeological landscape of the area surrounding the site before considering the potential impact of the wind farm and policy EC16. The advice in MLP policies ENV19 and 20 is similar to that in the PSP. WOC 60/96 has more extensive advice on settings, but adds nothing in the context of the study area described in the ES and the relevant remains. The bulk of evidence clearly shows there would be no unacceptable effects on archaeology from the proposed wind farm.

CASE FOR THE OBJECTORS

The main points were:

CUM

- 7.8.10 Attention is drawn to the latest advice on archaeology in WOC 60/96, particularly paragraph 10, which refers to the desirability of preserving an ancient monument and its setting, whether that monument is scheduled or unscheduled [Doc. 4, CD18]. There is no mention of the 'setting' of remains in the ES.
- 7.8.11 The ES mentions 41 sites identified within the search corridor, but there may be much more to discover. This is indicated by the fact that the wind farm track network is 9km long which equates with a search area of about 90ha within a site which is over 400ha in area. If 3 previously unrecorded sites have been found when less than a quarter of the site has been surveyed, then there could possibly be a further 9 new sites in the area. The approval of the wind farm would also make the site more accessible and open to unofficial digging and metal detecting which would damage the archaeological resource.
- 7.8.12 The concern about the impact on the setting of remains applies to some of those within and outside the site. The scheduled Capel stone circle is some 650m from the nearest turbine, but only 140m from the site boundary. A major monument, a bronze age barrow, is 270m from turbine 2 and the other major site, a platform to the north-west of Pistyll-du, has 4 turbines within 280m. Other sites are close to turbine positions. There are also sites outside the wind farm boundary which are closer to turbines than some within it [Doc. 46, Fig. 1] and the spread of those sites, for example to the south-west, shows that the setting of many more than those implied by the applicant will be affected by the presence of the wind farm. The ES acknowledges there will be some visual impact on the area to the south of the site, such as Carneddau and Capel circle, but considers this to be minor, whereas CUM contends that the visual and noise impact would be major. The appearance and noise of turbines are incompatible with the quiet setting of such monuments.
- 7.8.13 If the sites in the wider area are broken down into age categories [Doc. 46, Fig. 2] it can be seen that there has been some continuity of occupation and the lack of finds for a particular period could simply mean there has not been a study in the right places. It is appropriate to take account of the surrounding historic landscape when examining the impact of a wind farm and the archaeology is an integral part of understanding the landscape and contributes to the sense of place. The wind farm would introduce an industrial scene which would destroy the atmosphere and sense of place arising from pastoral life over thousands of years.

7.9. TOURISM, RECREATION AND RIGHTS OF WAY

CASE FOR THE APPLICANT

The main points were:

- 7.9.1 The National Assembly is committed to the encouragement of tourism and an improvement in tourist facilities in rural areas, in order to maximise the economic and

employment benefits associated with this. These aspirations are also embodied in the strategic aims of the county structure plan. The emerging local plan similarly identifies the importance of the tourist industry to the mid-Wales economy.

- 7.9.2 Experience to date in the UK shows that wind farms have, if anything, a positive effect on tourism and there is no evidence that there is a negative impact. Developments such as the Delabole wind farm in Cornwall, Swaffham in Norfolk and CAT near Machynlleth demonstrate the visitor potential of renewable energy facilities.
- 7.9.3 Research on wind farms and tourism, including a recent survey of tourism facilities in areas which have operational wind farms, indicates that wind farms can enhance tourism in general terms [Doc 17(25)]. NWP's own experience of visitor access, including open days and group visits, at Trannon and elsewhere, provides further evidence of public interest in renewable energy [Doc 20(11-13)].
- 7.9.4 Although the WTB is fairly neutral on the issue of the effect of wind farms on tourism, its promotional literature for the area features wind farms as public attractions [Doc 20(10)]. There is no obvious evidential basis for the contents of the WTB letter produced by CCW [Doc 35(1)], and there has been no opportunity to question WTB about its position. Mid-Wales Tourism, which promotes tourism interests locally, offered no objection to the larger Mynydd-yr-Hendre scheme which preceded this proposal [Doc 2 (CD3)]. The WDA has actively supported renewable energy as a tourist attraction by publishing a guide to renewable energy schemes in Wales which the public can visit [Doc 5 (CD44)].
- 7.9.5 NWP intends to provide an information board and parking lay-by at the site entrance, together with way-marking of public rights of way across the site, to facilitate visitor access. In addition, it has entered into a Section 106 undertaking to fund the provision of a renewable energy information centre on the A470T in or near Carno, where tourist traffic could be encouraged to stop in the village and to visit the Trannon and Cwm Llwyd wind farms [Doc 57(2)]. The establishment of a wind farm interpretative centre is supported by MLP Policy LD2(d). The undertaking to assist in the funding of such a centre is dependent on the grant of planning permission for the wind farm.
- 7.9.6 The site and surrounding area is crossed by a network of public footpaths and bridleways [Plan G]. The turbine positions have been selected to provide appropriate separation distances from these rights of way [Doc 29], taking account of the Powys CC guidelines set out in "A Strategy for Public Rights of Way and Access in Powys - March 1995" [Doc 17(26)]. Concerns regarding this issue have been addressed by the production of a revised plan showing separation distances between turbine positions and rights of way more accurately and by a suggested condition to ensure the minimum separation distance advised by Powys CC. There is no evidence to suggest that a greater separation distance would be appropriate on either safety or amenity grounds. The scheme does not involve the diversion of any public footpath or bridleway and public access to the site will be maintained at all times.
- 7.9.7 Although there are two areas of common land close to the site [Doc 23(5)], the proposal will not prevent any continued use of these areas. No part of the site or surrounding locality comprises land above 600m a.o.d. Although some areas of mountain, heath and moor below 600m a.o.d. may become open access land under the

CROW Act 2000, upon designation by CCW, it is not known whether this will affect the application site or adjacent land.

- 7.9.8 It is acknowledged that the proposal would have a significant effect on the visual amenity of users of rights of way crossing the site and in the vicinity; this is demonstrated by the visual impact analysis findings for Viewpoint 14 (Carreg-y-Big, 1.4km from the nearest turbine), Viewpoint 17 (Llyn Hir, 4.2km away), and from the locally important Viewpoint 1 (near the summit of Garreg-hir, 2.7km) [Photo 2 Viewpoints 1, 14, 17]. However, the proposed development will not restrict recreational use of the locality, either on foot or on horseback; and the local effects on amenity for recreational walking and riding across the site and in the locality are not of such significance as to make the proposal unacceptable.
- 7.9.9 In summary, the evidence clearly indicates that wind farms are viewed positively by visitors to an area. There are no provable adverse effects on tourism; rather, wind farms are seen as interesting features with a positive tourism value, which adds to the contribution they make to local rural economies. There is particular tourism benefit associated with the Cwm Llwyd scheme, arising from the proposed funding towards a wind energy interpretative centre.
- 7.9.10 Regarding recreational rights of way, the scheme would maintain adequate separation distances between all turbines and footpaths and bridleways. Recreational enjoyment of the area would be affected to some degree, but would not be unacceptably compromised. Based on the above, it is considered that the proposal would not compromise planning policies relating to tourism or recreation. Since the proposal satisfies the requirement of PSP Policy EC20(B) that adverse effects upon existing land uses are minimised, the proposal therefore involves no development plan conflict in respect of these matters. The objective of MLP Policy LD2(B) would be assisted by the interpretative centre funding associated with the proposal.

CASE FOR THE OBJECTORS

The main points were:

CCW

- 7.9.11 CCW, as the statutory advisor to government on sustaining natural beauty, wildlife and the opportunity for outdoor enjoyment throughout Wales, has carefully considered its position with regard to onshore wind power development proposals. This is set out in its own policy framework [Doc 31/1&2]. Whilst considering individual proposals on their merits its concern to protect vulnerable landscapes is such that it will normally oppose developments within or close to special landscape areas where they would cause detrimental visual intrusion. CCW considers that the visual intrusion arising from the Cwm Llwyd proposal would be unacceptable.
- 7.9.12 There are a number of factors underpinning CCW's view that there would be harmful consequences for recreation and tourism. A network of footpaths and bridleways gives public access to the site. The enjoyment of unspoilt uplands afforded by these would be impaired by the turbines. Similarly, the minor road across the plateau is used as a scenic route. Enjoyment of this route and the views it provides would be spoiled by the wind farm, which would straddle the road. Furthermore, the turbines would be extremely prominent from the important local viewpoint of Garreg-hir.

- 7.9.13 The application site immediately adjoins common land area CL54. The proposed development would significantly compromise the recreational use and enjoyment of this common land close to the site, and adversely affect to a lesser extent other areas of common land further afield [Plan N/8]. This would be in conflict with structure plan Policy EC3, which applies to common land as well as locations within or immediately adjacent to SLAs, as well as Policy EC7 concerning development within or adjacent to common land.
- 7.9.14 Whilst current recreational use of the site and its immediate environs appears low, future use may increase, particularly with implementation of the provisions of the CROW Act 2000 [Doc 35(3)]. Under the Act's provisions there will be public access to open country which consists wholly or predominantly of mountain, moor, heath or down, as well as a right of access to common land. Moor, heath or down is not defined by the Act; but does not include land consisting of improved or semi-improved grassland. It is expected that it will take 3 - 5 years to publish the open country access maps in their final form and for the public access rights to become operative.
- 7.9.15 Regarding the use of existing rights of way, a particular concern is the separation between turbines 11 and 17 and the adjacent bridleway, which appears inadequate having regard to the minimum separation distance recommended by the County Council [Doc 31(3)].
- 7.9.16 Existing wind farms demonstrate the difficulty of integrating wind turbine generators into upland plateau landscapes. The relatively unspoilt upland landscapes of the area are a prime asset to tourism and would be seriously damaged by this proposal. The WTB has recently drafted a new policy statement concerning wind farms, in response to increasing numbers of objections to new wind farm development from its trade members. These objections relate to the impact wind farms are having on the Welsh landscape and the perceived effects on the tourism industry in certain areas of Wales. The position of WTB and Mid-Wales Tourism is to oppose commercial wind turbines in primary designated areas and on natural sites that are clearly visible from the primary designated areas. Elsewhere, proposals should demonstrate that there would be no detrimental effect on tourism [Doc 35(1,2 & 4)].
- 7.9.17 In summary, the proposal would, because of its highly damaging effect on this upland landscape, unacceptably detract from the recreational use and enjoyment of the footpaths and bridleways in the area, the locally important viewpoint of Garreg-hir and the scenic road crossing the plateau. The CROW Act 2000 is likely to result in increased public use of the site and surrounding area. The landscape value and openness of areas of common land close to the site would also be adversely affected, detracting from its enjoyment by existing and future users. As such, the proposal would conflict with PSP Policies EC3 and EC7.

CPRW

- 7.9.18 CPRW provided supporting evidence to the stance of CCW with regard to the value of tourism and recreational walking to the rural economy of mid-Wales [Doc 39] and the position of WTB concerning wind farm developments [Doc 35(2)].

CUM

- 7.9.19 It is self-evident that the proposed wind turbines will be large-scale, alien and intrusive objects in the rural landscape. Besides its location within the designated Western Uplands SLA, the site and its environs contain two particular features of significance in tourism and recreational terms which policies seek to protect.
- 7.9.20 The MLA, which underpins local plan Policy ENV 2 [Doc 42(2)], specifically seeks to protect the important viewpoint of Garreg-hir and to safeguard its amenity value as a viewpoint over expansive areas of high quality upland landscape [Doc 5 (CD30 Para 8.7.2 page 26)]. The proposed development would be in direct line of sight in the vista from Garreg-hir towards the mountains to the north-west. In this view the nearest turbine would be only about 2.8km away. The development would degrade the panorama from one of the best viewpoints in Powys.
- 7.9.21 Second, the wind farm would straddle a scenic route across the plateau. The MLA identifies such roads as significant tourist routes which afford splendid views of the moors and surrounding countryside, whose settings should be conserved [Doc 5 (CD30 Para 8.7.5 page 27)]. By contravening these principles the development conflicts with Policy ENV 2.
- 7.9.22 Residents and visitors to the area value the tranquil and visually uncluttered open spaces of the uplands. The proposed turbines would blight this upland area, ruining its recreational and tourism value. Besides the general impact of the presence of turbines on the recreational rights of way crossing the site, there is particular concern that turbines 11 and 17 are closer to a nearby bridleway than the minimum distance guidelines of the County Council [Doc 31(3)] and of the British Horse Society. Besides individual walkers and horse riders, significant numbers of anglers use Llyn Hir and Llyn Grinwydden, around 4.7km north of the site. Groups of walkers from a nearby activity centre also regularly use the area around Llyn Hir [Photo 2 (Viewpoint 17)].

7.10. SITE SELECTION

CASE FOR OBJECTORS

CPRW

- 7.10.1 Site selection is an important factor in forming a balanced judgement of the planning merits of a proposal. WOC 11/99 states that the nature of certain developments and their location may make the consideration of alternative sites a material consideration. Whilst the ES sets out a series of site selection criteria and states that 4 sites were initially selected and 1 rejected, it does not provide information to demonstrate the need to adopt this proposal by comparison with the merits of alternative sites or processes [Doc 3, Vol 2/3.4]. Accordingly, the applicant has failed to show why this site should be adopted in the face of contrary evidence that it would cause demonstrable harm to interests of acknowledged importance.

7.11. OTHER REPRESENTATIONS.

The main points made in oral evidence by interested persons were :

Mr D H Benbow

- 7.11.1 Mr Benbow lives at Dolyfardyn, near Cefn Coch, about 1.1km from the eastern edge of the wind farm site. He objects to the wind farm scheme. In 1993 he was approached by MANWEB to use some of his land at Gwaenydd for 3 turbines in the Mynydd yr Hendre scheme. He eventually decided not to be involved and to oppose a wind farm development. He is worried about noise impact as the prevailing wind blows from the west and the damage which would be caused to such a beautiful landscape. The name Cwm Llwyd is misleading as it is certainly not a wind farm in a valley.

Mr R Benbow

- 7.11.2 He farms in partnership with his parents. He also lives at Dolyfardyn and is an objector. He regards the wind farm as a noisy industrial development which will spoil his enjoyment of the hills and sunsets. The environment is extremely important to his family and the farm is part of the Tir Gofal scheme of CCW. The line of hills seen from his home has not changed since his family settled in the locality 5 generations ago and it is against his conscience to allow this area of natural beauty to be turned into an industrial estate so that other people can waste electricity. He believes that many local people have not objected to the wind farm because they do not wish to upset their neighbours. He is also concerned that property prices in the area have been adversely affected as houses are difficult to sell because of the threat of the development.

Mrs A Davies and Mr G Davies

- 7.11.3 These objectors own and live at Carreg-y-Big Farm which is about 1.1km north of the nearest wind farm turbine position. They purchased the farm in 1983 with the intention of remaining there for life and raising their family. Since then they have restored the farm and rebuilt the house. The farm land has been improved, but with regard to the wildlife habitats and character of the area. This has included the use of traditional materials, tree planting, creating new hedgerows and managing woodland. The use of chemicals is avoided and the farm is home to a number of priority wildlife species in the UK Biodiversity Action Plan. It is unfortunate that the County Council who in the past encouraged families to move back to traditional hill farms do not seem to have bothered to assess the impact of the wind farm on the local housing stock.
- 7.11.4 When the Mynydd-yr-Hendre wind farm scheme was proposed the turbines would have been some 600m away from Carreg-y-Big. A valuation report at that time indicated the effect would be devastating and the property blighted. If the Cwm Llwyd development proceeds the amenity value of Carreg-y-Big as a home will be destroyed. Travelling to the farm past the blades of the turbines would be horrible, walking or riding would be intolerable, and daily living and working in such close proximity to the wind farm would be soul destroying.

Dr A Cresswell

- 7.11.5 Dr Cresswell is an objector living at Llanerch which is approached along the track leading to the proposed sub-station site. It is some 770m west of the nearest turbine position over Cefn Brith. Since moving there in 1997 she has come to appreciate the deep interaction between the people and the landscape. She enjoys walking through the area and is conscious of the archaeological context of the landscape and the sense of timelessness and peace. The wind farm would destroy the sense of place of the whole area and her home. The 'improvement' and use of the access track will change its character and affect her privacy as it looks down onto her property.
- 7.11.6 At first she thought the landscape degradation resulting from the wind farm might be worthwhile in the interests of renewable energy, but she now realises that onshore wind power will not make any significant contribution to meeting the Kyoto commitments and is just political tokenism. The use of the name Cwm Llwyd for the proposal is an attempt to change public perception away from the Cefn Coch area, where the wind farm is really located, towards Carno. Carno community is understandably well disposed towards NWP because the locality benefits from financial aid through the community fund and other means. Also, some local people feel unwilling to object to the scheme because of this. The communities of Cefn Coch and Carno are significantly different in that the former is orientated towards Llanfair Caereinion and Welshpool, whereas Carno looks towards the Severn Valley and Newtown.
- 7.11.7 It is submitted that wind farms are counter-productive as a means of increasing economic growth in rural areas, even though farmers may need to diversify. The applicants' survey of properties in the area showed about a third were unoccupied and there is a need to develop appropriate cottage based industries and tourism. Such activity among the beautiful landscape and tranquillity of Montgomeryshire would be thwarted by the sterilising effect of wind farm development.

Mrs P Madge

- 7.11.8 Mrs Madge is the membership Secretary of CUM and lives at Castell-isaf, south of Adfa. She is not personally affected by the Cwm Llwyd proposal, but objects to it and questions whether the detrimental effect of the wind farm on this rural area is worth the small amount of renewable energy obtained. Wind farms already abound in this part of Wales and it is turning into an industrial landscape which is unlikely to attract tourists. She is part of a local organic food association centred around Carno and it is these sort of initiatives which should be the future of the area, not large-scale wind farms run for the profit of outside companies. A community energy policy is needed which could monitor local use and examine all possible alternative energy options.

Mr A Selvey

- 7.11.9 Mr Selvey lives at Llechwedd-ddu in the Rhyd locality of Cwm Llwyd, some 1.3km west of the wind farm site boundary. He shares the views of other objectors and considers that there is no need for another wind farm in addition to that at Trannon Moor, Carno.

Mr P Brachi

- 7.11.10 He resides at Ffrwd Wen about 1.6km north-east of the nearest turbine on the Carno wind farm and can often hear the 'thud' of the turbine blades rotating. He is not opposed to wind farms in themselves, but believes that there are already too many in the area already. This destroys the special ambience and spirit of the place. There is a need to safeguard the natural environment for the future and to decide on our priorities in terms of that issue and the costs and benefits of wind power.

Mr G Thomas

- 7.11.11 He lives at Bronhaul in Carno and supports the Cwm Llwyd scheme. He is a Community Councillor although he was not representing that Council at the inquiry, and he owns some of the Carno wind farm land. Before the wind farm was built at Trannon few people went there, but now it is often frequented by walkers, cyclists and horse riders. He counted 4 pairs of curlew on that site in the Spring and there are more grouse within the site area than before it was built. He is aware of a barn owl which nests only about 300m from the nearest turbine and has been there for a number of years. There are 6 local families which benefit from the Carno wind farm, all spending money in the area and local groups benefit from its Trust Fund. Many years ago people cut peat from the moorland for fuel and power, and wind power similarly uses a naturally available resource.

Mr A L Burton

- 7.11.12 Mr Burton supports the proposal. He lives at Tyn-yr-eithin, Carno, about 1.7km east of the nearest turbine on the Carno wind farm, and is a Civil Engineer with experience in the field of wind energy. He considers that notice must be taken of the Government predictions on climate change and its implications, including flooding, and the need to drastically reduce CO2 emissions. As far as Montgomeryshire is concerned it is true that it already produces a large amount of its electricity consumption from wind energy compared to other areas, but that is because it is well suited to it with its high plateaux and sparse population. The extra income which hard pressed farmers can obtain from turbines is also important for conservation, as wind farms can encourage them to reduce grazing levels and enter into management agreements which will help to preserve the moorlands and biodiversity. The turbines may be ugly and intrusive to some people, but if they help towards restricting irreversible and disastrous climate change this is a price worth paying and they will only be a temporary problem whereas the alternative is to destroy the environment for future generations. There is a moral imperative to act now to reduce the greenhouse effect, especially in developed nations such as ourselves.

Mrs M Lloyd and Mr M Lloyd

- 7.11.13 They have lived at Hendre, Cwm Llwyd for over 30 years. Mrs Lloyd indicated that she was supported by the residents of 7 of the properties along the Cwm Llwyd road in the valley to the south-west of the site. She stated that the name Cwm Llwyd for the wind farm site was changed from Mynydd yr Hendre because many of the families in that locality are involved in the scheme and it was easy to pronounce. She also noted the benefits to local people and organisations in Carno arising from the Trust Fund there which receives support from NWP. The wind farm would provide financial benefit to local farming families, contribute to renewable energy targets, and

turbines are more pleasing to the eye than the upland conifer forests or the many ugly caravans in Wales. Many years ago pylons and telegraph poles were erected in the area, but they are hardly noticed now. Some people have an idealistic view of the countryside, but it is a working landscape that is always changing and without the retention of a younger generation in the area to manage the rural scene it would soon revert to wilderness. With regard to the impact on birds, the objectors have made much of a decline in breeding without acknowledging that the tremendous increase in the badger population has probably contributed greatly to the loss of ground nesting bird eggs and chicks.

- 7.11.14 Mr Lloyd stated that there was always resistance to change, such as when the railway was first proposed through the area. Some of the landowners who were involved in the Mynydd yr Hendre scheme have been left out of the smaller Cwm Llwyd proposal and in his view this is what led to the establishment of CUM. Also, recent incomers to the area oppose the scheme. If such people object to wind farms they should use the ballot box to pursue their views, although he believes that the County Council generally support the use as they have with other schemes.

Written representations

- 7.11.15 Some 126 written representations were submitted to the inquiry, of which all but 7 objected to the proposal. The objections generally covered the same range of topic issues which were discussed at the inquiry and it is not necessary to repeat them here. However, it is appropriate to make particular reference to some additional matters raised in the following representations.
1. The bulk of the wind farm site and 33 or 34 of the 42 turbine positions fall within the Dwyriw Community Council area, and 8 or 9 of the turbines on the western side of the site come within the Carno Community Council area [Plan E]. Dwyriw Community Council object to the wind farm, mainly on the basis of the adverse visual impact on local residents and visitors [Doc. 41]. Carno Community Council support the application for Cwm Llwyd. They state that they have never received complaints from local residents about Carno wind farm and tourists who visit it contribute to the local economy.
 2. Solicitors for Mr R Houghton, Bryngwyn, Cefn Coch which is in close proximity to the north-east site boundary confirm that he has no objection to the wind farm and supports the proposal. They also confirm he has an agreement with NWP for them to purchase the property if necessary.
 3. Agents for the 13 landowners involved in the wind farm site have written in support of the project. They consider the wind farm can be regarded as a diversification scheme for the farmers involved and provides valuable alternative revenue. They say that the fears expressed about noise and disruption to wildlife in respect of the Carno wind farm have been allayed and that Cwm Llwyd will contribute to renewable energy targets. The village of Carno has also benefited from the community fund set up by the developers. They point out that the 13 families are all involved in farming. From the list provided it appears that they total in excess of 50 adults and children.

8. NANT CARFAN, LLANBRYNMAIR

APP/T6850/X/00/1050744 – APPEAL BY POWERGEN RENEWABLES AGAINST THE NON-DETERMINATION OF AN APPLICATION FOR 16 WIND TURBINES AND ASSOCIATED DEVELOPMENT AT NANT CARFAN, NEAR LLANBRYNMAIR.

8.1. SITE AND SURROUNDINGS

- 8.1.1 The appeal site is located in the Montgomeryshire division of Powys on the plateau ridge of Nant Carfan. It forms part of the Western Uplands SLA designated in the development plan, which extends up to the south-east edge of Snowdonia National Park and the southern limit of the Berwyns SLA [Plan P]. The Cambrian Mountains ESA lies about 4km south-west of the appeal site boundary [Plan X]. The site is about 3.5km north of the village of Llanbrynmair which lies on the A470 trunk road extending east – west between Caersws and the Dovey Valley [Plans A, B and Q].
- 8.1.2 The site is predominantly an area of moorland used for rough grazing by sheep and is stated in the application to cover some 326ha. Its height varies between about 400m and 480m AOD and it is part of the south-western arm of a large plateau which extends to the north and east at broadly similar levels, with a high point of 523m at Carnedd Wen to the north-east. There are no public rights of way within or adjacent to the site [Plan K]. Stretching for about 1.2km to the north of the site is a block of common land [Plan N]. Extending north and north-east across much of the plateau, beyond the common land and from the site's north-east corner, are extensive areas of coniferous forestry plantation. The landscape around the site is generally plateau and plateau scarp, rolling upland hills and valleys. The exceptions are the more distant upland peaks to the north-west and north within the National Park, including Cadair Idris at around 900m AOD [Plan H].
- 8.1.3 From the centre of Llanbrynmair the B4518 road leads south off the trunk road through Pennant towards Llyn Clywedog and the Hafren Forest. From the north side of the trunk road a minor road leads from Llanbrynmair under the Cambrian railway and past half a dozen or so dwellings in the valley locality of Pandy, to the foot of the steep slopes of Mynydd Dol-fawr and Mynydd Rhiw-Saeson below the appeal site. Here a side road extends for about 3km to the north-east around the side of Mynydd Rhiw-Saeson and alongside the Clegyrnant and Cwm valley streams. The road serves some scattered dwellings, mainly located at its northern end. The minor road at Pandy continues north along the valley of Afon Rhiw Saeson and Nant Carfan, around the north-west side of Mynydd Dol-fawr and Mynydd Nant Carfan. It then proceeds on through Cwm Tafalog to join the A458 trunk road at the southern edge of Snowdonia National Park, which is some 3.5km from the northern boundary of the appeal site [Plan P].
- 8.1.4 Across the other side of the valley of Nant Carfan to the west is Mynydd y Cemmaes which is a similar height to Nant Carfan and where the existing Cemmaes wind farm is sited. Further west is the Dovey Valley. The recently approved route of the Glyndwr's Way National Trail passes to the south and south-east of the site and is about 2km away along its nearest section [Plan O].

8.2. SITE HISTORY AND DESCRIPTION OF PROPOSED DEVELOPMENT

- 8.2.1 Following identification of the site in 1993, planning permission was given for 2 temporary wind monitoring masts. A submission under NFFO 3 in 1994 for a wind farm of 35 x 660kW turbines [Plan C(1)] was unsuccessful and work was suspended in 1994.
- 8.2.2 In 1996 an application under NFFO 4 was successful and work began on an environmental impact assessment involving a scheme for 16 x 1.3MW capacity turbines and a revised siting [Plan D(1) and C(2)]. A planning application (LA ref: M1999/0475) was made to Powys CC on 8 April 1999, with the environmental statement comprising Volumes 1 – 4 submitted in May 1999. An appeal against the non-determination of this application was lodged on 6 January 2000 (PINS ref: APP/T6850/A/00/1035495). This appeal was recovered for determination by the National Assembly, rather than a Inspector, on 14 July 2000 and an Article 14 ‘holding’ direction was also issued on that date. The appeal was eventually withdrawn on 8 November 2000.
- 8.2.3 During the consultation process on application M1999/0475 it was decided to make some amendments to the layout design to meet certain visual and ecological concerns. This involved re-locating several of the turbines and track routes from that shown on the May 1999 layout [Plan D(2)].
- 8.2.4 A formal full planning application for the amended scheme was submitted on 24 January 2000 (LA ref: M2000/0220), with an additional Volume 5 of the environmental statement submitted on 14 March 2000. It was stated that Volumes 1 – 4 of the environmental statement submitted with application M1999/0475 were to be read as part of the new application, together with Volume 5 [Doc. 1, Vols. 1 – 5] which set out the basis for the new application and the revised layout. The date of the application given on the form of appeal is 14 March 2000 and that is also the date on which Powys CC acknowledged the application and commenced the statutory period for determination. On 25 September 2000 an appeal against non-determination of the application was lodged (PINS ref: APP/T6850/A/00/1050744) and it is this appeal which is before the National Assembly, following a decision to ‘recover’ it for their determination on 17 October 2000.
- 8.2.5 At the opening of the Nant Carfan inquiry on 5 February 2001 various matters affecting the application were clarified, including the access arrangements and proposed minor amendments to the layout, as set out below. No objections were raised by the inquiry parties to the amendments being included as part of the application.
- (a) A further amendment to the site layout shown in the ES [Doc. 1, Vol. 5, Fig. 1] involving the re-siting of turbine 10 further west. The new layout is dated 5 February 2001 [Plan G(1)].
 - (b) The access to the site is from the A458 trunk road. It was confirmed that on 15 December 2000 the Trunk Road Agency had approved the access details shown on Symonds drawing 56288/OPT/01 rev. P1 [Doc. 22 and Plan G(3)]. It was agreed this drawing should now form part of the application.
 - (c) A new Figure 3 for Volume 4 of the ES was submitted which deleted the alternative access route from the trunk road to the appeal site [Plan G(2)].

- (d) It was confirmed that the drawing of a turbine shown in the ES [Doc. 1, Vol. 4, Fig. 5; and Plans E and F] is indicative only, as stated. The appellants stated that the relevant dimensions of the turbine could be dealt with by condition.
 - (e) The control room plan shown as Figure 7 of Volume 4 of the ES does form part of the application [Plan G(4)].
- 8.2.6 The application is for a wind farm of 16 turbines, each of 1.3MW capacity, associated access tracks, construction of a control building, a wind monitoring mast, and a temporary compound. Each turbine would have a maximum blade tip height of 76m and be 3 bladed, with the rotor and nacelle mounted on a cylindrical steel tower. The steel lattice wind monitoring mast would be 40m high. The single storey control building would be some 9m long by 7m wide and 5m high. It would be located in the south-west corner of the site.
- 8.2.7 Access to the site would be mainly via existing forestry tracks extending for some 8.5km from the A458 trunk road to the north. The trunk road junction would be some 8km east of Mallwyd. About 2km of new forestry track would be needed to link the existing network with the north-east corner of the site where a temporary storage and works compound would be sited for the construction period [Plans G(1) – (4)].
- 8.2.8 The electricity generated by the wind farm would be taken by underground cable to a 33kV overhead line mounted on wooden poles to the south-east of the site. The line would be the subject of a separate application under the Electricity Act, but would extend towards a sub-station near Talerddig and on as a 132kV line to join the existing line near Carno [Doc. 1, Vol. 5, Chap. 8 and Fig. 5].

8.3. ENERGY SUPPLY AND LOCAL EFFECTS

CASE FOR THE APPELLANT

The main points were:

- 8.3.1 The scheme must be considered in the context of Government policies which seek to encourage the development of renewable energy sources, including onshore wind power, in order to meet the established targets for energy production from renewables and reductions in greenhouse gas emissions (summarised in Section 3 Renewable Energy Issues). The benefits of the proposal in terms of contributing to Government renewable energy policy objectives and providing a clean, sustainable source of energy are important considerations to be weighed against any harm or disbenefits which might be identified in terms of conflict with the development plan or other material planning considerations such as local impacts.
- 8.3.2 There is an environmental imperative to reduce greenhouse gas emissions that are contributing to climate change. As part of its response to this, the Government has set targets for the energy industry to meet, in terms of the proportion of electricity generated from renewable sources. It has determined, through NFFO contracts awarded, that onshore wind farms are a key part of its strategy for renewable energy supplies to secure its targets. The existing rate of development of renewable energy sources is failing to meet these targets. Government statements make clear that even though an individual scheme may make a relatively small contribution by itself to the

overall target for energy production from renewable sources, this does not diminish its importance in terms of its contribution to renewable energy objectives. Government targets cannot be achieved without the development of appropriate smaller, as well as larger, energy generating proposals.

- 8.3.3 Arising from the conclusions of the 1995 United Nations Inter-Governmental Panel on Climate Change and the subsequent 1997 Kyoto United Nations Climate Change Conference protocol, European Union and the UK government targets for greenhouse gas reduction, there is a UK commitment to a reduction of greenhouse gas emissions to 20% below 1990 levels by 2012.
- 8.3.4 Current UK government policy seeks to meet that target in part by producing at least 10% of the UK's electricity needs by the year 2010 from renewable resources, with an intermediate target of 5% by the year 2003.
- 8.3.5 The main instrument to promote the increase of renewable energy projects has been the NFFO, which from 1990 to 1998 offered 726 contracts to produce electricity from renewable resources amounting to some 8756MW. The importance placed on wind energy is demonstrated by the fact that contracts for 25% of this capacity (2256MW) were offered to such projects. Figures published by the DTI in March 1999 estimated that the contribution from onshore wind power to the Government's 2010 target of 10% of electricity consumption from renewables would be between 13% and 26% [Doc 12].
- 8.3.6 Of the 195 NFFO 4 contracts awarded, with a total declared net capacity (DNC) of 842MW, 65 were wind energy projects (combined DNC 340MW). Only 3 of these have been commissioned so far, representing only 0.6% of the expected capacity for wind projects under NFFO 4. This compares with the Government's expectation that about two-thirds of the projects and capacity contracted under NFFO 4 would proceed to commissioning. For all five NFFO orders, only 58 wind energy projects with an installed capacity of some 390MW have been commissioned - only 17% of the capacity for which contracts were awarded. There is an urgent need to commission wind energy projects that have NFFO contracts if the Government's target for the contribution of renewable energy sources to a reduction in combined climate change emissions is to be met [Doc 10].
- 8.3.7 The site was chosen as a result of a detailed selection process, involving consideration of various potential alternatives having regard to the findings of an earlier study "Wind Energy in Powys" and a range of technical, environmental and planning criteria [Doc 6; Doc 1 ES Vol 2 s 2.3].
- 8.3.8 The scheme forms part of the tranche of renewable energy generating projects launched in November 1995 under the 4th round of the NFFO renewables order for England and Wales. Its 16 1.3MW turbines would generate some 60,000MWh per annum. It would provide enough energy for the domestic electricity requirements of around 14,500 households [Doc 1 (Vol 3 s.3.3)].
- 8.3.9 In terms of contribution to reduction of greenhouse gas emissions, it is estimated that the proposed scheme would contribute an annual reduction of 56,000 - 65,000 tonnes CO₂, 840 - 984 tonnes SO₂ and 150 - 318 tonnes NO_x. Over a 25 year lifetime it would displace between 1,421,000 and 1,657,000 tonnes of combined emissions from fossil fuel generation [Doc 11]. Company figures for PR show how the combined

effect of its own wind farms is making an increasingly significant contribution to emissions savings [Doc 9(II)].

- 8.3.10 In achieving this reduction, the proposed development would not give rise to any emissions to the ground, or to water. The energy invested in the manufacture and construction of the wind farm would be paid back within 12 months, and over a 25 year lifetime the project would produce 30 times the energy invested.
- 8.3.11 The UK government has placed a reliance on the NFFO scheme to help fulfil its legal obligation under the Kyoto protocol to reduce emissions by 2010. The rate of implementation of NFFO schemes has been very slow, and in order to fulfil its obligation appropriately designed wind energy projects are urgently required. The need for the Nant Carfan scheme is clear, in order to respond to the imperative of reducing emissions that are the cause of climate change.
- 8.3.12 PR has a policy of using local goods and services for the construction of wind farms, subject to commercial competitiveness. The potential value to the local and regional economies of goods and services in the construction of the proposals is in the region of £3m, based on analysis of the construction of Mynydd y Cemmaes wind farm in 1992. Sectors of industry that could benefit include civil engineering and building, electrical services, steel fabrication and ancillary works.
- 8.3.13 The company also operates a good neighbour policy in respect of its operational wind farms. This is normally carried out through liaison with community organisations and support for local initiatives, including donations to local sports clubs, schools and children's play areas.
- 8.3.14 The habitat enhancement plan associated with the proposed development will result in a net benefit to the ecology of the site. The enhancement plan will improve and protect habitat on some 100ha within the site boundary, compared with a land take for on-site tracks and hard-standings, turbine bases, compound area and control building of 6.12ha. The habitat protection will be secured for the 25 year lifetime of the project. The habitat enhancement plan is recognised by CCW, RSPB and MWT as a benefit arising from the proposal.
- 8.3.15 The long-term environmental impact of the proposal would be negligible, owing to the "reversible" nature of the development and the proposals for site restoration at the end of the operational life of the wind farm [Doc 1, ES Vol 2, section 2.7.11].
- 8.3.16 In summary, the Government's approach to renewable energy demonstrates an emphatic and increasingly determined commitment to achieving much higher levels of energy production from renewable sources, to meet the challenges of sustainable energy production and combating climate change. Government emphasis on the importance of developing renewable energy sources has recently increased markedly. The role of wind power in achieving government objectives and targets is crucial. Government policy supporting the development of wind power projects is clearly an important material consideration that weighs significantly in favour of the proposal.
- 8.3.17 The benefits of wind energy can only be achieved on sites with a suitable wind resource. The award of a NFFO contract demonstrates the viability of the Nant Carfan site. The proposal satisfies the twin tests of economic attractiveness and environmental acceptability, and moreover exemplifies the objectives of a sustainable

approach to development in terms of its efficient use of resources, low emissions and the reversibility of the development at the end of its operational life. The possible existence of an alternative site is not a reason for refusing planning permission; each case must be considered on its merits. In any event, opponents of the proposal do not put forward an alternative site.

- 8.3.18 The fact that a particular scheme would make only a small contribution in national terms to overall energy needs is not a reason to dismiss it as not worthwhile. The real benefits of renewable energy schemes must be measured in the context of their cumulative contribution to government energy production and emissions reduction targets. In any event, the Nant Carfan scheme would make a significant contribution to UK energy supply. Schemes such as this must proceed if renewable energy and pollution reduction targets to combat climate change are to be realistically pursued. There would also be substantial regional and local economic benefits, community benefits and wildlife habitat gains. These factors all weigh in favour of the proposal.

CASE FOR THE OBJECTORS

The main points were:

CPRW

- 8.3.19 It is acknowledged that the Nant Carfan site is the subject of a NFFO 4 generating contract, reflected in the 16 x 1.3MW turbines representing 20.8MW installed capacity. However, Government awarded the contracts on the assumption that only about two-thirds would proceed to commissioning. The award of a NFFO contract does not confer any special privilege in the planning approval process, which must be carried out in the normal way. PGW states that government policy is to stimulate the exploitation and development of renewable energy resources "whenever they have prospects of being economically attractive and environmentally acceptable". Full regard must be had to established countryside protection policies in determining the proposal.
- 8.3.20 CPRW's own policies concerning on-shore and off-shore wind power proposals [Doc 35] reflect the inherent conflict between selecting upland sites such as Nant Carfan with a high wind resource and protection of important and vulnerable landscapes. Offshore sites present greater scope for wind power schemes without such unacceptable visual harm. The current tidal lagoon scheme off the coast at Rhyl demonstrates the larger energy contribution other sustainable technologies could make at much less environmental cost [Doc 47(ii)].
- 8.3.21 CPRW estimates more modest electricity production and emissions saving benefits accruing from the proposal than those claimed in the ES. Its calculations are based on the standard formulae advised by the BWEA. This gives an annual electricity production equivalent to consumption by 13,015 households. Even allowing for application of a higher capacity factor to the installed capacity of the turbines, obtained by applying recorded wind speed data for the site, the forecast emission savings in the ES are considered to be an overestimate. The 1994 factors used by the ES to calculate emission levels have subsequently been discarded by the BWEA in favour of lower values, reflecting improvements in conventional power station operating standards [Doc 36(2)]. Viewed in a UK context, the estimated emissions savings are small [Doc 36(2)].

8.3.22 The scale of the benefits which would accrue from the development must be weighed against the level of harm, in landscape and other terms, which would result. In this case the energy and greenhouse gas emission benefits are heavily outweighed by the harmful consequences of the scheme. The appellant has failed to show the need to select this particular site and so cannot show reason based on lack of alternatives why it should be developed in the face of the evidence that it would cause demonstrable harm to interests of acknowledged importance.

CUM (submitted in the form of written evidence by Mr T D Macdonnell)

8.3.23 The contribution to global greenhouse gas emissions savings is put forward by the appellant as a major benefit arising from the proposed scheme. However, global warming is an extremely complex subject; energy production by burning fossil fuels is only a minor source of greenhouse gas emissions into the atmosphere in the UK. US research suggests that climate change in recent decades has been caused by air pollution other than CO₂ greenhouse gases. Other experts believe that recent climate change is due to other solar and terrestrial climatic factors [Doc 42].

8.3.24 Moreover, the savings in relation to output from a conventional large power station, still less in relation to global greenhouse gas production levels from all different sources, is insignificant. The estimated 60,600Mw hours of electricity which the scheme would produce in 1 year equates to less than 1 day's production of a conventional power station such as Drax (85,000Mw hours). Although the Government's 2010 renewable energy target is cited as an urgent reason for permitting schemes such as Nant Carfan, this target is unrealistic and unobtainable, especially given the relatively low power output of wind turbines.

8.3.25 There are more effective ways of reducing fossil fuel use than by onshore wind power. Gas fired and nuclear power stations produce few greenhouse gas emissions; tidal, solar and hydroelectric power sources are alternatives; offshore wind power has better potential than onshore wind. New technologies offer great potential for future energy sources. Energy conservation and efficiency is a major area of potential savings [Doc 42].

8.3.26 In short, whilst CUM appreciates that there is a need to produce clean energy, there are better alternatives to land-based wind farms of the scale of this proposal. Energy conservation and efficiency could result in much more significant progress in greenhouse gas reduction. Moreover, scientific studies indicate that global warming is attributable to other factors besides pollutant emissions from energy production.

8.3.27 Given the foregoing factors, the relatively small contribution made by onshore wind power to non-fossil fuel energy production provides no justification for siting these highly-visible, alien, industrial-type structures in an area of high landscape quality, causing unacceptable adverse visual impact.

Other objectors

8.3.28 Mr R Coombs (The Lodge, Pandy) questions the scale of benefits which it is claimed would accrue from the proposed wind farm. Using BWEA figures and formulae, the Nant Carfan wind farm would, over its 25 year life, have an energy output equivalent to production by Drax power station in just 21 days. The CO₂ and other emissions

savings attributable to the scheme are therefore insignificant when placed in the context of reductions to existing power stations emission levels [Doc 53]. Mrs M Rees (Dol Einion, Talyllyn) repeats the view that the potential contribution of land-based wind farms to UK energy production and emission savings is insignificant. Such small benefits do not justify the harm to the local environment. (Also see paragraph 8.11.1.)

- 8.3.29 Mr W Marden (Yr Efail, Pandy) considers that the proposal, whilst purporting to address global environmental issues, would do so at the expense of harm to the environment of the locality and ignored the wishes of local people. Energy strategy should focus on greater energy efficiency in buildings, reduction in energy consumption and renewable energy technology applied on the local scale rather than large-scale wind farms. Although the development was claimed to be reversible, with restoration of the site at the end of its operational life, the concrete turbine bases would not be removed. These would decay over time, affecting the local ecological balance. Others, such as Mrs H Jones (Adwydeg, Llanbrynmair) point to the Cemmaes turbines as an example of how, once turbines are initially established on a particular site, they are frequently followed by proposals to add further turbines or replace with new ones, thus adding to or prolonging the impact of the original proposal.
- 8.3.30 Other objectors appearing at the Inquiry (including Mr E Jones, Blaen y Cwm, Pandy; Mrs M Rees, Dol Einion, Talyllyn; Mrs L Palshis, Fronlwyd Cottage, Bontdolgadfan; Mrs F Margolis, Barlings Barn, Llanbrynmair; Mrs G White, Pandy Llanbrynmair) consider that the wind farm would have negative effects on the local economy, by reducing the attractiveness of the area to holidaymakers, including in particular those wishing to take part in pony trekking). This would threaten the viability of holiday cottage and trekking businesses in the area and reduce spending in local shops and on local services. Although it is argued that wind farms can help to keep upland farms viable, in reality only a very few farms benefit. (Also see section 8.11.)

8.4. LANDSCAPE AND VISUAL AMENITY

CASE FOR THE APPELLANT

The main points were:

- 8.4.1 A landscape and visibility appraisal is contained in the ES [Doc. 1, Vol 3, Chap. 5 & App. D and Vol. 5, Chap. 2]. The assessment followed accepted practice and latest guidelines on landscape and visual impacts adapted to the situation at NC [Doc. 14]. ZVIs were prepared for NC and the other MC and CL proposals, together with Carno and Cemmaes wind farms [Plan L].
- 8.4.2 It should be noted that some of the terminology used in the ES is misplaced or incorrect. Tables were prepared for the inquiry which provide consistent terminology [Doc. 13]. The magnitude of effect on the landscape resource is categorised as high, medium, low or negligible. A matrix based on landscape quality and magnitude of effects is used to describe the significance of the effect upon the landscape in individual or a combination of the terms *major*, *moderate*, *low* and *negligible*. The magnitude of the effect on visual receptors uses the same terms between high and negligible, with receptors categorised as being of high, medium or low sensitivity. A

matrix based on the receptor sensitivity and the magnitude of effects was then used to show the significance of the visual effects ranging between *major* and *negligible*.

- 8.4.3 The ES assessment included changes arising in respect of 15 representative viewpoints [Plan M and Photo. 1]. These were chosen after discussions with Powys CC, CCW and the SNPA to provide representation of both wider landscape character as well as views generally in the direction of the appeal site. A summary of the landscape and visual effects at those viewpoints and the significance of change has been submitted [Doc. 15]. Following the re-location of turbine 10 a further set of figures for the same 15 viewpoints was produced, together with information and visualisations from 8 properties in the locality [Doc. 19 and Photo. 2]. Following the comments of the SNPA, wireframes for 3 locations in the National Park were prepared [Photo. 3, Figs. 1 – 3], and also additional wireframes for the Pandy locality [Photo. 3, Figs 4 – 8].
- 8.4.4 The site is bounded to the south, east and west by steep slopes dropping to valleys where there are some dwellings linked by minor roads, together with the hamlet of Pandy and the village of Llanbrynmair to the south [Plan P]. As the turbines are set on the plateau ridge this visually insulates much of the valley landscapes in the wider setting from the proposal. Much of the landscape study area is upland [Plan H] with a relatively simple appearance of moorland or pasture. There are also large areas of upland coniferous forest and broadleaf woodlands in the lower valleys. The quality of the landscape varies between medium and high, with the interest, colour and texture of the uplands influenced by weather and seasonal changes. A notable local element is the Cemmaes wind farm which has created its own landscape sub-type of upland plateau with wind farm.
- 8.4.5 During construction of the wind farm there would be little for the public to see, as there are no rights of way on the site or nearby and the only road access would be along the forestry tracks from the trunk road to the north. It follows that there would be no significant landscape or visual effects at the construction stage.
- 8.4.6 During its operational life the wind farm would affect a wide area. However, significant effects would be more localised and chiefly relate to the upland plateau and narrow valleys below generally within 3 or 4km. Within the wind farm site itself the landscape would inevitably be changed from plateau to a wind farm landscape, as the turbines would be the dominant feature. Perhaps no more than 500m from the turbines they would have less dominance and the moorland fabric would reassert itself to provide a new local sub-type of upland plateau with wind farm. Of course the wind farm would not be a new element, given the presence of the existing Cemmaes wind farm.
- 8.4.7 The result would be first, very localised changes to the site and its immediate setting and second, a reinforcement and extension of the perception of the already established wind farm landscape element in the wider area currently manifested at Cemmaes and Carno. The other landscape types in the area would be unaffected directly. There would be indirect effects on the upland peaks to the north-east, but the NC scheme would be taking place in a sector already associated with the Cemmaes turbines and would not materially affect the character of Snowdonia or its enjoyment.

- 8.4.8 With respect to visual amenity, the ZVIs indicate that the potential visibility of the wind farm is mainly from the more remote upland areas [Plan W]. NC could not be viewed from most of the roads in the study area. Only about 1.3km of the A458 would be affected, a similar length of the A487 and some 6 – 8km of the A470. Even then, it is only the blades of a few turbines which might be seen intermittently and the change would be barely noticeable. The B4518 would be affected roughly from VP13 near Pennant to VP2 near Llanbryn-mair [Photo. 1, Figs. 11.2 and 11.13]. Travelling north on this road parts of the wind farm would be seen along stretches not screened by vegetation or embankment. The site would also be seen from the minor Pandy road north of Llanbryn-mair, but the winding nature of the road and topography would do much to restrict views of the turbines.
- 8.4.9 Views from the Dovey Valley and valley sides would be virtually unaffected and any NC blade tips would fall behind the Cem-maes wind farm. There are no local footpaths climbing to the site and none within it, but there are some within 3 – 4km where views would increase with ascent. There would be an effect of *moderate/major* or between *moderate/major* and *major* significance. An example is the path past Nant Hir up to Mynydd y Cem-maes where more of the NC turbines would appear in view going up the climb [Photo. 1, Fig. 11.4]. From the Cem-maes plateau to the west (including the informal Cambrian Way) and the south-west, the change would be of *moderate/major* significance [Photo. 2, Fig 1]. Such evidence as there is about use of rights of way suggests that the area around the wind farm is not a major walking area.
- 8.4.10 From the north, visibility is limited by the forestry areas and the topography, other than from the common land immediately beyond the site where views out of it towards the south would be affected. Further north the limit of significant effect would occur at about 4.5km [Photo. 2, Fig 14]. From the east moving round to the south, including Glyndwr's Way, the change where visible would be of between *moderate/major* and *major* significance [Photo. 2, Figs. 1 and 3]. It is considered that views from rights of way at distance beyond 3.5km – 4.5km for high sensitivity receptors would not be significantly affected, since the turbines are elements which are not alien or uncommon in the area, would be appropriate to their context, and would usually appear as well-balanced and controlled, with a high degree of visual permeability.
- 8.4.11 The potential effects on residential amenity are limited in an area of sparse population and small settlements [Plan V]. The village of Llanbryn-mair lies some 4km south of the appeal site and views from there would be restricted by buildings and vegetation. However, it is accepted that some parts of the village would have clear views of the wind farm, for example near Bryn Coch on the southern edge of the settlement [Photo. 2, Fig. 2]. The significance of the visual effect on the village would be between *moderate* and *moderate/major* but, whilst prominent, the wind farm would not be a dominant feature in the view of well spaced linear turbine elements on the ridge.
- 8.4.12 For settlements further afield the effect would be less. At some 6.4km to the south a few north facing dwellings would possibly see the upper parts of turbines from the locality of Bontdolgadfan, with a visual effect of similar significance to that at Llanbryn-mair. At Carno some 11km away, there could be some limited distant views of the site, for example from near the railway bridge [Photo. 1, Fig 11.7].

- 8.4.13 Other distant views could be obtained from the southern slopes of the Afon Carno at 12 – 14km, and within the Twymyn to the west and south of Bontdolgadfan. However, the wind farm would be a small to medium scale feature in a modified landscape. At the important viewpoints of Ffrwd Fawr and the Wynford Vaughan Thomas Memorial [Photo. 1, Figs. 11.8 and 11.11] the site would be seen on a clear day, but be small in scale and consistent with the character of its distant, elevated and exposed location.
- 8.4.14 It may be that significant change would be experienced in a local context where open views of more than just a small part of the wind farm could be experienced within a distance of up to 3.5km – 4.5km of the nearest turbines, but this is not easily found. A few properties along the Nant Carfan valley, Cwm Tafolog and some areas to the south-east might be affected, such as Nant Hir, Dol Fawr, Ty Newydd, Hendre Fach, Clegyrnant and Cwm Pen Llydan [Photo. 2, Figs. 4, 16 – 18, 22 and Doc. 50(3)]. Parts of the turbines might be seen in a distinct but complementary part of the landscape. Where visible, the turbines would be seen to sit lightly upon the ridge without dominating it or overwhelming the viewer's perceptions. They would be consistent with the open, exposed character of the upland where wind farms are an existing characteristic.
- 8.4.15 Other properties in the area, such as Blaen Tafolog, Blaen-y-Cwm, Nant Carfan and the lower floor of Rhyd-y-Meirch would not be likely to be affected [Photo. 2, Figs. 19 – 21 and 23]. Some others, such as Ty Newydd and Hendre Fach, might experience a small change in the view but it would not be significant. It is submitted that even with the few properties where significant effects would arise, there would not be an unacceptable impact on residential amenity.
- 8.4.16 It is not considered the wind farm would directly affect designated areas [Plan B]. In the case of the objection of SNPA it was initially considered in the ES and its Addendum [Doc. 1, Vol. 5, sect. 2.9]. No specific concerns have been expressed about the National Park by either CCW or PCC.
- 8.4.17 The indirect effect on Snowdonia National Park, apart from its southern fringe, would be no greater than *moderate* for landscape character and between *moderate* and *moderate/major* for visual amenity. In the southern fringes the effects looking outwards from the National Park would be significant. Examples are at Cwm Terwyn, Foel Dugoed and Foel Dinas [Photo. 1, Figs. 11.9, 11.14, and 11.15]. The ZVIs show that visibility of NC would mainly be limited to upland peaks within the National Park, with some views from small areas of plateaux, plateau margins, scarps and narrow valleys near the boundary of the Park. SNPA have referred to 3 other upland areas within the Park in the report to their Planning Committee and wireframes have been produced for these [Photo. 3, Figs. 1 – 3]. It is not considered the change would be significant, given the distance involved and the very small scale of the turbines seen largely against a panoramic backdrop of land rather than sky. The wind farm would change such views in an acceptable way, and would not affect the views into the Park or its features.
- 8.4.18 It follows that the proposal would not affect the landscape character of the Park, nor be detrimental to enjoyment of its scenic qualities, nor subvert the purposes of its designation. It is important to note that the appeal proposal would have no direct effect on the Park and that relatively few publicly accessible views would be affected.

- 8.4.19 The edge of the Cambrian Mountains ESA is some 4km away from the appeal site. The introduction of the wind farm in a different part of the landscape would not compromise its conservation objectives or affect its character or amenity.
- 8.4.20 There would be significant effects on landscape character and views in parts of the Western Uplands SLA. These would generally be limited to the immediate locality of the appeal site, the local setting on the surrounding plateau, parts of Mynydd y Cemmaes, and close private views from the north of the site. NC would be seen with or in views influenced by existing wind farms and, whilst extending the presence of such features, NC would create a comfortable, loosely clustered and balanced feature. The significant changes arising would not be harmful to the overall character, quality or amenity of the SLA. Also, they would not be detrimental to its special features since the area of the site is not as wild or remote as other plateau areas, its views are conditioned by forestry, and its local setting is not a particularly fine example of the plateau type. It has no upland lakes or other water features and no scenic routes or other important viewpoints. The proposal could, therefore, be satisfactorily integrated into the landscape.
- 8.4.21 The MLA deals with the appropriateness of new development in different types of landscape. On plateaux, it does not preclude wind farms subject to great care in siting them [Doc. 2, CD6, para. 8.72]. Also, the appeal site does not fall within any of the areas such as the Berwyns, Plynlimon or Garreg-hir which are stated not to be suitable.
- 8.4.22 It is noted that Powys CC have raised an objection to the proposal on visual grounds. However, the Shire Planning officer in his report does not disagree with the ES assessment. Taking account of the issues he bore in mind in paragraph 7.7 of his report, he recommended that no objection was raised in relation to the visual impact on the immediate locality [Doc. 2, CD3]. It is accepted that the Council carefully considered the officers' report and they only diverged from the recommendations in one respect – that of the local impact on Pandy, which is a small hamlet of around 6 dwellings with a further 6 or so scattered around the locality.
- 8.4.23 Pandy is some 2.5km south of the nearest turbine and 4.4km from the farthest. It lies in a sheltered valley setting below Mynydd Rhiw-Saeson. The hamlet itself is over 320m below the highest parts of the appeal site and most of the dwellings face east-west and not north towards the wind farm site. The Council are correct in asserting there would be visual effects arising in the locality [Plan V and Photo. 2], but it is believed that this would be less than they fear and not unacceptable. Their own Landscape Consultant had visited a viewpoint close to Pandy at Bryn Coch and did not consider the visual effect from there would be significant.
- 8.4.24 From the north of the hamlet, no hubs or blade tips would be seen, from its core and some way to the south and east only a few blade tips would be visible and the effect would not be significant. It is only from the more elevated land to the south-west that hubs and more blade tips would be seen, for example at Bryn-aire-uchaf [Photo. 3, Fig. 8] almost 3km away from the nearest turbine. From there the visual change for high sensitivity viewers is assessed as being *medium/low* tending to *medium*. This would be of between *moderate* and *moderate/major*, possibly tending to *major* significance. However, for those properties in the hamlet and locally to the south, east and north the visual effects would not be significant.

- 8.4.25 The landscape studies show that in the local context the changes arising from the wind farm would be significant both in respect of landscape character and visual amenity. These elements would be subsumed by the wind farm itself up to a distance of 500m or so, but the overriding character of the broader local landscape would still remain and the landscape is already influenced by existing turbines. The NC turbines would extend and reinforce this characteristic without overwhelming it. The turbines would be consistent with and become an integral part of the landscape reflecting and responding to its exposed, windswept character.
- 8.4.26 It must be remembered that just because something can be seen this does not mean it must inevitably be regarded as a detractor with and having an adverse effect on the landscape experience. Indeed many studies have demonstrated the acceptability of wind farms to the public generally and they have been located within or close to landscapes of recognised high quality.
- 8.4.27 Also, it must not be forgotten that the life of the wind farm is limited and its effects are reversible at the decommissioning stage. This must be seen to reduce the weight which can be given to landscape issues and provides a choice for the future of recovering the landscape fabric or continuing with a modified landscape incorporating clean, sustainable energy generation.
- 8.4.28 With regard to the objections of CCW, their overriding concern is that of visual intrusion and they do not indicate an objection with respect to landscape character. Although they consider that turbines are a detractor, they also regard the coniferous plantations as a major detractor. If the forests and wind turbines already existing in the area are taken into account, as this suggests, then it could appear that the landscape around NC should be judged as less rather than more 'sensitive' to development. CCW claim that the plateaux around the NC site provide all-round views, but in fact such views already contain forests and turbines. Indeed at the consultation stage CCW stated that viewpoints could no longer be regarded as important when dominated in most arcs of view by those features [Doc. 17, page 6]. CCW say that Glyndwr's Way would suffer from the proposal, but they promoted the route with a leaflet showing a turbine and the new revised route around Llanbrynmair increases the opportunity to view turbines [Doc. 20, Apps. 1 and 2].
- 8.4.29 CCW also claim that their visual impact assessment document [Doc. 23(3) and Plan Y] demonstrates how existing plateaux have been affected by wind farms and forestry, but it does not as it relates only to NC. The extent to which Cemmaes B and Carno wind farms visually influence the area can be seen in the ES [Doc. 1, Vol. 5, Fig. 3]. As an aside, it is interesting to note that one of CUM's main witnesses could not recall seeing the Cemmaes wind farm when visiting the area prior to purchase of her property. The same CCW document provides data on roads allegedly affected by views of turbines, but there are many screening elements alongside the roads which will reduce the already limited lengths from which turbines might be visible. The fact is that NC would exert only a very limited degree of visual influence over the lower landscape of roads and settlements.
- 8.4.30 On the concern of CCW about common land [Plan Y, Fig. 9] and PSP policy EC7, it is accepted that the area just to the north of the site would be significantly affected, but its views towards the National Park will remain. The common land at Waun Carno, to the west of Carno and at Mynydd-y-Gribin are between 10 – 15km away and unlikely to be affected to any significant extent. Similarly, at Twmpath Melyn

only a small area would be affected and at Pencoed there would only be limited visibility of some hub and blade tips.

- 8.4.31 CCW have referred to the increased rights of access that will occur under the CROW Act 2000, but the extent and timing of this can only be a matter of conjecture and is some years away. In any event, views out from the plateau will remain unaffected, as is the case on the Cemmaes ridge, and people who do not appreciate turbines will be able to roam other areas of plateau landscape which will become available.
- 8.4.32 In the case of CUM, they suggest that the sensitivity of receptors has been undermined and the landscape and local area downgraded to help justify the wind farm. In fact, the ES acknowledges that those who feel negative towards the scheme would probably feel their amenity was adversely affected, but the highest sensitivity level was always assumed when judgements were made.
- 8.4.33 On landscape quality, it is contended that it is fair to assume from the CCW evidence that the plateau is not of the highest quality and views are affected by forestry and turbines. Also, the Shire Planning Officer's view was that the development was acceptable in terms of its visual and landscape effects. CUM are entitled to their opinions about the subjectivity of evidence on behalf of the appellant, but many people find wind farms acceptable, do not see them as intrusive and even consider they enhance their setting [Doc. 20, Apps. 3 and 5]. There is also a tendency to assume a proprietary interest in the landscape. On the concern that the effects of the wind farm are being toned down because of its temporary nature, this is not a correct interpretation. The point is that this is one of many factors which must be taken into account among all the other material considerations to reach a balanced outcome.
- 8.4.34 The comments on CPRW are as follows. First, they present a great deal of information on wind farm development in the UK, including some close to nationally designated areas. Whatever the reasons for this evidence it serves to show that many people consider such development to be acceptable in scenic areas. The right of CPRW to promote a version of the Sinclair-Thomas Matrix is not disputed, but it carries no authoritative weight and is a person's opinion which seems to be pre-conditioned to adopt a negative stance that, as a matter of course, wind turbines are harmful to landscape and visual amenity. It is suggested the methodology used in the ES is too crude with a simple approach to magnitude rankings, but intermediate steps were used to expand the range from 3 or 4 to 7 and there is ample allowance for a continuum of effect. It is implied by CPRW that the ES approach is wrong, whereas it is merely different. Also the viewpoint assessment was undertaken assuming the receptor, in the form of a person not a path or road, was of the highest sensitivity. In short, the CPRW evidence is largely confined to criticism only, without producing any assessment of its own on landscape and visual effects.
- 8.4.35 Wind energy proposals must be assessed against PSP policy EC20(E) which seeks to avoid any unacceptable adverse effects, with regard also to PSP policy EC3 and MLP policy ENV3. The appellants have submitted an assessment which shows there would be no such effects.
- 8.4.36 The designation of the SLA does not preclude wind farms. MLP policy ENV2 provides for the scale and location of development to accord with opportunities identified in the MLA. The plateau landscape is 1 of only 2 types where wind farms

are quoted as a development opportunity and the appeal site is not within any of the locations specified as unlikely to be appropriate in such areas.

- 8.4.37 Certain ‘special features’ of the plateau areas should be safeguarded under policy ENV2. The important issue is whether the wind farm would have a significant adverse effect on them. It is submitted it would not and that the features would be safeguarded. In respect of MLP policy ENV3 there has been some attempt by CCW to distinguish the tests in PSP policy EC3, but the Local Plan does not find it necessary to require development to be both appropriate and sensitive. Furthermore, the planning witness for CCW accepted that if a wind farm was not unacceptably harmful to the character or appearance of the SLA, then there would be no conflict with policy ENV3 or PSP policy E20(E).
- 8.4.38 In any event, the case for the appellant is that the wind farm would be both appropriate and sensitive to the SLA. It is also reasonable to conclude that the Local Planning Authority accept that case and that the development can be integrated into the landscape, as they have raised no objection on the basis of any breach of PSP policy EC3 or MLP policy ENV3.
- 8.4.39 In addition, policy ENV3 allows for an exception in the case of a wind farm. In the extract from the Local Plan Inspector’s report submitted by CCW [Doc. 34] relating to that policy and the SLA he stated that he was not convinced that further wind energy schemes would “*inevitably be unacceptably harmful to the character and appearance of the designated area*”. This can be contrasted with the approach of CCW, CPRW and CUM who have made it clear that they consider any wind farm within the SLA would inevitably be harmful. Although objectors see turbines as detractors, the existing SLA landscape already contains them. Witnesses for CCW have described viewpoint 3, from where Cemmaes wind farm can be seen [Photo. 1, Fig 11.3], as a “*harmonious rural landscape*” and the existing wind farms as well located, designed and sited.
- 8.4.40 The broad methodology of landscape and visual assessment undertaken for the appellant has not been criticised, apart from certain CPRW comments, although there may have been disagreement with certain judgements. There was some criticism of descriptors of the landscape character but their assessment is set out in the ES [Doc. 1, Vol. 3, App. D3]. CCW have used descriptors in the Cambrian Mountain Landscape Study [Doc. 21], but they are not really dissimilar to those of the appellant’s witness in a landscape influenced by the weather and seasonal changes. CCW suggested that the NC plateau site is remote and wild, but then acknowledged that nearby wind farms, such as Cemmaes, have changed such perceptions. The site is also not the only area of open plateau as CCW suggest. The Pencoed area, other central areas and land further east, such as Mynydd Waun Fawr, remain open. Overall, there is no reason to resist the NC proposal on landscape and amenity grounds.
- 8.4.41 A final matter concerns the requirement for the NC wind farm to connect to the electricity grid network. A possible corridor for a overhead line and sub-station has been identified [Doc. 1, Vol. 5, section 8 and Fig. 5]. The line would require consent under the Electricity Act and any proposal must have regard to preserving natural beauty and to mitigate any adverse effects. It is Powergen’s view that it would be possible to locate the line and sub-station without an unacceptable effect on the countryside.

CASE FOR POWYS C C

The main points were:

- 8.4.42 The planning application M2000/0220 which is the subject of appeal followed the earlier submission of a near identical proposal and environmental statement. An addendum to the ES submitted with the earlier proposal was forwarded on 14 March 2000 and the statutory 16 week period for a decision expired on 4 July 2000. On that date there were still outstanding matters concerning access, wildlife and noise which remained unresolved, which prevented the Council from taking a decision. After that date the application was made the subject of a holding direction by the National Assembly and eventually the appeal was lodged against its non-determination.
- 8.4.43 The Council considered what view to express at the appeal inquiry about the application at their Planning Committee meeting on 1 December 2000. Prior to this Councillors undertook a tour of the area on 28 November 2000, which included the B4518 Staylitttle – Llanbrynmair road and then north from the latter settlement through the Pandy locality. At the full meeting on 1 December a report on the application by the Shire Planning Officer was considered [Docs. 2/CD3 and 4(i)A]. The Shire Planning Officer made 3 recommendations, including one that in relation to visual impact upon the immediate locality the Committee should raise no objection.
- 8.4.44 After consideration of the recommendations the Committee resolved to make various representations to the public inquiry, as ratified at a meeting on 5 January 2001 [Docs. 4(i)B, 4(ii) and 4(iii)], which included the following relating to visual issues:
- “That contrary to the recommendation of the Shire Planning Officer an objection be lodged against the proposed wind farm on the grounds that it will have an unacceptable visual impact upon the immediate locality of the village hamlet of Pandy.”*
- The Committee reached their conclusion after much discussion, the context of the site visit, consideration of material in the ES, and consideration of representations received especially from those resident in the Pandy area.
- 8.4.45 Having regard to the advice in TAN8 that a completely objective assessment of the landscape qualities of an area and the impact of development on it is not possible [Doc. 2/CD9, para. A45], it is contended that Councillors were entitled to form an opinion which differed from the recommendation before them. Clearly there is an impact on the Pandy area and the difference between the recommendation and the resolution is one of opinion as to the acceptability or otherwise of that impact. The foregoing submission was broadly accepted on behalf of the appellant in cross-examination, and also that ‘unacceptability’ in terms of visual impact is essentially a subjective process.
- 8.4.46 There has been some debate over what constituted the “*immediate locality*” of Pandy in terms of the Planning Committee objection. As is often the case in the context of settlements in rural mid-Wales there is no recognised defined physical boundary, but Pandy is considered to cover quite a wide geographical area including those dwellings on the Council’s highlighted list of local objectors [Doc. 5]. Some of these appeared at the inquiry, including the owners of Blaentafalog, Blaen-y-Cwm and Clegyrnant, which illustrates that Pandy extends well beyond its core around Pandy-

rhiw-Saeson. It is also known that Council members referred to ZVIs and visualisations during their site visit to the area. These suggest that only a few blade tips would be visible from the core of Pandy and some way south and east, according to the appellant's landscape witness. On that basis it is submitted that the Committee must have had regard to a considerably greater extent of land than just the centre of Pandy and its immediate environs, otherwise their resolution to object would not have made sense. This is supported by evidence that the Committee took account of certain viewpoints, such as those from Nant Hir and Clegyrnant [Photo. 1, Fig. 11.4 and Photo. 2, Fig. 22].

- 8.4.47 There were comments at the inquiry about an apparent inconsistency of the Council's position in deciding to raise the objection to NC on the basis of local visual impact, whilst at the same time agreeing with their Consultants that there was no unacceptable cumulative visual effect arising from NC alone. It is submitted that these 2 resolutions are not inconsistent. The resolution concerned with NC alone related to local views in one broad sector looking towards NC, namely from the Pandy Valley and Afon Cwm/Clegyrnant valley. Those vistas are largely of the NC site alone, although it is admitted Cemmaes would also be seen from some parts of that area. On the other hand the 'cumulative' assessment included existing and permitted wind farms and many viewpoints away from the immediate locality of Pandy. The Council's landscape witness at the cumulative inquiry session confirmed that her study did not take account of viewpoints which could be reasonably said to be in that 'immediate locality'.

CASES FOR THE OBJECTORS

The main points were:

CCW

- 8.4.48 The upland plateaux character setting of the NC site can be divided into 4 areas arising from the description in the ES of this landscape character type, numbered 2-1 to 2-4 [Plan H]. 2-1 is the northern plateau extending into the Berwyn Mountains SLA and the fringe of the National Park; 2-2 is the central plateau largely dominated by coniferous forest, with the notable exception of the ridge containing the proposed NC site; Cemmaes wind farm occupies most of the 2-3 narrow western plateau; and Carno wind farm on Trannon Moor dominates much of the 2-4 southern plateau. The plateaux provide an opportunity to experience and appreciate views of an all round expansiveness few other areas in Wales afford. To the north-west the major mountain blocks of Snowdonia can be seen, with the Berwyn Mountains to the north and north-east. The hills of the border Marches provide an eastern horizon; the Kerry and north Radnor hills lie to the south; and Plynlimon forms the distant south-western vista. Much of the area can be enjoyed from numerous rights of way and the CROW Act 2000 will increase the opportunities for recreation and access in such areas. There is also a block of common land to the north of the site and other commons within the site's ZVI [Plan N].
- 8.4.49 The experience of existing wind farms shows that large, vertical turbines are difficult to integrate into a plateaux landscape. In order to assess the visual impact of NC a report has been prepared for CCW by the Macauley Land Use Institute [Doc. 23(3) and Plan Y]. ZVIs at 7, 10 and 15km were prepared [Plan Y, Figs. 1 - 7] and a

further ZVI for 20km was undertaken to illustrate the likelihood of visibility from the top of Cadair Idris [Plan Y, App. 1.3]. The results of the assessment of the visibility within each viewing radius at 4 points on the turbine structure [Doc. 23(3), Table 3] show the top of the rotor arc may be seen from an area of 197.2km at 15km, 107.3km at 10km and 65.0km at 7km. For all 3 radii distances the entire structure of at least 1 turbine may be visible from around 47% or 48% of the land area at which the top of the rotor arc may be seen.

- 8.4.50 At 15km radius of view turbines may be seen at the top of the rotor arc from about 25.4% of the total land area, increasing to 34.6% within a 7km radius where visibility would be clearer and the impact greater [Doc. 23(3), Table 4]. The ZVIs at 15km show views of turbines may be obtained from almost all directions [Plan Y, Figs. 2 – 5]. The most extensive areas of contiguous views are quite close to NC within about 7km, including Mynydd y Cemmaes to the west, hills to the east such as Esgair y Llyn, and land to the south including Llanbrynmair and the B4518 road. Views further away up to about 15km include the west facing hillslopes to the north-east of Cwm Llwyd and Waun Garno south of Carno. When moving through the landscape within the 15km radius from the south-west to west to north-west, the shape of the topography suggests that there will be unconnected patches of views changing from seeing no turbines at all to seeing most of them. There will be no views of turbines from most settlements in the area, apart from Llanbrynmair and some land in the vicinity of Carno.
- 8.4.51 Land from which most of the turbine structures may be visible within 15km [Plan Y, Fig. 5] includes the Cemmaes ridge and land around the site itself; land to the south-west of Llanbrynmair towards the Dylife mountain road and its viewpoints; and high ground to the north-west in the National Park above Dinas Mawddwy and Llanymawddy.
- 8.4.52 An assessment of the extent which the NC turbines would be visible from open land over 300m AOD and from common land [Plan Y, Fig. 8] has been undertaken. The land cover within 15km radius of NC is dominated by open vegetation (69.5%) and over 90% of the common land is open vegetation [Doc. 23(3), Table 5]. Views of the top of the rotor arc of at least 1 turbine may be obtained from 32.2% (133.8km²) of the land over 300m, excluding common, of which 69% is open vegetation. In total, the views of the turbines would comprise 28.6% of the land over 300m that has not been afforested [Doc. 23(3), Table 6].
- 8.4.53 A study of land over 300m within 15km from which the top of the rotor arc may be visible [Plan Y, Fig. 9] shows that there are several forestry areas where the top of the blades may be seen, including that around Llyn Coch-hwyad, the Dyfnant Forest west of Pont Llogel, parts of the Dyfi Forest and an area to the north-west of Rhyd. In respect of common land about 32.7% or 8.9km² of that above 300m is open vegetation and would have views of the top of the rotor arc, of which the area to the north of the appeal site would be most significantly affected [Doc. 23(3), Table 7]. Other common land which could have extensive views of the NC site are parts of Waun Garno, land to the west of Carno, Twmpath Melyn, Pencoed Common and Mynydd y Gribin.
- 8.4.54 With regard to the visibility of individual turbines [Doc. 23(3), Table 8] in terms of land area from which the top of the rotor arc can be seen, number 16 has the largest area, followed by 3, 4 and 12. Turbine 3 also has the largest area from which the

whole structure can be seen. However, clusters of several individual turbines will affect similar areas. The analysis suggests that turbine 3 is the most visible seen as an entire structure, but turbine 15 is the only one which is likely to be seen in its entirety from the B4158 south of Llanbrynmair and viewpoints on the Dylife mountain road [Plan Y, Fig. 10]. There seems to be a case to re-site that turbine.

- 8.4.55 Only some 7.7% of the 76.4km of main roads in the area would have views of at least one of the turbines [Doc. 23(3), Table 9], and some 12.6% of the 279.3km of Class B and minor roads [Doc. 23(3), Table 10]. The largest concentration of views are on main roads on the A470 in Llanbrynmair and near Carno, and near the A458/Cwm Tafalog junction; along the B4518, the Dylife mountain road, along the valley through Pandy, the road through the Cwm Llwyd wind farm site, around Llangadfan, the road through the Dyfi Forest and near Bwlch-y-Groes [Plan Y, Fig. 11].
- 8.4.56 The area around NC has already been adversely affected by wind farms and afforestation which detract from the extensive views, scenic routes and open plateau landscape. The foregoing assessment demonstrates that the impact of another wind farm at NC would be unacceptable for the SLA and common land. There are already opportunities for public access to the upland areas and this will be expanded by the CROW Act 2000. The route of the Glyndwr's Way National Trail runs close to the site [Plan O and Doc. 33] and offers experience of the character and scenic quality of wild and open upland landscapes, in contrast to that available on the Offa's Dyke and Pembrokeshire Coast paths. The clear views of the NC turbines which would be obtained from the National Trail would demean that experience and draw the eye to a discordant industrial feature in an otherwise harmonious rural scene [Photo. 2, Figs. 1 and 3].
- 8.4.57 It is submitted that its adverse visual impact means that the NC proposal does not comply with the policies in the development plan or those of CCW. With regard to CCW's own wind farm policies first adopted in 1992 and revised in 1999, the proposal is resisted under policy 5 of the latter document which refers to the special features of SLAs [Docs. 23(1) and (2)]. Policy 5 is flexible and makes it clear CCW will only object to developments where they harm the features and qualities of a SLA. This is similar to the 'unacceptably detrimental' test in PSP policies EC3 and EC20 and is compatible with MLP policy ENV3. CCW policy 5 is also in line with national guidance in PPW.
- 8.4.58 Turning to the development plan policies, the adverse visual impact of the proposal would be in conflict with PSP policy EC3 which applies to both the SLA and common land; and policy EC7 which is not limited to development within or adjacent to common land, but to any proposal which adversely affects such areas. In terms of PSP policy EC20 it is considered that the landscape issues outweigh the need for renewable energy development. Policy ENV3 of the MLP allows for a possible exception in respect of a wind farm in the context of PSP policy EC3, but it does not remove the requirement for such development to be sensitive to landscape qualities and to integrate into the landscape. The appellant has implied that other policies must be read in the light of policy ENV3, but this is rejected as entirely contrary to the principles of interpretation. In fact, the benefit given by policy ENV3 is specifically subject to compliance with other Local Plan policies and it does not override PSP policy EC3. CCW also submit that the SLA designation in the development plan meets the criteria set out in PGW for a sound basis and formal assessment [Doc. 2, CD7, para. 5.3.5], as this was contained in the MLA [Doc. 2, CD6]. It is strongly

asserted that the development plan policies on the SLA are appropriate policies in terms of PGW and must be applied to the NC scheme.

- 8.4.59 In assessing the quality of the landscape it has already been noted that the MLA is the basic authority and it underpins the environmental policies in the MLP. The section on plateaux is particularly useful [Doc. 2, CD6, paras. 8.67 – 8.75]. The designation of the Western Uplands as a SLA and the inclusion of common land in PSP policies EC3 and EC7 confirms the special qualities of the area and the PSP emphasises this point, even within a county where landscape quality is uniformly high [Doc. 2, CD4, paras. 4.40 and 4.41]. The appellant agrees about the high quality of the plateau landscape, but downgrades the immediate area of the appeal site. It is CCWs evidence that the area of the development is part of the last significant area of open moorland within the central plateau 2-2 [Plan H]. It is all the more valuable because of the proximity of detractors such as Cemmaes wind farm and the conifer plantations.
- 8.4.60 The impact of the high, vertical turbines on the landscape will be bound to detract from the open landscape and its vistas. Any suggestion that it might complement the landscape is rejected. The turbines would not reinforce the horizontal emphasis of the landscape and when seen with blades turning would appear as a solid mass quite out of harmony with the surroundings. The suggestion for the appellant that from a distance of around 500m the wind farm would cease to be a dominant aspect of the landscape is unacceptable. The turbines might be overwhelming up to the distance, but at much further distances they will still remain the dominant feature in the open area. Given the layout of the turbines and the quite short distances from them to the plateau edge, it is clear that the Nant Carfan plateau area would inevitably become a ‘wind farm landscape.’

SNPA

- 8.4.61 The written objection by Snowdonia National Park Authority is the result of consideration of the NC proposal by the SNPA Planning Committee on 10 November 1999, when the conclusions and recommendation of the Chief Planning Officer were accepted. The report was the subject of some correspondence with the appellant [Doc. 17, pages 11 – 18]. The text of the adopted Eryri Local Plan suggests that the SNPA would not object to renewable energy projects outside the National Park where they create no significant harm to the visual amenity of the Park. The report states that from the ES information provided the impact on the National Park would be in its south-east sector from Bwlch-y-Groes, the Aran ridge, through the Maesglase/Waun Oer massif and to Cadair Idris. It then refers to the 3 viewpoints set within the Park, at Foel Dugoed and Foel Dinas where turbines would be on the skyline; and at Pen Yr Allt Uchaf where the turbines would be seen below the skyline [Photo. 1, Figs. 11.9, 11.14 and 11.15]. It then mentions other higher locations further away where the turbines would be seen below the skyline.
- 8.4.62 The report’s conclusions were that when the NC proposal was taken with other approved and existing wind farms the cumulative effect would be serious. The report then goes on to say that the insertion of such large vertical elements at NC would significantly alter the horizontal character of the plateaux landscape, especially where they are seen on the skyline. The effect of the proposal and particularly its cumulative effect would be seriously detrimental to the enjoyment of users in several upland areas in the south-east of the National Park.

- 8.4.63 It was later clarified to the appellant that the upland areas referred to were Aran Fawddwy, Waun Oer and Cadair Idris which are between 13km and 20km away from the appeal site. The report also confirms that the views into the Park do not justify an objection and that it is the views out from the Park which are the main concern of the SNPA.

CPRW

- 8.4.64 Over the last 10 years 61 wind farms and single turbine schemes have been erected in the UK, amounting to 860 turbines. 15 of the schemes have been in Wales [Doc. 38(A)]. Turbine sizes on wind farms have increased from around 45m to 55m or more. The NC turbines would be bigger than any yet constructed on a Welsh wind farm and comparison with the Cemmaes wind farm with an overall tip height of 41.5m shows the NC turbines would be 83% taller. The visual impact of the NC turbines would be increased by the blade swept area combined with their height which would give a 'moving mass area' of 45,239m² which would be more than double that of the Cemmaes wind farm.
- 8.4.65 It is considered that the size of the NC turbines is not fully recognised in current guidance on landscape and visual assessments. CPRW have undertaken fieldwork on visibility in relation to distance for turbines of 53 – 57m and for 72m, using a method called the 'Sinclair-Thomas Matrix' [Doc. 38(B)]. This sets out the potential impact of turbines of 72m overall height at a range of distances categorised as A – I. Bands A and B (0 – 6km) would generate impacts which could independently be considered significantly adverse; bands C and D (6 – 14km) would be considered significantly adverse if they augmented representative views in bands A and B, or were especially numerous or sensitive. Views from bands E to G would become progressively insignificant unless they were especially numerous or represented significant views of other existing or permitted wind farms.
- 8.4.66 ZVIs should be available up to the limit of band F (18 – 23km) where the turbines are becoming indistinct. Accordingly, it is accepted that the use of 20km for some ZVIs in the ES are realistic, although 25km would have been preferable in terms of cumulative impact analysis. The ZVIs show that within 3km of the appeal site the majority of turbines will be visible at hub height and more over the much of the plateaux. There is a similar, but less complete, effect extending up to 15km. The Pandy valley area to the south of the site and the extension on the same axis of the Twymyn Valley beyond Llanbrynmair allows for extensive valley and hillside views. Within the distance bands A and B the turbines would be dominant and views in bands C – D up to 14km would show turbines clearly and contribute towards the aggregate visual impact. At further distances in bands D, E and F there is a scattering of visibility, mainly on the plateaux surfaces.
- 8.4.67 The appellant expresses the degree and significance of visual impact by representative viewpoints and a factor analysis. A crude ranking method is used by assessing magnitude of change with landscape quality and receptor sensitivity, with photographs of viewpoints. CPRW have reservations about the basis, scope and criteria of this approach. They would prefer a more narrowly defined range of magnitude rankings with intermediate levels between. Thus the 4 levels used in the ES between *high* and *negligible* should be 7 levels, with an *exceptional* level at the top and intermediate levels between *high* and *medium* and *medium* and *low*. A

similar approach should apply to landscape quality rankings where an *outstanding* level and intermediate levels of *high/medium* and *medium/low* should be added.

- 8.4.68 In the case of the sensitivity of receptors there are also difficulties with the approach used. CPRW suggest that users of nationally promoted recreation routes or of key landscape viewpoints/attractions should be ranked as *exceptional*; residents generally, but especially those with views from their property, and ‘extensive’ recreation users on tourist or scenic routes or engaged in outdoor country activities should be classed as *high*; other recreation site or activity users on road and rail should be classed as *medium*; other travellers or workers categorised as *low*; and others as *negligible*. It is recognised that the foregoing approach to magnitude of change can become over-complicated and might be better expressed in numerical form [Doc. 38(C)].
- 8.4.69 A final difficulty with the ES arises from the photographic depictions which tend to reduce clarity and vertical features compared to reality. This problem has been recognised at a previous appeal [Doc. 38(D)]. The optical shortcomings have been compounded by some misleading aspects of the individual viewpoint illustrations [Photo. 1] in terms of clarity and position and CPRW have provided a list of those problems as they affect 10 of the 15 original viewpoints [Doc. 38(E)].
- 8.4.70 As a consequence of the foregoing criticisms of the ES approach, the viewpoint analysis is not agreed in respect of 9 of the 15 viewpoints. CPRW consider that in their terminology, 2 of the 9 would experience significant landscape impact, 4 would experience contributory significant landscape and visual impact, 2 would have non-significant contributory landscape and visual impact and 1 a similar landscape impact [Doc. 47(i)].
- 8.4.71 Although PPW encourages the exploitation of renewable energy resources, this must be where they have prospects of being environmentally acceptable. For their part the Local Planning Authority must follow their countryside protection policies, unless material considerations indicate otherwise. CPRW believes that the general propensity towards development of renewable energy can be over-ridden by the duty to protect the landscape and local amenity. In weighing these potentially conflicting aims it is necessary to demonstrate objectively whether any effects would be significantly adverse.
- 8.4.72 It is submitted that it is the case here that the visual impact of the proposed Nant Carfan wind farm would have much greater adverse significance than that implied by the approach and terminology used in the ES. The construction of such large turbines would create a discordant visual intrusion permeating a visually vulnerable landscape; and eroding the enjoyment of the countryside by those attempting to escape urbanisation.
- 8.4.73 As a consequence, the proposal would not be appropriate and sensitive to the high quality and character of the SLA as required in PSP policy EC3 and MLP policy ENV3; and would have unacceptable adverse effects contrary to PSP policy EC20. The proposal would also add to the existing proliferation of wind farms, as there is already a number in the area, in terms of MLP policy ENV24, and would be a further increment in cumulative impact contrary to MLP policy ENV25.

CUM

- 8.4.74 The appellant has referred to the 1992 report involving Powys CC and infers that NC was identified as a prime site for a wind farm [Doc. 6, sect. 4 and Fig. 2]. This is not correct as it was only identified as having an appropriate wind speed. This did not demean the landscape protection policies which applied to the site. Unfortunately most of the other plateau areas identified in the report have since been utilised or targeted for wind energy schemes, unless within areas of national landscape designation or forestry [Doc. 44(D)]. NC is one of the few remaining without any form of development.
- 8.4.75 The appearance of the countryside is important for its own sake and to create a clear distinction between the values of city and country life, yet the high visual quality of the landscape is slowly being diminished. The hills still remain, much of the fabric of the landscape remains intact despite existing development, but the perception of a panorama of beauty is willingly and deliberately being marred.
- 8.4.76 The appellant emphasises an opinion that as the area already accommodates the Cemmaes wind farm, then the NC scheme would not unjustly alter the overall landscape character. To use an analogy, this seems to suggest that if there are several bags of rubbish lying around then the locality concerned might as well become a public tip. This is not logical if the original rubbish is in an area of high quality such as the SLA, as a large tip will look far worse than a few bags of rubbish. There is also an attempt to tone down the impact of the wind farm by reference to its 25 year life span and the possibility of decommissioning reversing some of its effects.
- 8.4.77 The developer also fails to understand that the area around NC is isolated and residents have a different way of life to those in cities. They choose solitude and tranquillity. Consequently, unusual appearance, movement or noise draws attention; because life is normally quiet, natural and still. The presence of the wind farm would harm the 'soul' of the landscape for local people and visitors alike. This feeling is difficult to express, but it is encapsulated in a passage from the book *'Four Fields, Five Gates'* set in Snowdonia [Doc. 45(2)].
- 8.4.78 The turbines would be an unacceptable part of the landscape because of their inharmonious challenge to what is natural. They cannot integrate into the landscape because of their alien approach and appearance. The developer has purported to minimise the effects by reducing turbine numbers and re-positioning, but it remains the case that the landscape is poorly represented and the receptors' emotions prejudged.
- 8.4.79 In fact, the judgement of Powergen is subjective, whether professional or not, and has been challenged by other professionals from CCW, CPRW, SNPA and others. The result is simply that the 2 camps of assessors have entirely different perspectives on the same subject, with each claiming his or her judgement is correct. Some note should be taken that the foregoing objectors are concerned with conservation of the countryside, whereas Powergen have a commercial interest and enjoy the unsavoury honour of appearing 3 times in the top ten of the filthiest polluters in the UK [Doc. 44(A)].
- 8.4.80 The appellants' evidence is flawed in its failure to accept the quality of the plateau landscape and its value in viewpoints and recreational experience in the local area.

The plateau around NC is stated not to be a particularly fine example of the plateau type and that there is an absence of lakes, rapids and waterfalls. In fact, the site itself has watercourses and waterfall features down the incised valley of Craig Fawr and the Nant Rhyd-y-car and there are important lakes at Llyn Coch Hwriad [Doc. 45(1)] and Llyn Gwyddior within a few kilometres of the site Doc. 45(1) and Plan S; and CE Doc. 25]. Although the road extending north from Llanbryn-mair through Pandy is mainly used by local people, during the holiday season it provides a scenic detour away from through traffic. Access can be gained to several footpaths, most notably that beginning at Nant Hir. Excellent views can be gained, particularly of Snowdonia and Aran Fawddwy to the north.

- 8.4.81 The local landscapes are some of the best in Wales and views from the high points are stunning in their panoramic magnificence. This is illustrated by the example of the position of the Wynford Vaughan Thomas Memorial to the south which provides a vista to the far peaks and plateaux of Snowdonia, but which is interrupted by the presence of turbines to which it is proposed to add NC. Another example is the seat which has been placed on Glyndwr's Way at VP24 with the intention of sitting to enjoy the panorama. If NC was built all 16 turbines would appear in that scene which would have an unacceptable impact [Photo. 4, Fig 24 and Photo. 5].
- 8.4.82 The visual enjoyment and pleasure of walking the footpaths and Glyndwr's Way would be continually affected by views of wind turbines. The inspiration to photograph and write about the area [eg: Doc. 44(B)] would disappear. As long ago as 1989 when the former Countryside Commission were developing Glyndwr's Way they stated that the "*primary objective was to develop a route which offered the public a chance to walk a path, which by virtue of its character and quality, was National, reflecting the grandest, wildest and most beautiful landscapes the Nation had to offer and also the most characteristic.*" (CCP26/1989). The National Trail is only around 2.5km from the appeal site and would have clear views of it [Photo. 1, Fig. 11.1 and Photo. 4, Fig.24] and other rights of way lie between 1 – 2km from the site [Plan K].
- 8.4.83 With regard to the feelings of local residents, the appellant concludes there would be no unacceptable impact on amenity and that the site is well screened from view. The fact is that many local properties will have views of the wind farm and there are around 30 properties in the 'local' area. Even 4 of the 7 properties within 1km of the site which the appellant has referred to in the ES [Doc. 1, Vol. 5, page 10 c)] would have views of parts of up to 7 turbines. Also, this does not take account of the movements of residents into their gardens or along a road where other views of the turbines above would appear. The appellant's landscape witness has accepted that he would regard a range of 5km as 'local'. If the 5km ZVI for NC is placed at 1:25000 scale then it can be seen that many properties will be affected [Doc. 44 (C) and Plan V] covering over 60% of the area.
- 8.4.84 The opinions of local people have been expressed through the Llanbryn-mair Community Council and Powys CC as Local Planning Authority. Both bodies object to the wind farm on grounds of its visual impact on the landscape and local views. This is a clear indication that the local community finds the landscape assessment of Powergen to be wrong in terms of its conclusions.
- 8.4.85 On the issue of landscape assessment, CUM have submitted photographs of wind turbines at Liverpool docks to show an alternative example of siting and visual

evaluation to NC [Photo. 4, Fig 21]. Those turbines are 76m tall, but integrate well into their dockyard surroundings which contains large cranes, traffic, tankers and buildings of similar character and scale. Those turbines are consistent with the industrialised setting and complementary to other machinery in a man-made environment. This is stark contrast to the upland plateau of NC. The terminology used by the appellant's landscape witness to assess wind turbines and their context appears more suitable to an industrial landscape and hardly credible in relation to the green and rural environment of Montgomeryshire. If the photographs of landscapes submitted by CUM are examined to assess their suitability to incorporate 76m high rotating structures and the degree of compatibility of the turbines with those landscapes, the results should be obvious.

- 8.4.86 Although the grid connection is to be the subject of a separate form of application, the transmission lines are still relevant to overall landscape impact and details were requested by the National Assembly [Doc. 44 (E)]. It is of note that the ES claims the wooden poles and overhead lines would "*blend well into the surroundings with little effect upon the character of the landscape*". This is similar to the terms used in relation to the turbines, yet the transmission poles would only be 6 – 8m tall, so surely a different level of judgement would be logical.
- 8.4.87 The viewpoints selected by the developer seek to be representative of views in the area, but it is not possible to appreciate the complete splendour of the landscape from still photographs as often a different experience can be gained by moving only a short distance away. For example, on Glyndwr's Way the strenuous walking is rewarded by reaching particular viewpoints and expecting to be overwhelmed by the scene. Unfortunately if NC is built the approach to certain viewpoints will be dominated by the turbines [Photo. 1, Fig. 11.1].
- 8.4.88 In such views the distant peaks of Snowdonia appear as a majestic and significant backdrop, with the Cemmaes turbines intruding into that view. Despite this the ES describes them as inconspicuous [Doc. 1, Vol. 3, App. 3, VPI] which is incorrect unless a person is facing away from them. The ES [Doc. 1, Vol. 3, App. 3] uses the words 'evident' or 'inconspicuous' to describe the Cemmaes wind farm in many views, yet the NC scheme is described as 'significant' in local views. This appears inconsistent. This conflict is also illustrated when the ES states the NC wind farm would have a significant effect on landscape character due to the introduction of elements that are uncharacteristic of that part of the central plateau, yet in the same paragraph it describes the Cemmaes wind farm as a positive feature which does not unduly alter the character of the landscape [Doc. 1, Vol. 3, App. 4, para. 2.3].
- 8.4.89 CUM have prepared a pictorial account of the SLA close to and within view of the NC site to show why it cannot successfully accommodate another wind farm without adverse visual effects on its character and quality [Photo 4 and Plan R]. The appeal proposal is unacceptable and not in accord with the development plan policies aimed at protecting the Montgomeryshire landscape.
- 8.4.90 It is submitted that the appellant has failed to recognise that the plateau area which includes NC holds many of the important features that are necessary for the area to be regarded as significantly important. To this value must be added its ecological and ornithological interest. It is the quality, character and wildness of the plateau that should be considered, not the aesthetics of wind turbines and whether they compliment the horizontal grain of the plateaux. The appellant's case is too biased in

its affinity with turbines, as indicated by the preference of the landscape witness to seeing them on plateau landscapes rather than in an industrial area. This pleasure in seeing wind farms in open landscapes must cause doubt on the objectivity and impartiality of the landscape and visual assessment. During the inquiry sessions it was also noticeable that professional landscape witnesses representing the developers had differences of opinion over assessment of certain elements of appropriateness and degree of impact.

- 8.4.91 It is important for the decision makers to take account of the lack of resemblance to reality in the photographic material provided, especially where accompanied by text which is somewhat derogatory about the landscape quality. For example, words such as 'bland' and 'uninteresting' do not give the correct impression of the valley west of NC and offends those who know the area. It is hoped the photographs provided by CUM [Photo. 4] successfully challenge those produced for the appellant. The appellant has made much of the alleged desensitisation of the area through existing wind farms and forestry. However, it is precisely for that reason that we must reflect on the sacrifices already made in the landscape by the pursuit of man's desire to develop the natural wilderness of the plateaux.
- 8.4.92 CUM feel that the demand for more power must not tip the balance between providing more energy (which we should be learning to use less), and protecting the few remaining unspoilt areas of Montgomeryshire. The harm to the landscape and visual amenity in this case far outweighs the insignificant benefits of the proposal.
- 8.4.93 Finally, it is submitted that Government policies relating to implementation of NFFO contracts have no legal status. This is in contrast to the duty of the National Assembly under section 11 of the 1968 Countryside Act to "*have regard to the desirability of conserving the natural beauty and amenity of the countryside*".

8.5. ECOLOGY AND ORNITHOLOGY

CASE FOR THE APPELLANT

The main points were:

- 8.5.1 None of the appeal site falls within any statutorily protected nature conservation site nor any other area designated as important for such interest. The surveys and assessment of the ecology and ornithology of the site are contained in the ES [Doc. 1, Vol. 3, Chap. 6 and Vol. 5, Chap. 4].
- 8.5.2 The vegetation communities within the site [Doc. 25, Table 4 and Plan I] include 3 of regional importance, namely blanket bog, dry dwarf shrub heath and dwarf shrub heath/acid grass mosaic, plus 5 regionally important plant species. The vegetation communities would be directly affected by the site works and installations, with a total area of habitat loss of about 6ha or 6.5% of the site area. However, much of this would be restored after construction and the wind farm has been designed to minimise the losses of the more valuable bog and heathland habitats [Doc. 25, Table 5]. Overall the negative effects would be of minor magnitude and not significant, mainly due to careful turbine and track location.

- 8.5.3 Other indirect effects might arise from sheep grazing and changes to the water chemistry and hydrology. In respect of the hydrology, the main concern was any effect on peat bog areas. The layout minimises the risk of any adverse impact by ensuring no turbines are sited on the bog areas and that access tracks avoid them, apart from the loss of a small area of modified bog. Indirect effects on the water chemistry would be avoided by the use of local stone in the track construction. The site tracks have been located to minimise any alterations to hydrology, with the routes mainly following the top of drainage watersheds and crossing acid grassland.
- 8.5.4 Although both the direct and indirect effects of the wind farm would be of low magnitude, with only 0.04% of blanket bog adversely affected and no heathland or acid flush communities at all, the appellants have negotiated and discussed a habitat enhancement plan with the landowners, PCC and CCW [Doc. 26(1)]. This has now been developed into an agreed scheme and made the subject of a section 106 Agreement [Doc. 54]. This will deliver a range of positive effects on the vegetation communities which will clearly outweigh the negative effects, particularly by promoting sustainable management of the bog and heathland areas.
- 8.5.5 The key aspects of the plan are as follows. First, there will be a reduction in grazing pressure on the bog and heathland habitats through fencing to manage them as separate grazing compartments. There will be a 90% reduction in stocking levels in these areas and complete removal of winter grazing, thus enhancing their conservation value. The displaced animals will be allowed to graze on the remainder of the site, but these are predominantly areas of acid grassland. Second, grip drains will be blocked on the bog conservation areas to improve its quality and restore modified bog. Third, heather moorland will be fenced to allow sustainable grazing levels and prevent heather degradation in an area currently threatened by agricultural improvement. Fourth, the position of turbine 10 has been changed to move it further from the forest edge and away from the black grouse area. The main bog and heathland habitats will be enhanced [Doc. 25, Table 6], with the blanket bog area increased from 6ha to as much as 28ha and some 79% of the site's heathland habitat safeguarded and improved.
- 8.5.6 The approach route to the site from the A458 trunk road [Plan G(2)] passes through forestry plantation which is of little conservation value. For most of its length it would follow existing tracks which would be widened and upgraded using local stone as would the final stretch of new track [Doc. 16]. The route does pass close to 2 SSSIs [Docs. 26(2) and 32] which are of interest as blanket bog and due to their range of plant species; and also some rush pasture near the trunk road. The route would not affect the bog areas of the SSSIs, nor their hydrology. The rush pasture is not of particular conservation value and only about 0.3ha of land would be taken, with floating roads used where necessary to minimise any hydrological effects.
- 8.5.7 The ES identified 9 bird species using NC in regionally important numbers. The breeding birds comprise a typical upland population of generally moderate to low conservation importance [Doc. 25, Table 1]. Red grouse and snipe were found breeding in regionally important numbers in 1998 and peregrine in 2000. Records of other species exist which were not seen in the 1994 or 1998 breeding bird surveys, which suggest that up to 7 additional species may be using the site in regionally important numbers, including black grouse and hen harrier [Doc. 25, Table 2].

- 8.5.8 Possible effects on birds could be turbine blade collision, loss of habitat and displacement from the area. In the case of collision risk this is unlikely unless large numbers of both birds and turbines are involved. The experience with other wind farms in the UK suggests the risk is extremely small and the turbines would be well spaced and are not of a lattice design which might be used for perching. There would be virtually no direct habitat loss arising from the construction of the turbines and tracks. The indirect effects of disturbance and displacement have been shown to occur within distances up to 300m in the breeding season, but this increases to over 500m at other times. The general experience from existing upland wind farms is that birds are largely unaffected by them [Doc. 26(4)].
- 8.5.9 It is considered that the agreed habitat enhancement plan will be of benefit to important bird species using the site. The black grouse uses the moorland fringe and forest edge, but the nearest lekking area is 1.8km from the nearest turbine so there would be no direct disturbance. The forest edge may be used for foraging but no turbines are proposed within 300m. The habitat enhancement plan will be a benefit to the species by reducing grazing and tree thinning around the forest. This is acknowledged by the withdrawal of the RSPB objection to the wind farm [Doc. 24].
- 8.5.10 To safeguard the protected peregrine breeding within the site the design has included a 450m buffer zone around the nest site; and it is known this species has bred successfully at the Bryn Titli wind farm only some 250m from the operating turbines. The red grouse is found mainly towards the southern end of the site away from turbine locations, but is known to tolerate them on other sites. The preferred wet flush habitat of snipe is generally avoided by the turbines and tracks and the benefits of the habitat plan would improve its feeding and nesting habitat. Although there could be some displacement of foraging birds of prey from the immediate areas of the turbines, the habitat plan's improvement of certain areas such as the heather moorland would provide them with an increased food supply. The site accommodates significant numbers of meadow pipit and skylark which are quite plentiful in the uplands. Studies have shown that wind farms do not affect population densities and they are often recorded in close proximity to turbines. Although there have been no specific winter field surveys of birds, it is considered that there is sufficient data to show that the site would not support populations of any greater conservation value than those identified.
- 8.5.11 It is submitted that in overall terms, whilst some minor negative effects may occur as a result of the wind farm, they would not be significant and would be considerably outweighed by the positive effects of the habitat enhancement plan, thus ensuring a net nature conservation gain. As a result of the agreement on this plan it is important to note that, apart from the RSPB objection being withdrawn, both CCW and MWT do not maintain their objections on grounds of ecology or ornithology and PCC are a party to the section 106 Agreement.

CASES FOR THE OBJECTORS

CCW and POWYS CC

The main points were:

- 8.5.12 CCW have been involved in discussions with the appellant during the course of the previous and current applications. Their main ecology concerns centred on potential damage to areas of blanket bog which is a priority habitat [Doc. 31] and over-grazing of sensitive habitats. In respect of birds [Doc. 27], they had concern about the impact on a nationally important population of black grouse [Doc. 29] and the effect on breeding skylark [Docs. 28(1) and 30] through habitat loss and disturbance. In the case of black grouse it was suggested that an appropriate habitat enhancement plan be secured and in the case of skylark and other species it was indicated that a monitoring programme should be established to assess the effect on the breeding success of such species.
- 8.5.13 At the inquiry they accepted that the habitat enhancement plan and other matters in the section 106 Agreement addressed the concerns sufficiently to enable the objection on wildlife and habitat grounds to be withdrawn. The imposition of a condition to establish a monitoring programme was also suggested.
- 8.5.14 At the Powys CC Planning Committee meeting of 1 December 2000 to consider the appeal proposal it was resolved to continue discussions on land management and a section 106 Agreement which might overcome nature conservation concerns [Doc. 4(i)A and B]. This was done and agreement has been reached between the parties concerned. The Council has no objections on grounds of nature conservation and is a party to the formal Agreement [Doc. 54].

8.6. NOISE

CASE FOR THE APPELLANT

The main points were:

- 8.6.1 A noise impact assessment was undertaken as part of the ES accompanying the original planning application M 1999 0475 [Doc 1 (ES Vol 3 Section 9)]. The amended application M 2000 0220 was accompanied by the original ES information and additional information on noise [Doc 1 (ES Vol 5 Section 3)], addressing concerns raised by consultees in respect of the original proposals and reflecting the amendments to the proposed turbine layout.
- 8.6.2 Background noise surveys have been carried out at 9 different locations and the results used to provide noise impact predictions for 14 residential locations [Doc 39(G) Plans 1 and 2)]. The background noise survey results are summarised in ES Vol 3 Section 9.3 and Vol 5 Section 3.2/ Appx A2.3; the data is presented in ES Vol 3 Appx C Figs 1224/TH 1-47 and Doc 39(A) Figs 1224/2/TH 1-31. Background noise regression analyses for the survey locations are provided in ES Vol 3 Section 9.3.3/Appx C Figs 1224/Regression analysis 1-12 and Doc 39(A) Figs 1224/2/Regression 1-13. The noise impact predictions for each dwelling are summarised in Doc 39(F).

- 8.6.3 The prediction algorithm used incorporates allowances for the barrier effects of topography, as indicated by recent ETSU research [Doc 39(E)]. No tonal noise correction has been applied to the prediction results, as it is proposed that any warranty with a turbine supplier will include a warranty against the emission of tonal noise. In response to criticisms by CUM of the extent and reliability of background noise measurements taken, alternative noise impact predictions have been made incorporating 95% confidence limits for the calculated prevailing background noise level at each assessed location [Doc 41/S2 & S3].
- 8.6.4 Development plan policies concerning noise issue (PSP Policy EC 20 : Renewable energy sources; EC 23 : Pollution) have been complied with [Doc 2 (CD4)]. A full assessment of the noise effects of the proposal and their implications for amenity has been carried out. The Council's Environmental Health Officer was consulted over the details of the noise impact assessment. All matters of concern raised by the EHO have been addressed by supplementary assessments and additional information provided during the course of the application and appeal process [Doc 1 ES Vol 5 & Doc 39(C)].
- 8.6.5 Policy ENV 26 of the emerging MLP refers to minimising any adverse effects from noise, and states that proposals will be refused where there would be significantly detrimental effects on residential amenity or environmental quality [Doc 2 (CD5)]. In the absence of any definition of what constitutes "significantly detrimental" the absolute lower noise level range recommended by the DTI NWG for low-noise environments has been adopted. Such levels are low compared to other advisory documents reviewed by the DTI NWG and reflect a concern to properly protect the external environment [Doc 2 (CD14, p63)].
- 8.6.7 In undertaking the noise impact assessment, full regard has been had to national planning policy guidance concerning the effect of noise contained within PGW, TAN 11 "Noise" and TAN 8 "Renewable Energy"; regard has also been had to government guidance applicable in England contained in PPG 24 "Planning and Noise". The limitations of the BS 4142 : 1997 rating system for assessing turbine noise in rural areas are noted [Doc 39(B)]. In particular, the standard is intended for use in mixed industrial and residential areas, and is acknowledged to be unsuitable for areas with very quiet background levels and where high wind speeds may occur. Such locations should be assessed with particular reference to the character of the area. However, the standard is designed to determine noise levels at the outside of a building. As such, it is relevant to consideration of outdoor amenity.
- 8.6.8 BS 4142 is designed to assess the likelihood of noise of an industrial nature giving rise to complaints. When the background and/or the rated noise is outside the scope of BS 4142 the subject noise may be more than 10dB above background level but still not result in complaints due to its low absolute level. However, the tolerance of a receptor to a particular noise may well depend upon attitudes to the premises or noise source.
- 8.6.9 The approach used to assess the acceptability of the proposal in terms of noise impact is consistent with guidance in "The Assessment and Rating of Noise from Wind Farms: ETSU-R-97", prepared by the DTI NWG [Doc 2 (CD14)]. The document, which is referred to as a source of information on the assessment and rating of noise from wind turbines in TAN 8, recommends a method by which noise criteria may be set up to protect the amenity of neighbouring properties to ensure that an

unacceptably adverse or detrimental effect will not occur. It includes guidance for situations where background levels are very low (less than 30 dB L_{A90}). In such situations the guidance recommends an absolute noise level criterion between 35 and 40 dB L_{A90} [Doc 39(B)].

- 8.6.10 In addition to assessing the effect on neighbouring properties during quiet daytime and night-time periods the assessment also considered the effect of the new noise source upon sleep. WHO : Environmental Health Criteria 12 - Noise (1980), which forms the basis of current planning policy guidance on this matter, and the more recent WHO Guidelines for Community Noise (March 2000) which are not reflected in planning guidance, have both been taken into account in determining the relevant acceptability criteria for turbine noise [Doc 2 (CD14 pp30-32), Doc 1 (ES Vol 3 Section 9.2.5.1)].
- 8.6.11 To determine whether sleep disturbance would occur to the occupants of neighbouring dwellings due to turbine operation, the assessment analysed whether the internal noise level due to this would exceed 35 dB L_{Aeq} at wind speeds up to 12 m/s at 10m height above ground level. WHO guidance referring to noise levels 10dB above background noise level relates to sleep disturbance arising from short term noise events, and applies only where the noise event exceeds 45 dB. Below this level, sleep disturbance would not generally occur, regardless of background noise level.
- 8.6.12 The conditions identified by the study on ‘Damage and Annoyance caused by Noise’ referred to by CUM would not be contravened by operation of the proposed turbines, when expressed in terms of the external noise levels which would give rise to the internal noise conditions identified. The predicted internal noise levels for properties close to the Nant Carfan scheme have been calculated on the assumption that windows are open for ventilation. If it is assumed that all windows are closed, such that the lower internal threshold of noise for sleep disturbance would apply, then a relatively higher level of noise from an external source would be needed to reach the internal noise threshold. The predicted noise levels in the case of Nant Carfan would produce internal noise levels, with windows closed, below 25 dB L_{Aeq} at all dwellings.
- 8.6.13 The noise criteria proposed by the DTI NWG seek to ensure that in a low noise environment the daytime level of the $L_{A90, 10 \text{ min}}$ of the wind farm noise should be limited to an absolute level within the range of 35 - 40 DB(A). The DTI NWG believes that limits within this range offer a reasonable degree of protection to wind farm neighbours without placing unreasonable restriction on wind farm development (DTI NWG report ETSU-R-97, p. 63) [Doc 2 (CD14)]. Although objectors contend that this threshold is inappropriately high for a tranquil rural area, comparisons with background noise levels used to define tranquil areas in England show that this level of noise would be consistent with such tranquillity thresholds [Doc 41/S1].
- 8.6.14 Concerns have been voiced about the potential effects of low frequency components present in turbine noise. However, based on the characteristics of available wind turbine noise data, it is considered that any potential tonal noise problem would be eliminated by the noise frequency analysis requirements contained in the draft warranty noise specification and the tonal assessment method prescribed within the suggested noise conditions [Doc 39(D)&(I)]. A noise specification for the turbines is proposed which sets a maximum overall sound power level and defines a tonal criterion and measurement method that any machine must achieve.

- 8.6.15 Low frequency noise emission problems claimed to affect residents close to the Cemmaes wind farm are likely to be a consequence of the very different, teeter-hub design of these much earlier turbines. The turbines being considered for installation at Nant Carfan are not teeter hubbed and have a better control of yaw error. It is these two factors which cause the low frequency noise emissions from the Cemmaes turbines. This will ensure that noise effects as described for the Cemmaes turbines should not occur at dwellings neighbouring the appeal site.
- 8.6.16 Studies performed in the UK have indicated that infrasound is not an issue with respect to modern wind farms. The ETSU report "Low frequency and vibration measurement at a modern wind farm: ETSU W/13/00392/REP concludes that low frequency noise was unlikely to be perceived or generate complaints, and that measured infrasound levels were well below the audibility threshold at these frequencies. Any sound which is audible and tonal is controllable by noise conditions which allow an assessment of tonal noise to be performed.
- 8.6.17 Predictions have been undertaken of the incident noise levels at dwellings near to the site using a prediction algorithm that takes the following into account: source sound power level; tonal noise correction; geometric spreading; atmospheric absorption; ground effect; refraction by meteorological gradients; barrier losses; turbine wind speed [Doc 39(E)]. Although the data range collected has been limited by the rejection of rain-affected data, the range of wind speeds and directions for which data is available [Doc 41/S4] is considered sufficient for the purpose of assessing the representative noise environment. Account was taken of the direction from which each dwelling is down wind of the site and the direction for which it is most sheltered. The prediction methodology is designed to give the highest levels likely to occur at any dwelling, assuming worst-case propagation conditions.
- 8.6.18 The prediction and assessment of the incident wind farm noise provides the measured or assumed prevailing background noise levels for the assessment location, the DTI NWG recommended acceptable noise threshold and the predicted wind farm L_{Aeq} and L_{A90} noise levels. Each location was assessed for the quiet daytime and night-time periods. An assessment of the potential for sleep disturbance has also been undertaken, which gives the predicted internal L_{Aeq} noise level with windows open for ventilation.
- 8.6.19 The assessment concludes that the worst-case predicted noise levels from the turbines, between the cut-in wind speed of 3.5 m/s up to rated output (a wind speed of around 12 m/s) will meet the DTI NWG lower absolute noise criterion for quiet daytime operation at all locations except Nant Carfan Farm [Doc 40A]. There will therefore be no significant detrimental effect due to noise upon the amenity of any other neighbouring property.
- 8.6.20 At Nant Carfan Farm an exceedence of the recommended threshold by less than 0.5 dB L_{A90} is predicted to occur. This dwelling is associated with the development. In any event, this marginal exceedence in worst-case conditions would not unacceptably detract from the amenity of its occupants.
- 8.6.21 An assessment of wind turbine noise at wind speeds greater than 12 m/s was not undertaken, as DTI NWG recommendations restrict the setting of noise limits at higher wind speeds [Doc 2 (CD 14 p.53)]. There is a small risk that the DTI NWG

quiet daytime criterion might be exceeded during high wind speed conditions. However, it is estimated that this would probably occur during hub height wind speeds in the range 21-26 m/s, which is around 3-4% of the total range of operational wind speeds for the wind farm and in the region where the turbines would automatically shut down. It is not expected that wind turbine noise would exceed the prevailing background by more than 5 dB at wind speeds higher than 12 m/s at 10 metres height.

- 8.6.22 The maximum predicted internal noise level for any dwelling neighbouring the proposed development is 32 dBL_{Aeq} at Nant Hir, at a wind speed of 12m/s when windows are open for ventilation. Other dwellings that may marginally exceeded 30 dBL_{Aeq} for these wind conditions are Blaen-y-Cwm (30.5 dBL_{Aeq}), Nant Carfan (30.5 dBL_{Aeq}) and Ty Neuadd (30.3 dBL_{Aeq}). This indicates that sleep disturbance is unlikely to occur at any dwelling neighbouring the proposed development due to turbine operation, even when bedroom windows are open for ventilation [Doc 39(F)].
- 8.6.23 Criticisms of the reliability of the collected background noise data are not accepted. However, a further assessment has been undertaken applying a 95% confidence limit, giving even lower assumed background levels at the assessment locations [Doc 41/S2 & S3]. Even assuming this absolute worst case background level, the predicted wind farm noise still complies with the lower absolute quiet daytime criterion within the recommendations of the DTI NWG, with the sole exception of Nant Hir. At this one dwelling there would be a potential small exceedence of the criterion at wind speeds of between 12 and 14m/s. Such wind speed conditions, on occasions when Nant Hir would be down wind of the wind farm, would be rare.
- 8.6.24 Opponents of the scheme suggest that the background noise measurement data is inconsistent with the assessment made for the Cemmaes re-powering scheme and the assumptions about background noise levels made in connection with the Cemmaes B proposal. These apparent inconsistencies are explained by restrictions on the availability of data for use in the different prediction exercises. However, any assumptions made err on the side of caution, so that the assessments based on them predict effects worse than will be the case in practice. The data differences between the different assessments undertaken at various times do not affect the robustness and reliability of the data used in the Nant Carfan scheme assessment [Doc 40B & Doc 41/S5].
- 8.6.25 An analysis has been undertaken of any potential cumulative noise effect from the Nant Carfan proposal and the existing and permitted Cemmaes A and Cemmaes B turbines. This has been assessed for easterly and westerly wind directions during quiet daytime periods for dwellings between the wind farm locations [Doc 41/S6 & S7]. The analysis indicates that the recommended noise conditions for the turbines [Doc 39(I)], which set absolute noise level limits (rather than levels relative to background noise) based upon DTI NWG recommendations at all dwellings neighbouring the site, would be met even with the Cemmaes A and B turbines operating.
- 8.6.26 Consideration has been given to the noise concerns raised by Mr Laister of Cwm Pen Llydan and to the noise impact analysis submitted on his behalf [Doc 50 & Doc 1 Vol 5 Appendix A2.2]. The background noise measurements undertaken at Cwm Pen Llydan indicate good sheltering from easterly winds and some shelter for westerly wind directions. Background noise at the property includes wind noise in trees.

- 8.6.27 The potential acoustic effects of sound being channelled by wind and temperature effects pertaining to Cwm Pen Llydan were taken account of by the prediction algorithm applied in the noise assessment; the fog formation conditions referred to by Mr Laister would tend to bend sound in an upward direction, away from receiver properties, rather than towards them [Doc 1 Vol 5 Appendix A2.1-A2.3, Doc 39(E), Doc 41/S6].
- 8.6.28 The noise impact analysis undertaken by Ambient Acoustics Limited contains a number of assumptions which result in an over-estimation of the incident noise levels at Cwm Pen Llydan. In particular, the distance of the property from the turbines is underestimated and there is no allowance for atmospheric attenuation within the calculation. Correction for these factors gives a similar result to the appellant's predictions for Cwm Pen Llydan [Doc 1 (ES Vol 3 Appendix C) and Doc 39(F)]. Predictions made by Ambient Acoustics Limited for Cwm Pen Llydan and other properties also contain underestimates of barrier attenuation effects for some properties and miscalculate the sound power level of the proposed turbines at the optimum operating wind speed [Doc 1 Vol 5 Section 3.5 (pp 17-19)].
- 8.6.29 In response to concerns raised by other objectors [Doc 39(H)], additional predictions have been undertaken for the hamlet of Pandy [Doc 39(F) figs 27&28, Doc 40A]. These give a predicted maximum noise level from the turbines of 25 dBL_{A90}, confirming that it is unlikely that the turbines would be audible at this location and that any noise would not affect health.
- 8.6.30 The predicted noise levels that would be experienced at the nearest public right of way are 15-20 dB below the level above which 20% per cent of the general population may be expected to be annoyed by a noise source. The noise levels at this location, some 1000m to the east of the site, would be no more than 38 dBL_{A90} at a wind speed of 12m/s. The typical daytime annoyance threshold level is 50-55 dBL_{Aeq}. Turbine noise would therefore not significantly detract from the amenity of users of rights of way [Doc 39(J)].
- 8.6.31 Concerns that the turbines will drone incessantly are probably based on experience of the Cemmaes turbines. However, those turbines are an early design, with very different noise level and tonal characteristics to those currently proposed. The noise specification requirement that would be placed on the turbine supplier and the noise conditions suggested would safeguard against similar problems arising from the Nant Carfan scheme.
- 8.6.32 In summary, national guidance [TAN8 paras A28 and A10] recognises that noise levels from well-designed wind turbines are generally low. Prevailing policies and guidance do not require that wind turbines should not be audible at properties in the locality. MLP Policy ENV26 seeks minimisation of adverse noise effects and indicates refusal only where noise from wind turbines would be significantly detrimental to residential amenity or overall environmental quality.
- 8.6.33 The noise implications of the proposal, assessed in accordance with relevant planning guidance, would comply with the advisory thresholds contained within the DTI NWG recommendations and WHO advisory documents. Even adopting worst case assumptions, the proposal would not be harmful to residential amenity or environmental quality. The application of 95% confidence limits to the assessment

data confirms the robustness of the conclusions. The Council's Environmental Health Officer has agreed that the suggested conditions concerning noise from the turbines are sufficient to protect residential amenity. The evidence submitted demonstrates that the noise conditions proposed can be satisfied.

- 8.6.34 The noise conditions fully take into account the noise effects of the existing Cemmaes A and permitted Cemmaes B turbines, and the potential cumulative effects of these together with the proposed scheme. There is no policy basis for a stance that wind farms should not be sited in tranquil areas; indeed, TAN8 recognises that wind farms are likely to be built in areas that by definition would be tranquil. The proposal accords with national policy guidance, the relevant policies of the development plan (PCSP EC20, EC23) and the emerging local plan (MLP ENV26).

CASES FOR THE OBJECTORS

The main points were:

CUM

- 8.6.35 From the point of view of residents and visitors, and from the wider public standpoint, the concern is the potential noise pollution of this tranquil rural environment. The issue is about enjoyment of the outdoor amenity of the peaceful uplands as well as the effect on people's enjoyment of their gardens and the bedrooms and living rooms of their homes. Levels of industrial noise which may be acceptable in a mixed industrial and residential area would be harmful and unacceptable in a quiet rural environment, and contrary to planning policy (MLP Policy ENV26).
- 8.6.36 National planning guidance (PPW) confirms that the effect of noise on the enjoyment of areas of landscape, wildlife and historic value should be taken into account. This advice applies to the site, which is within the Western Uplands SLA. WHO guidance states that existing quiet outdoor areas should be preserved in parkland and conservation areas.
- 8.6.37 It is clear that the background noise assessment contained in the ES is based on BS 4142 : 1990, since it was made in 1994 and thus pre-dates the DTI NWG guidelines. Although TAN 8 refers to BS 4142 as the standard which comes nearest to dealing with the noise issues encountered in wind turbine development, the standard is intended to assess noise from installations in mixed industrial and residential areas rather than rural locations. It is not applicable to areas with a background noise below 30dB(A). It is designed to assess the likelihood of complaints from people residing within a building, and thus ignores outdoor amenity. There are no statutorily set noise limits.
- 8.6.38 Although the developer claims that the absolute noise levels resulting from the proposed turbines will be within acceptable limits, it is the level of turbine noise in relation to prevailing background noise which is of primary importance in the perception of noise nuisance. The DTI NWG approach of replacing a threshold 5 dB(A) above background noise with a higher absolute level in very low background noise situations results in a lower standard of protection from noise pollution in tranquil environments than for environments already affected by noise. It permits

situations where noise levels could exceed background noise by more than 10dB, which the NWG Report ETSU-R-97 and WHO guidance acknowledge may give rise to complaint.

- 8.6.39 The NWG stance that lower noise thresholds would be unduly restrictive on developments which are recognised as having wider national and global benefits is unsustainable given the small amount of energy in national and global terms that would be produced by the scheme.
- 8.6.40 WHO has recently issued more stringent guidance on the noise levels avoiding sleep disturbance, reducing its advisory threshold from 35dB(A) to 30dB(A). Experimental data ("Damage and Annoyance Caused by Noise", Bruckmayer and Lang, 1975) [Doc 48A] shows that the disturbance effects of noise on sleep are greater when windows are closed than when they are open. The experience of residents close to the Cemmaes wind farm confirms this; disturbance in their case is not due to resonance of large glazed areas [Doc 48B].
- 8.6.41 The tranquil nature of the locality is fundamental to the assessment of noise impact. Noise levels which may be insignificant in other environments would be clearly perceptible and intrusive in this very quiet rural environment. Although a tranquillity mapping exercise (such as carried out by CPRE for England) has not been undertaken for Wales, the satellite map of night light distribution in Britain which correlate closely with the tranquillity map for England confirms the very quiet environment of mid-Wales [Plan U]. The quality of the sound environment is an extremely important component of the upland experience, and would be harmed by the proposed turbines. In England, the CPRE identifies most wind power developments as creating a source of disturbance within tranquil areas.
- 8.6.42 Although the developer claims that the turbines would satisfy the DTI NWG guidelines [Doc 2 (CD14)] for assessing whether or not the predicted noise level would cause detriment to residential amenity, these guidelines have no statutory weight and are indicative only. Moreover, they have been produced by the wind farm industry to assist the development of wind farms. As such, the guidance cannot be seen as unbiased or impartial. The guidance attempts to "*give indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs and administrative burdens on wind farm developers or local authorities*" (Introduction to the Executive Summary of the NWG Report). The experience of residents near existing wind farms [Doc 44 I(ii)] confirms the inadequate protection provided by the NWG guidelines.
- 8.6.43 The background noise assessment contained in the environmental statement fails to meet NWG recommendations in a number of respects. It is doubtful that sufficient survey data was obtained to provide a fully representative range of the conditions pertaining at a particular site. Although one week's worth of data was gathered for each property, not all of this is reliable due to periods of rainfall, raised stream levels and a lack of higher wind speed conditions. There is no indication that particular regard has been had to localised effects at dwellings occupying sheltered positions or the effects of localised topography in making turbine noise predictions.
- 8.6.44 The additional background noise assessments at two further properties in 1999 were similarly deficient. There is consequently a risk, if data for a particular wind speed or

direction are missing or very low sound levels have not been recorded, that the "average" is not an accurate measure of the sound environment. Without a measure of the variability of the data, the reliability of predictions based on a fitted average sound level is of little value.

- 8.6.45 Local topography would have a major effect on the impact of noise from the turbines on nearby dwellings, which are in sheltered valleys below the site. The DTI NWG guidelines recognise that the sheltered location of nearby properties in hilly areas can result in noise complaints at higher wind speeds than would otherwise be expected [Doc 2 (CD14 pp39, 47, 49)]. Little account has been taken of topography other than to regard hill slopes as barriers. The revised predictions taking into account barrier attenuation are based on a formula that has not been comprehensively tested and validated.
- 8.6.46 The noise assessments for certain properties, for example Blaentafolog, are inconsistent with previous assessments conducted as part of the Cemmaes B and Cemmaes re-powering wind turbine proposals [Doc 43]. This calls into question the reliability of the current background assessment and thus the degree of protection which the proposed maximum noise levels suggested as conditions of operation might provide.
- 8.6.47 No infrasound report has been made. Experience of turbines elsewhere indicates that there can be problems with low frequency tones, which can have a particularly disturbing effect.
- 8.6.48 In the absence of a satisfactory noise assessment the proposal should not be permitted to proceed, since it would then be too late to mitigate noise by relocating or deleting turbines. A situation should not be permitted to develop where there is a risk of noise nuisance repercussions.
- 8.6.49 In summary, the area is a very quiet environment, unsuitable for industrial noise intrusion. The prevention of noise pollution should include protection of the wider environment, not just residential amenity. The present tranquil quality of the area would be lost if the proposal were to proceed, to the detriment of residents and visitors to the area alike.

Other Objectors

- 8.6.50 Mr B Laister, a resident at Cwm Pen Llydan (about 2.5km from the nearest proposed turbine position [Doc 39(G)]), raises detailed concerns about noise effects of the turbines arising from the particular relationship of his house, and others in the Rhiw-Saeson valley, to the proposed wind farm and the potential effects of topography, prevailing winds and atmospheric conditions upon turbine noise propagation [Doc 50(1)-(4)].
- 8.6.51 Owing to the topography of the locality, prevailing westerly winds coming from the Atlantic are funnelled along the Dyffryn Dyfi and intensify as they cross Mynydd y Cemmaes and Mynydd Rhiw-Saeson and the intervening Nant Carfan valley. This air stream is channelled down into the Rhiw-Saeson valley, which has an "ice-age dish" formation, and sweep up its eastern side. The effect of local air streams and air pockets of different temperatures also results in localised fog conditions and atmospheric acoustic effects. As a result of these factors the noise from the proposed

wind turbines would be trapped, amplified and channelled into this dish, increasing the noise disturbance for occupiers of properties in the Rhiw-Saeson valley.

- 8.6.52 An acoustic analysis carried out on Mr Laister's behalf by Ambient Acoustics Ltd concludes that, at the sound power level emitted by the turbines at 10m/s wind speed, a perceived noise level of 40dB(A) (rather than the 33dB(A) maximum stated in the ES) could be experienced at Cwm Pen Llydan, even without any consideration to adverse wind conditions. Additional analysis carried out to calculate turbine noise at a number of properties at an assumed optimum wind velocity for the turbines of 15m/s gives incident noise levels at the properties 9dB(A) higher than would be the case for 10m/s [Doc 50 & Doc 1 Vol 5, Appendix A2.2].
- 8.6.53 The micro-climate in the vicinity of Cwm Pen Llydan, manifested in lower temperatures, local fog, frost and snow characteristics and trees bent by prevailing winds, bears out the presence of these local conditions. The potential for local air stream effects to carry turbine noise over large distances is demonstrated by the fact that the drone of the existing Cemmaes wind turbines is sometimes audible at Cwm Pen Llydan. The developer's analysis acknowledges that the proposed turbines may be audible from the point of cut-in. It is therefore possible that they will be audible all the time when operating. (Also see paragraph 8.11.29[9].)
- 8.6.54 Mrs J Macdonnell of Blaentafolog (960m from the nearest proposed turbine position [Doc 39(G)]) states that she and her family already experience droning noise from the Cemmaes turbines, (some 1800m away) in certain weather conditions, especially with westerly winds. The noise of these turbines, described as "whining" and "droning", is alien to the tranquil rural surroundings and affects enjoyment of the outdoors and sleep. The 1996 ES for Cemmaes B stated that Blaen Tafolog received up to 35dB of turbine radiated noise from these existing turbines. Current predictions estimate a similar level of noise from the Nant Carfan turbines. The combined effects of noise from two sets of turbines would be wholly unacceptable, particularly as the worst noise from the proposal would be when the wind is easterly.
- 8.6.55 Mrs S Jones of Clegyrnant Farm (1.3km from the nearest proposed turbine position [Doc 39(G)]) says that noise from the proposed turbines would be intrusive and unacceptable. The autumn background noise assessment was during a period with additional noise from rustling leaves and high stream water levels. The noise predictions undertaken indicate noise levels approaching the NWG-defined threshold of acceptability, but do not give levels for higher wind speeds above the rated noise level of the turbines. There is a possibility of greater noise disturbance at higher wind speeds. The predicted external and internal noise levels may be relatively low, but would be clearly audible and intrusive. Other residents close to wind turbines speak of the irritation and disturbance caused by the variable droning noise, which affects enjoyment of gardens and interferes with sleep. The character of the noise is such that even at or below the level of background noise, it will still be noticeable.
- 8.6.56 Other local people (Mrs G White, Pandy, Llanbrynmair, Mrs M Jones, Rhyd y Meirch, Llanbrynmair, Mrs H Hughes, Bodhyfryd, Llanbrynmair) also express concerns about the effects of the turbines on the peaceful rural environment, with adverse implications for amenity and the well-being of residents.

8.7 TRAFFIC AND ACCESS

CASE FOR THE APPELLANT

The main points were:

- 8.7.1 A summary description and appraisal of the proposed means of access to the site and details of vehicle movements during the construction period is provided within 2.7 of the Nant Carfan ES Volume 3 [Doc 1 Vol 3]. A more detailed appraisal of the site access route and upgrading requirements has also been undertaken [Doc 16].
- 8.7.2 Access to the site would be through an existing area of forestry, taking direct access from the A458(T), around 5km (straight line distance) to the north. It would utilise existing forestry tracks, together with sections of newly constructed private access track at either end, to complete the route from the public highway to the site of the turbines.
- 8.7.3 A new track junction would be created with the A458(T) [Plan G], some 0.5km east of the existing forest road junction with the trunk road. This would be laid out to permit access by larger vehicles travelling either east or west along the A458(T). The Highways Agency has confirmed the acceptability of the proposed trunk road junction arrangement [Doc 22].
- 8.7.4 The existing forestry track can be improved, with minor upgrading works, to a standard capable of accommodating the construction traffic requiring access. Approximately 3km of new access road would be constructed in addition to the site tracks serving individual turbine locations.
- 8.7.5 It is anticipated that sufficient construction material for new access roads (estimated at about 25,000m³) would be obtained from excavation of the turbine bases and the improvement works to the existing access road within the forestry area. Any additional material for access road and site track construction would be obtained from existing borrow pits within the forestry area. Failing this, and in the unlikely event of any shortfall, suitable locations for borrow pits have been identified within the site boundary. These would be the subject of a separate mineral extraction application to the County Council. The borrow pits would be restored on completion of the construction phase.
- 8.7.6 The numbers and types of vehicle movements likely during the construction period are summarised in section 2.7.10 of the ES volume 3 [Doc 1 Volume 3]. The construction period would last an estimated 10 months. In summary, construction of the development would involve 53 lorry arrivals at the site for each of the 16 turbines, assuming that all road stone is obtained in the manner described above. Over the construction period personnel vehicles commuting to the site would be likely to average 20 arrivals per day.
- 8.7.7 In short, there are no objections to the proposal by the highway authorities and the evidence demonstrates that there would be no significantly adverse implications relating to traffic and access.

POWYS COUNTY COUNCIL

- 8.7.8 No evidence was presented by the County Council relating to traffic or access matters.

CASE FOR THE OBJECTORS

- 8.7.9 No evidence was presented by the main parties opposing the proposal relating to traffic or access matters. One interested person appearing at the Inquiry (Mrs G White, Pandy, Llanbrynmair) considered that the A458(T) north of Pandy is unsuitable for heavy lorries travelling to and fro and already sees fatal accidents.

8.8. ARCHAEOLOGY

CASE FOR THE APPELLANT

The main points were:

- 8.8.1 Details of the original archaeological assessment of the site are given in the ES [Doc. 1, Vol. 3, Chap. 7]. Broadly, the assessment found evidence of peat cutting activities over the flatter plateau areas; some field and enclosure boundaries to the east, probably post-medieval; and some pre-historic and undated cairns and a possible hut circle [Doc. 1, Vol. 4, Fig. 13 and Plan J]. The perceived significance of the finds were classified ranging through A: possible scheduled status, B – C: regional and local importance, D: badly damaged, and E: those unable to be assessed from field work alone. All the 11 sites found at NC were categorised A, B or C. The wind farm would have no effect on 9 of these, but construction activities or the proximity to turbines or tracks might possibly affect 4 sites. In mitigation, the ES proposes that the relevant sites be fenced off to avoid possible damage during site works, and also a ‘watching brief’ maintained by an archaeologist on the known remains and any unknown sub-surface archaeology which may be found during the on-site works.
- 8.8.2 The mitigation measures would not avoid some damage to the category B field system and enclosures on the east side of the site and this would have to be excavated and recorded where affected. In respect of the current application [Doc. 1, Vol. 5, Chap. 5] CPAT asked that further consideration was given to moving turbine 4 to avoid track damage to part of the enclosure, but there is no scope for this without compromising other sensitive aspects of the site. However, an archaeologist would be employed to excavate the location concerned prior to construction works commencing.
- 8.8.3 CPAT also asked for an assessment of the proposed access route to the site, but there are no SMR notes of any known archaeological interest and much of the route uses existing tracks in intensively forested land. For any stretches of new or improved track the appellant is prepared to undertake an archaeological assessment and necessary mitigation measures prior to works commencing.
- 8.8.4 The Powys CC report to Planning Committee on 1 December 2000 indicates that CPAT had no comment on the planning application, subject to the mitigation measures proposed, and the report reached a similar conclusion [Doc. 2, CD3]. Having regard to the mitigation proposed and the lack of objection by the Council, it

is submitted that there would be no conflict within national policy in PPW [Doc. 2, CD7, paras. 5.7.2 – 5.7.6] or MLP policies ENV18 – ENV20.

- 8.8.5 In response to the evidence of CUM, the appellants have sought the advice of CPAT [Doc. 8, App. PW(S)5]. This shows that with suitable mitigation there should be no harm to the archaeological sites themselves. It is accepted that the setting of some of the remains will be affected by the wind farm, but that will be the setting of today and not that which existed when the sites were in use. The context of the remains can contribute to an understanding of their function, but it is not accepted that the turbines will unduly affect that factor in the case of the limited archaeology on the appeal site.
- 8.8.6 Improved access to the site could allow metal detector users to get on to the site, but the likely level and material quality of any metal-work found would probably not be attractive for such people, nor is unofficial digging very likely. CUM refer to noise intrusion, but CPAT archaeologists working on the Carno wind farm did not find this to be the case. CPAT consider the concept of Bronze Age activity being confined to the uplands is not tenable and there are many such sites elsewhere in the UK, including lowland areas.
- 8.8.7 PPW makes it clear that with remains which are of less than national importance there is a need to weigh their relative merits against other factors, including the need for the development. CPAT take the view that, subject to appropriate mitigation measures, there are no valid archaeological reasons to refuse planning permission for the wind farm. It is submitted that the development would not have an unacceptable impact on archaeological features or their settings. Subject to appropriate conditions, there is no conflict with PSP policy EC16 or any basis to refuse planning permission on archaeological grounds.

CASE FOR THE OBJECTORS

CUM

The main points were:

- 8.8.8 The ES reveals that of the 11 sites found within the appeal site, there are 3 Bronze Age sites worthy of scheduling and 2 of regional importance. A cairn is within 150m of the northern turbine cluster and the ring cairn has turbines in the views to the east. The hut settlement and associated features are only 30 – 40m from a turbine track and almost surrounded by turbines. It follows that the setting of these monuments which is integral to their wider meaning would be utterly changed and there are no mitigation measures which could prevent this. There are also sites outside the site boundary which could be affected.
- 8.8.9 Access to the site would be improved, thus making the remains vulnerable to metal detectors and unofficial digging. Also, it is debatable if a single archaeologist employed at the site could assess and halt potential damage over the whole area. Apart from the visual impact of the turbines, their noise would have a major impact on the quiet setting of the place, contrary to paragraph 45 of PGW [Doc. 2, CD7].
- 8.8.10 The landscape and quiet environment setting of the remains provides a ‘sense of place’ which people feel on the site. The proposed wind farm runs contrary to the

desirability of preserving such remains and their settings in this historic landscape, contrary to WOC 60/96 [see CL Doc.4, CD18, para. 10].

8.9. TOURISM, RECREATION AND RIGHTS OF WAY

CASE FOR THE APPELLANT

The main points were:

- 8.9.1 As regards concerns raised by objectors about the impact of wind farm proposals on tourism, ETSU research has been carried out into the subject [Doc 8 (PW(S)1)]. This reveals a divergence of views about the effects of wind farm developments on tourism. However, more people thought wind farms attracted tourists than thought tourists might be put off by them; and the evidence of a negative effect relates to opinions voiced about the landscape effects of wind farms rather than evidence that wind energy development has harmed tourism.
- 8.9.2 In relation to the recent unenthusiastic stance of Welsh tourism bodies on wind farm development, correspondence with WTB has confirmed that its new stance is based primarily on concerns raised by individual trade members [Doc 8 (PW(S)2,3)]. WTB's policy concerning onshore wind energy development [Doc 8 (PW(S)2)] adopts a blanket approach to proposals, based on speculative concerns about the possible effect of a proliferation of wind farm developments. This is somewhat at odds with CCW/PCC promotional walks leaflets which prominently feature wind turbines [Doc 8 (PW(S)4)]. No research findings providing support for its position have been made available. It is inconsistent with the approach set out in national planning policy and in any event has no status in planning policy terms. WTB has not commented on the particular merits of the Nant Carfan proposal.
- 8.9.3 Although CPRW and individuals raise objections relating to impact on tourism, PCC and CCW do not. WTB has put forward no evidence at the Inquiry to support its policy. Any suggestion that wind farm development may have an adverse effect on tourism is entirely anecdotal. The assertion that the Nant Carfan proposal will ruin a beautiful part of Wales with consequential negative effects for tourism is rejected in the light of the expert assessment of landscape and visual effects carried out on behalf of the appellant and the balance of available evidence concerning the effects of wind farms on tourism. There are no development plan policies that specifically seek to protect tourism from other forms of development; and policies which seek indirectly to encourage tourism by safeguarding the character of the area are fully respected by the proposal.
- 8.9.4 The site of the proposed turbines is not accessible by public rights of way [Plan K]. The nearest public right of way is some 800m away from the nearest turbine position, and at a level some 130m lower. Although a right of way through the forestry to the north crosses the proposed access road at two points, there is no trace of this on the ground. Even if used by the public, construction traffic would not unduly interfere with its use.
- 8.9.5 Although there is an adjacent area of common land to the north of the turbine positions [Plan N], the scheme will not interfere with the use of this land. The only significant effect on the common land would be views southwards. This would not

unacceptably adversely affect the landscape character of the common. Important views northwards to the Snowdonia National Park would not be harmed. Public access to the common as a result of the CROW Act 2000 would not be adversely affected. The extent of future increased public access to the site and other nearby areas of open country is purely conjectural at this stage. In any event, views out from the appeal site would remain unaffected. In addition, increased open country access will give greater opportunities to individuals who find walking where there are wind farms unacceptable. The proposal accords with PSP Policy EC7, which seeks to avoid unacceptable harm to the open nature, accessibility, landscape value and nature conservation value of common land.

8.9.6 The proposed wind farm would be visible from various footpaths and bridleways with views towards the site [Plan K]. This would include views from footpaths forming part of the revised route of the proposed Glyndwr's Way National Trail [Plan O] and from the Cambrian Way [Doc 1 (ES Vol 4 Figs 14, 11.1, 11.3)]. However, although the turbines would have a significant visual effect from some locations, due to careful siting and design the relative scale and form of the turbines would be seen as a compatible and positive element in the landscape, and would not have a harmful effect. In views towards the site from the Snowdonia National Park to the north [Photo 3 Figs 1-4] the proposed turbines would have a minor visual effect and again would not harm visual amenity. The detailed noise assessment establishes that noise from the turbines would not significantly affect users' enjoyment of rights of way. Accordingly, the proposed development would not affect the recreational use or enjoyment of any part of the locality with public access. In any event, the evidence of objectors (Woods CCW, MacDonnell CUM) indicates that there is little public usage of local footpaths.

8.9.7 In summary, there is no real evidence to support the contention that the construction of the Nant Carfan scheme would have any significant adverse effect on tourism. Recreational use of public rights of way and the amenity of common land in the vicinity would not be unacceptably adversely affected. The proposal would not involve conflict with prevailing policies in respect of these matters.

POWYS COUNTY COUNCIL

8.9.8 No evidence was presented by the County Council relating to tourism and recreation.

CASE FOR THE OBJECTORS

The main points were:

CCW

8.9.9 The upland plateaux in the area of the development site provide opportunities to experience and appreciate the views of an all-round expansiveness afforded by few other areas in Wales. The plateaux are exposed, wild and open with a feeling of remoteness and they afford extensive views across the ridge tops and of higher peaks beyond [Doc 2 (CD6 Para 8.68 page 25)]. It is this special experience which is valued by recreational users of the area, and which would be unacceptably compromised by the proposed development at Nant Carfan.

- 8.9.10 Much of this upland landscape and its special qualities can be enjoyed from rights of way. In particular, the site is highly visible from the route of Glyndwr's Way National Trail, which is being actively promoted as a major walking route and encompasses some of the best scenery in upland Montgomeryshire offering the opportunity to experience wild and open upland landscapes. Views from the trail would be unacceptably harmed by the introduction of a prominent and discordant industrial element into what is currently a harmonious rural landscape [Doc 33, Photo 1 (Figs 11.1, 11.3)]. The impact of the turbines would be aggravated when seen in conjunction with those at Mynydd y Cemmaes.
- 8.9.11 Although no public rights of way run directly through the site, it is an area of moorland likely to be brought within the access land provisions of the CROW Act 2000. Under the Act there will be public access to open country which consists wholly or predominantly of mountain, moor, heath or down, as well as a right of access to common land. Moor, heath or down is not defined by the Act; but does not include land consisting of improved or semi-improved grassland. It is expected that it will take 3 - 5 years to publish the open country access maps in their final form and for the public access rights to become operative. The implementation of the Act is likely to increase opportunities for recreation across the plateau landscapes, including the site of the turbines and adjacent upland areas within its zone of visual influence [Plans B, K, N].
- 8.9.12 The CROW Act will also provide public access to the area of common land CL73 next to the site [Plan Y fig 8]. The development, if permitted, would adversely affect the openness and landscape value of the common land. It would be in conflict with structure plan Policy EC3, which applies to common land as well as locations within SLAs, as well as Policy EC7 concerning development within or adjacent to common land.
- 8.9.13 In short, the proposed development would cause serious, unacceptable harm to public enjoyment of this wild and relatively unspoilt upland landscape, public use and enjoyment which is likely to increase in the future.

CPRW

- 8.9.14 CPRW advances no evidence directly concerning the impact of the proposal on tourism or recreational activity in the area. However, in providing evidence concerning assessment of visual and landscape impact it contends that recreational users of the area should be ranked as particularly sensitive receptors where changes in a landscape are concerned [Doc 36(3)]. This should inform any assessment of visual and landscape impact of the proposal for the locality. A negative impact on recreational walking activity in the area would have adverse consequences for the rural economy, which published research confirms is significantly boosted by expenditure associated with this activity [Doc 37].

CUM

- 8.9.15 In assessing the impact of the proposal, CUM draw particular attention to the extent to which the open, uncluttered scenic qualities of the area and the tranquillity of its uplands are valued both by residents of the area and by visitors. Photographs submitted by CUM [Photo 4 Figs 1-28] demonstrate the scenic qualities and landscape context of the site and its surroundings. Footpaths, bridleways and scenic

road routes in the area all provide views of the site and its context in a dramatic and beautiful landscape. The proposed development would seriously damage these qualities, destroying a precious recreational resource which landscape policies seek to protect.

- 8.9.16 Because of the topography of the area, most footpaths in the area either descend from or rise to the hills; almost all would have views of the turbines. Some local walking routes would be affected by the turbines for much of their length. This would have a significant impact on the recreational enjoyment of these footpaths. Of particular significance in recreational terms is the impact the development would have on views from Glyndwr's Way National Trail [Photo 1 (Figs 11.1, 11.3); Photo 2 (Figs 1, 3); Photo 4 (Figs 16, 24, 25, 28)]. The primary objective of developing this was *"to develop a route which offered the public the chance to walk a path, which by virtue of its character and quality, was national, reflecting the grandest, wildest and most beautiful landscapes the nation had to offer and also the most characteristic"* (Countryside Commission: Paths, routes and trails, policies and priorities (CCP.26) 1989). The proposal would have an unacceptable visual impact on the landscape when seen from the trail.
- 8.9.17 The views from other footpaths and bridleways in the area, notably on the western side of the Nant Carfan valley [Photo 1 (Fig 11.4); Photo 2 (Fig 4); Photo 4 (Figs 5, 17-19)] and in the region of Clegyrnant to the east of the site [Photo 2 (Fig 22); Photo 4 (Figs 8, 26)], would be similarly adversely affected by the presence of the proposed turbines in the landscape. The road from Llanbrynmair through Pandy and along Nant Carfan is a popular scenic route for recreational traffic. Its scenic qualities would be marred by the presence of the turbines on top of the mountain. Combined with existing visibility of the Mynydd y Cemmaes turbines over a short stretch of this route, approximately 5 miles of the Pandy Lane would be within the visual influence of wind turbines [Doc 23(3) Fig 11]. From further south, the turbines would intrude on the longer-range views and panoramas enjoyed by users of the scenic mountain route from Llanidloes and Machynlleth to Llanbrynmair. The turbines would be visible from both of the notable viewpoints at Ffrwd Fawr and the Wynford Vaughan Thomas Memorial. [Photo 1 (Figs 11.2, 11.8, 11.11, 11.13); Photo 2 Figs 2, 8, 11, 13); Photo 4 (Fig 9)].
- 8.9.18 The appellant's assertion that wind farm developments do not harm tourism is vigorously disputed. People come to mid-Wales to enjoy the unspoilt rural scenery. Regardless of whether or not an individual perceives a wind turbine as an aesthetically pleasing design, they are completely out of place in a remote upland context and degrade the high-quality landscape. The ETSU research into attitudes to the cumulative effect of wind turbines cannot be relied upon. First-hand experience of this exercise by members of CUM reveals that it involved a very small number of participants, unscientifically selected, whose opinions were not sought or recorded objectively [Doc 46]. As an exercise conducted by the wind farm industry, it is not impartial research.

Other objectors

- 8.9.19 Mr E Jones (Blaen Cwm), a member of CUM close to the site who owns a farm holiday cottage, has been informed by regular holiday users of his cottage that they will not return if the wind farm is built. He considers that the wind farm proposal would ruin his holiday business, which is vital to enable his farm to survive. He

estimates that holiday letting income alone in the area is around £60,000 a season, and believes that many other holiday businesses and tourism income in the area would be similarly affected. WTB and many companies connected with tourism consider that the increasing presence of wind farms in mid-Wales is starting to have a negative effect on tourism. Mrs F Margolis (Barlings Barn, Llanbrynmair), another local resident with a holiday cottage business, also considers that the wind farm would deter holidaymakers, who come to the area for tranquillity and unspoiled countryside.

- 8.9.20 Mrs M Rees (Dol Einion, Talyllyn) refers to the importance of views and unspoilt landscapes as one of the area's primary tourism assets, citing the significance of scenic viewpoints such as Ffrwd Fawr Pennant [Photo 1 Fig 11.8, Photo 2 Fig 8], the Wynford Vaughan Thomas Memorial [Photo 1 Fig 11.11, Photo 2 Fig 11, Photo 4 Fig 9] and Glyndwr's Way National Trail [Photo 1 Figs 11.1, 11.3; Photo 2 Figs 1, 3; Photo 4 Figs 16, 24].
- 8.9.21 Statistics compiled by mid-Wales tourism demonstrate the importance of tourism to the local economy and its dependence upon enjoyment of the natural beauty of the countryside. The 1999 statistics showed 60% of staying visitors using holiday cottages, caravans or camping, demonstrating a strong preference for close contact with the natural surroundings. Countryside activities such as walking were overwhelmingly the things sought by those staying in mid-Wales. WTB informs the Welsh Select Committee in 1994 that 90% of visitors went to the countryside to enjoy its natural features, rather than manufactured attractions.
- 8.9.22 Wind farms soon lose their appeal to visitors as features of interest; if more than 1 or 2 are seen during the course of a visit they are no longer regarded as an attraction and come to be seen as a negative feature. The development of wind farms in the attractive countryside of mid-Wales is therefore counter-productive and should not be supported.
- 8.9.23 The Nant Carfan proposal would have an unfavourable impact on the development and enjoyment of rights of way in the area. Of particular concern was the way it would spoil the route of Glyndwr's Way, which PCC and CCW are developing as a third national trail and which has major potential to attract visitors. The wind farm would also diminish the enjoyment of wild upland areas for recreational users of the southern parts of Snowdonia National Park, which would have views of the turbines.
- 8.9.24 Mrs L Palshis (Fronlwyd Cttage, Bontdolgadfan) expresses particular concern about the implications of the proposal for recreational horse-riding in the area, particularly for visitors interested in trekking, a popular pastime in the Welsh hills. Although there are no bridleways in the immediate vicinity of the site, potential visitors to the area could be put off coming because of concern about the possible presence of turbines, in particular those wishing to take part in pony trekking. This would threaten the viability of holiday cottage and trekking holiday businesses in the area [Doc 49].
- 8.9.25 Written representations reiterate the above points, emphasising in particular the significance of country walking, riding, cycling and camping activities and holidays in the locality, taking advantage of the unspoilt scenery and extensive network of rights of way and bridleways. Enjoyment of the area in these ways would be

threatened by more wind farms, especially where turbines are close to bridleways, harming the viability of local businesses.

8.10. SITE SELECTION

CASE FOR THE APPELLANT

The main points were:

- 8.10.1 CPRW have queried the process of site selection, both in the context of the appeal and under the Town & Country Planning (Environmental Impact Assessment) Regulations 1999. Regulation 2 and Schedule 4 of the Regulations provide that an ES should include an outline of the main alternatives studied by the applicant and the main reasons for the choice eventually made. Details of the alternative sites studies were included in the ES and the site selection report provided at the request of the National Assembly [Doc. 1, Vol. 3, sect. 2.3; and Doc. 6]. It is reasonable to assume that the National Assembly were satisfied that the information was sufficient to comply with the 1999 Regulations.
- 8.10.2 The existence of an alternative site is not a reason for refusing planning permission and each application must be looked at on its own merits. The issue principally arises where the proposal is found to be contrary to the development plan and there is a need to consider if other material considerations justify an approval. One such consideration might be that there would be no alternative locations in the wider area that would be feasible, viable and cause demonstrably less environmental impact. That was the conclusion in *National Wind Power Ltd v SSETR and Teesdale DC* (CA 5079/1998) which does not assist the points made by CPRW. It should be added that there has been no suggestion from any of the inquiry parties that an alternative site exists.

CASE FOR OBJECTORS

The main points were:

CPRW

- 8.10.3 Site selection is an important factor in forming a judgement between the merits and harmful effects of a wind farm. In the *Barningham High Moor* wind farm appeal (PINS ref: APP/W1335/A/97/285005) the Inspector found that a sufficiently rigorous site analysis had not been undertaken to demonstrate whether no alternatives existed. Thus it could not be shown there were material considerations which might override the site's unsuitability on landscape and amenity grounds. This was upheld in the subsequent legal challenge on 29 October 1999.
- 8.10.4 Since the time of that appeal the Environmental Impact Assessment Regulations have been amended in the form of the 1999 Regulations and the accompanying Circular (WOC 11/99). The Circular indicates in paragraph 83 that the consideration of alternative sites is good practice and can be a material consideration. In the case of NC there is little information in the ES to show how the site selection process was undertaken and why it was chosen in preference to others. It is concluded that the appellant has failed to demonstrate the need to select the particular NC site. Thus, they cannot show reason based on lack of alternatives as to why it should be

approved in the face of contrary evidence that it would cause demonstrable harm to interests of acknowledged importance.

8.11. OTHER REPRESENTATIONS

The main points made in oral evidence by interested persons are summarised below. Some of the points have also been referred to under specific topic headings.

Mr R Coombs

- 8.11.1 Mr Coombs and his family live at The Lodge on the side road to Clegyrnant at the foot of Mynydd Rhiw Saeson. He considers the objective to move to renewable energy is laudable, but not at the expense of destruction of the aesthetic environment. The case for wind energy is over-stated. It is claimed that NC would provide enough energy for the domestic requirements of 14,500 households plus a large reduction in pollution emissions that would come from coal fired stations. However, the energy output from NC over the whole 25 years of its life can be created by somewhere like the DRAX power station in only 21 days, or even Aberthaw in 58 days [Doc. 53]. If the actual emissions by the conventional power station over that 21 day period are considered to be saved by the wind farm replacement spread over its 25 year life span, it can be shown the daily saving in pollutants is virtually zero.
- 8.11.2 His second point is that mid-Wales already has too many wind farms, all in beautiful countryside, whereas many other countries erect them around industrialised coastal areas. A study of the location of wind farms in the UK as at April 1999 shows only 10 in England and Scotland as a whole, yet Wales alone has 12 [Plan T].

Mrs L Palshis

- 8.11.3 Mrs Palshis lives at Fronlwyd Cottage, Bontdolgadfan, which is about 7km south of the wind farm site. She and others are interested in establishing horse riding activities in the area for business and pleasure. An Internet search has shown the variety of ways this can be achieved and also some of the problems if horses encounter wind turbines [Doc. 49]. The area around Llanbryn-mair is perfect for horse riding or trekking, with its beautiful countryside and network of old roads, tracks and bridleways. Farmers would be able to diversify to support horse activities and other aspects of eco-tourism. This potential would be destroyed if turbines and their associated roads and infrastructure were allowed to proliferate over the hills. Apart from the visual intrusion affecting the lives of both local families and visitors, there is a safety concern that horses could be frightened by the appearance, noise and shadow effects of the turbines. Although some horses might get used to them over time, they would still disturb new animals or those of visitors.

Mr W Marden

- 8.11.4 Mr Wilfred Marden is an architect living at Yr Efail, Pandy, on the valley road some 2km from the southern edge of the wind farm site. He objects to the proposal for a variety of reasons. First, it is not in sympathy with the form and character of the landscape in which it is set and would simply desecrate an ancient hill-top with an intensive industrial development. The landscape is sensitive, being a remote, unspoilt upland moor and part of a SLA where priority should be given to its protection. It is

a PSP requirement that the wind farm must be satisfactorily integrated into the landscape. This means that it must be absorbed or incorporated as part of the natural landscape. This is just not possible with industrial structures each 76m high. The scheme is contrary to the advice in PPW, TAN8 and the landscape and wind farm policies in the MLP. It is also of note that the wind farm would be seen from the Snowdonia National Park and harm its setting. The adverse impact of this scheme is quite unacceptable and alternative renewable energy sources such as photovoltaics, hydro schemes and biomass projects offer a much better prospect for safeguarding the overall environment, if people are also encouraged to stop wasting energy at home and in their everyday lives.

- 8.11.5 Second, the site is not well placed to best exploit the wind resource and there is insufficient evidence to show that the appellants have properly assessed the wind regime at the site. There is also a lack of information about prevailing wind conditions and the possible effect of a wind shadow from the higher ground to the north and east which could reduce the operating efficiency of the wind farm. To this latter shortcoming must be added the fact that the planning application itself is devoid of important details on the design and appearance of the turbine clusters.
- 8.11.6 Third, Mr Marden believes there would be adverse impact on wildlife habitats, including that of the black grouse, and also on sites of archaeological interest. It is difficult to accept that the construction operations for the wind farm, using large machines and vehicles, would not cause substantial harm to the vegetation and drainage of the moorland habitat and to archaeology; and the huge foundations of the turbines will apparently be left in the ground when the wind farm is decommissioned. Birds will suffer, as the turbines will affect certain flight paths and wintering areas.
- 8.11.7 Fourth, policy EC20 i) of the PSP and policy ENV30 of the MLP indicate that power transmission line details should be submitted with an application and that wind farms will be refused where transmission lines would have a significantly detrimental effect on the environment. There is no proper information on the route to the grid connection, with just a broad corridor several kilometres wide being indicated. It is wrong not to consider the transmission line route at the inquiry, because of the implications for the overall scheme if the route was not acceptable and of the visual and environmental impact of an overhead line.

Mrs M Jones

- 8.11.8 Mrs Marlis Jones is a farmer's wife and retired teacher who resides at Rhyd-y-Meirch which is in the valley of Clegyrnant below the eastern side of the appeal site. She was consulted about the Cemmaes wind farm before its construction and felt it would provide a clean form of energy for many years and that it would be the only site in Wales. She deeply regrets that the reality is quite different to that perception and is disappointed that the implications were not fully explained to people at the time. Now, local people are referred to as 'receptors' as if they are machines with no feelings, and ever bigger turbines are spreading all over the hills, with more and more planned. Travelling in any direction from Llanbrynmair a wind farm is seen, with their drunken blades spinning or often at a standstill which emphasises their ineffectuality.
- 8.11.9 Mrs Jones is extremely sad that following the past loss of several valleys to flooding for water supply purposes the intention now is to desecrate the hills and subject

people to turbine noise and visual intrusion. The natural beauty of Montgomeryshire is one of its main assets and this and its tranquillity will be destroyed in this area by the Nant Carfan scheme. The huge turbines will be quite alien to the landscape and stick up like death's fingers. There are already too many wind farms in Wales, they provide virtually no employment, and are the least appropriate form of renewable energy as far as environmental impact is concerned.

Mrs S Jones

- 8.11.10 Mrs Susan Jones who is a veterinary surgeon, her husband and 3 children live at the hill farm known as Clegyrnant, below the eastern side of the appeal site. Their stock comprises 1000 ewes and 30 cows. The house looks towards Mynydd Rhiw-Saeson and the nearest turbine would be 1300m away. All the forward facing windows would give a view of 5 turbines. Much of the farm's land is above the house towards Esgair y Llyn and Llyn Gwyddior, with views of the appeal site and from the Berwyns across to Cadair Idris. The view of the high turbines and their noise would dominate this scene.
- 8.11.11 The Jones family are very concerned about the noise impact and there seem to be no predictions over a wind speed of 12m/second. Even when the noise level does not exceed the background level, the alien drone and thump of the turbines will still be noticed against the natural sounds of the area, as people who live close to existing wind farms have experienced. A low level but variable noise can be extremely irritating when it is there all the time, day and night. The developers suggest that turbine design has improved and they are now quiet, but experience shows that they deteriorate rapidly with age and the authorities have little interest in resolving any problem.
- 8.11.12 The reason that the Jones family chose to live at Clegyrnant was the environment, the views and the peace. This quality of life would be destroyed by the sight and sound of a wind farm at Nant Carfan.
- 8.11.13 Like most hill farms the profit margins are very tight and Mrs Jones has always assumed the farm business could be supported with tourism, but this would not be viable if the quality of the countryside which they come to experience is lost to the visual intrusion and drone of a wind farm. The surrounding area has remained largely unexploited, wild and beautiful, and farmers are continually reminded that such countryside must be protected and enhanced for future generations. Despite this, energy use and abuse is everywhere especially in urban areas, with no thought for the future, whereas conservation of energy use would lead to conservation of the environment if there was sufficient political will to achieve it. It is quite wrong that Powergen who as a company are one of the greatest producers of greenhouse gases in the UK [Doc. 44(A)], should be allowed to destroy a landscape of such character and beauty.

Mrs F Margolis

- 8.11.14 Mrs Felicity Margolis and her husband live in Barlings Barn at Caeau-gleision, about 1.2km south of the edge of the wind farm site and east of the Pandy road. Over the past 18 years they have restored the building and built up a holiday business which provides employment and commercial benefits for the locality. The beauty, peace and quiet which the visitors seek will be seriously damaged by the extra traffic, power

lines and noise arising from the wind farm during and after its construction. Terrestrial wind power is a short sighted policy which benefits only a few financially and provides a negligible input into the national grid, whilst irrevocably harming the unique landscape.

Ms M Rees

- 8.11.15 Bearing in mind the attitude of the USA to pollution and its concentration on economic matters, it seems a noble but perhaps puerile gesture for Montgomeryshire to continue to allow wind farms at considerable risk to its economy. The tragedy is that the gesture has done nothing to reduce global warming and in the UK all the wind farms produce only 0.2% of our electricity. It follows that they will never get near replacing conventional power sources and around 12,500 turbines would be needed to replace a Drax type power station. This is against a background of a 4% annual increase in electricity consumption annually in the UK. Land based wind power is a misguided Government policy.
- 8.11.16 The community area of Llanbrynmair has topographical richness and abounds in ancient history, including its vibrant social history. The appeal site is within the Western Uplands SLA and overlooked from Snowdonia National Park. The wedge of mountain where the wind farm would be would be in direct line with Llanbrynmair village and 10 of the turbines would be seen, together with the Cemmaes wind farm just to the west. From further afield some 25% of the area up to 20km away would have views of many turbines, with a severe effect on the valley to the south leading through Pennant to Staylitttle. Many of the homes in that area will have direct views towards the site and other features such as Frrwyd Fawr, Glyndwr's Way, Nant Hir, the Wynford Vaughan Thomas Memorial and the National Park mountains will also suffer the visual effects of the scheme. The visual impact with other existing wind farms would be disastrous.
- 8.11.17 The MLP recognises the importance of the landscape and amenity and seeks to safeguard them by a raft of policies that would be infringed by the NC proposal. Given that there is no overwhelming need for the wind farm in energy terms it is clear that those safeguarding policies should prevail over the intrusive appearance, noise, shadow flicker and reflected light arising from the proposal. This includes the specific harm to the significant number of dwellings scattered around the foot of the site.
- 8.11.18 In considering the effect of the proposal on tourism, the 1999 statistics compiled by Mid Wales Tourism showed the majority of staying visitors used self catering accommodation, caravans or camping, showing a preference for close contact with the natural surroundings. Virtually all those questioned sought countryside activities, with 29% citing walking as the preferred recreation. In 1994 the WTB told the Welsh Select Committee that the vast majority of visitors went to the countryside to enjoy natural features, rather than attractions such as theme parks. They considered wind farms soon lost any attraction for visitors when more than 1 or 2 were seen during a visit. It can be seen that to develop industrial wind farms in the attractive 'natural' landscape of mid-Wales is counter-productive. A particular point is that the Nant Carfan wind farm would seriously compromise the newly designated Glyndwr's Way National Trail, a large section of which lies within its ZVI. The erection of wind farms on prominent plateau summits is simply not compatible with the objectives of the development plan and CCW to conserve natural beauty, landscape integrity and the peaceful enjoyment of the countryside. The southern part of the National Park

which is used by many individuals and groups to experience wild open country would be diminished by views over the modern, man made structures of the wind farm. In respect of farming interests, schemes such as NC may benefit a few, but can never offer the extent of diversification and employment benefits arising from tourism.

- 8.11.19 It is contended that the important habitats on the appeal site will be severely disrupted by the construction of the turbines and roads, and it is difficult to assess the hydrological changes which will take place until after the event. Streams from the site descend to the Dovey Valley catchment area which is of international importance for wildlife. Birds of prey will find their hunting grounds depleted and may suffer blade strike
- 8.11.20 The Nant Carfan locality should be left alone. It offers the solitude and peace that is the essential contribution which such areas can make to the tumultuous world of today. The objections of the Member of Parliament and local Assembly Member show they know where the views of most people in Montgomeryshire lie and at another extreme the local landscape has inspired poets such as R S Thomas.

Mrs G White

- 8.11.21 Mrs Glenys White resides at Pandy Cottage off the Pandy road to the south of the site. She considers that there are already too many wind farms in the area and that the insignificant contribution to electricity supply does not warrant the disruption of the area. She prefers mountains to look like mountains and not "albino porcupines." The suggestion that because of Cemmaes wind farm another will be acceptable is nonsense, as it will serve to add to the violation of the area not enhance it. From the north side of her house she can see 5 Cemmaes turbines, although usually only 1 or 2 are working at best. The photomontages of the turbines provided by the appellant are misleading as in reality they would appear much bigger and clearer, as do those at Cemmaes even at over 12km away near Machynlleth. She is also concerned that she will experience noise disturbance from the turbines. Other concerns are the effect on tourism in the area and on property prices.

Mrs H P Jones

- 8.11.22 This evidence was given by Mrs M Jones on behalf of Mrs H P Jones who lives in Llanbrynmair. She is not directly affected by the NC scheme, but is concerned about its impact on families living near to the site. She believes the scheme is divisive by allowing certain farms to benefit financially whilst other only suffer the adverse effects. It has also created bad feeling in the local community. The fact that there are existing wind farms creates a precedent for new schemes and for extensions of existing sites. There will be a cumulative impact which must be addressed. There are other natural resources which can be exploited for electricity without affecting peoples' lives to the same extent as this wind farm scheme.

Mrs J Macdonnell

- 8.11.23 Mrs Julie Macdonnell is the Vice Chairperson of CUM but also gave evidence in a personal capacity. She and her family live at Blaen Tafolog on the Tafolog Valley road just to the north-west of the appeal site. The Cemmaes wind farm is about 1.8km away to the west. After occupying her house about 5 years ago she became aware of noise from that wind farm, which increases when mist descends. The noise

was invasive and its droning frequency changed with the wind direction, being relieved to some extent when blowing from the east. The NC proposal would now bring turbines to some 900m from the house. She loves to walk on the hill tops and enjoy the expansive panoramas. She believes the proposal would destroy the peaceful enjoyment of her home and the superb nearby upland areas where it would become difficult to avoid seeing turbines in every vista.

Mrs H Hughes

- 8.11.24 This evidence was given by Mrs Susan Jones on behalf of Mrs Helen Hughes. Mrs Hughes has lived in the locality all her life and resides at Bodhyfryd in Pandy. She suffers from ill health so spends a lot of time at home, but is able to take walks on some days. She is particularly sensitive to noise and would find the visual and aural intrusion which would arise from the wind farm unbearable. People who visit her appreciate the beauty, peace and tranquillity of the surroundings which is a priceless asset in the modern world. Developers regard the beautiful landscape as insignificant and some local people take it for granted, whereas it is a heritage which must be safeguarded.

Mr E Jones

- 8.11.25 Mr Edward Jones lives at Blaen-y-Cwm which is at the northern end of the valley of the Clegyrnant and about 800m east of the nearest NC turbine position. He is a farmer who has diversified by converting an old stable into a 3 bedroom holiday cottage. His visitors come to enjoy the unspoilt valley and its surrounding scenery, but they will be able to see and hear the proposed wind farm. Mr Jones has been told by his guests that they will not return if the wind farm goes ahead, which would have a drastic financial effect on his farm income. He also believes the wind farm development would reduce property values in the area. In his written representations Mr Jones also submitted several letters from Wales Holidays of Newtown, who let holiday accommodation in the area, and from persons who have stayed at his holiday cottage supporting his views.

Mr A L Burton

- 8.11.26 Mr Burton is a Civil Engineer working in wind energy and supports the NC development. He lives at Tyn-yr-eithin near the Carno wind farm. He notes the national aim to cut emissions by 20% by 2010 and the modest target of generating 10% of UK electricity from renewables by the same date. If that renewables target were applied to Wales alone then it would be equivalent to 175MW of average output or up to 600MW in terms of rated output. The question of which renewable energy sources could be exploited at reasonable cost to meet this demand must be examined. A study undertaken in Gwynedd in 1996 which covered on-shore wind, hydro and fuel wood showed that, despite the exclusion of sensitive landscape areas, the dominant exploitable energy source was wind power. Objectors at the NC inquiry have generally supported the 10% target, yet do not show how this will be achieved if wind farms as the major contributor are excluded from the uplands and most of the coastal areas on environmental grounds. If the 10% target, or even higher future targets, are to be achieved then it must be accepted that sites with a relatively limited environmental impact such as NC should be allowed. The charge that Montgomeryshire has more than its share of wind farms ignores the fact that the area

is particularly well suited for such development with its exposed plateaux and sparse population.

- 8.11.27 Mr Burton commented on 3 other matters. First, he considers that the number of objectors to NC give a misleading impression of the public reaction to wind farms. Surveys at other wind farm sites have shown that most residents are in favour of such schemes in Wales. Second, on the matter of the alleged unpredictable output from wind farms it is in fact possible to predict this accurately some hours ahead and the standard deviation of the error is much greater for the National Grid prediction of national demand. The firm power of a wind farm is roughly equal to its capacity factor. The third point is that there is a moral imperative to act now to reduce rising emissions and tackle the effects of climate change all over the world for the sake of future generations.

Written representations

- 8.11.28 About 405 written representations were submitted to the inquiry, of which all but 3 objected to the proposal. Many of the same persons had also written to Powys CC at the initial application stage. In addition, a petition with 348 signatories was submitted to PCC and forwarded to PINS in December 2000. This petition included 130 signatories who were stated to live in the Llanbrynmair area and people were asked to sign if they thought “we have enough wind turbines in Montgomeryshire and do not want a wind farm at Nant Carfan, Llanbrynmair.”
- 8.11.29 The representations generally covered the same range of topic issues which were discussed at the inquiry and it is not necessary to repeat them here. However, it is appropriate to make particular reference to some of the correspondence from certain organisations and local residents, and some additional matters, raised in the following representations.
1. Mrs S Jones of Clegyrnant submitted a copy of the WTB policy on wind farms. It should be noted this is identical to that submitted in evidence by the appellant’s planning witness [Doc. 8, App. PW(S)2].
 2. In a letter dated 15 November 2000 Llanbrynmair Community Council stated that they objected to the Nant Carfan wind farm. The reasons given were the concerns of residents, the visual impact on the landscape, and the cumulative effects of wind farms on the landscape and the feeling that Montgomeryshire is becoming over-subscribed with wind farms. In a letter of 26 April 2000, Banwy Community Council, through whose area the trunk road access to the site would be located, raise no objection to the access. They state that they do not wish to make any observations on the wind farm proposal itself.
 3. In a letter of 13 April 2000, the Open Spaces Society object to the proposal as it is close to common land and would adversely affect its special amenity value.
 4. An objection is made on behalf of Sir Watkin Williams Wynn who owns land to the north-east of the site including the lakes, Llyn Coch-Hwyad and Llyn Gwyddior. He considers the proposal would be an incongruous feature in the landscape, have a detrimental effect on the Black Grouse Project Area, create unnatural noise, and cause detrimental shadow flicker.

5. The above 2 lakes are also fished by the Llanbrynmair Angling Club who have canvassed their members about the proposal. The results showed 18 objecting members and 2 members who did not object. The Secretary, Mr Harry Hughes of Bodfyfryd, Pandy, has also written individually. He states that he already has to suffer the sight and sound of the Cemmaes wind farm at his home; and he enjoys fishing on the lakes where there is peaceful and tranquil atmosphere which he finds is second to none. He is horrified that a wind farm is proposed at Nant Carfan close to the lakes.
6. The Ramblers Association consider that the impact of the proposal would be contrary to PSP policies EC3 and EC7. They say it would also have an adverse effect on Glyndwr's Way which encompasses some of the best scenery in upland Montgomeryshire offering the opportunity to experience wild and open upland landscapes. The wind farm would be seen from the National Trail and would introduce a prominent and discordant industrial element into the harmonious and tranquil rural landscape where people go for quiet contemplation and to experience the wonders and rigours of the wild [Doc. 44(G)].
7. Mr D S Williams who lives about 1km from the nearest eastern turbine positions at Ty-Newydd, Blaen y Cwm, objects on the basis of his belief that the environment, ecology and wild life of the area would be harmed. His living standards would be severely reduced and the value of property would fall.
8. Denise Rees and Michael Rochford of The Cow House, Blaen y Cwm, which is less than 1km from the nearest turbine position on the eastern side of the site, state that their property would be one of the worst affected as it has its main windows facing towards the Nant Carfan ridge. Their quality of life would be adversely affected. The proposal would harm the archaeology of the site which is important to the heritage and history of Wales. Other areas should be developed before the special landscape of Montgomeryshire which is so attractive to tourists and the local economy is lost.
9. Mr B J Laister lives at Cwmpenllydan which is about 2.3km south-east of the nearest turbine position, but situated at around 320m AOD according to the OS map. He has submitted a lengthy written statement, supported by various documents [Doc. 50]. He raises several issues. First, he objects to the visual intrusion and dominance of the wind farm as seen from his property which has its main views to the west [Doc. 50/1]. In particular, he would see both Cemmaes and Nant Carfan together and the high level of his property means he would see the turbines at their full height [Doc. 50/2]. The wireframe impression submitted by the developer is misleading in respect of the size and clarity of the turbines [Doc. 50/3], as he can see a single sheep on the appeal site clearly. Second, he believes there will be noise disturbance. This will be exacerbated by the air stream effect of currents which will siphon noise to all the properties at the head of the Clegyrnant valley formed by an Ice Age dish, as well as the noise enhancement of mist and frost which often fills the valley. The prevailing wind is from the west [Doc. 50/4]. At present there is an extremely quiet noise environment at his property, although he can sometimes hear the Cemmaes wind farm which demonstrates how far sound actually travels in the locality. Third, although he accepts that distance would mitigate any shadow flicker he is concerned about the disturbing effect of light flashing off the turbine blades, especially in the setting sun. Fourth he queries whether the turbines would have

to be made more visible by placing aviation warning lights on them due to their height. Finally, he objects to the prospect of the power transmission lines passing near his property [Doc. 50/5] and their visual impact, bearing in mind his property is not connected to the grid.

10. It is necessary to record that the RSPB decided not to appear at the inquiry and their submissions have been treated as written representations. They originally objected to the proposal on grounds related to the impact on black grouse which is a priority species listed in the UK Biodiversity Action Plan. The site falls within one of the six key areas for those birds in Wales and is close to a focal lek (display ground). Discussions were held with Powergen and others with regard to re-siting turbine 10 and producing a habitat management plan in order to mitigate the effects of the wind farm and access tracks. This was completed to the satisfaction of the RSPB and on 5 February 2001 they wrote to withdraw their objection [Doc. 24]. The final section 106 management agreement is dated 27 February 2001 [Doc. 54].
11. One of the letters of support was from a firm based in Bangor who manufacture steel towers for wind turbines. This was accompanied by 64 'standard' letters of support signed by employees of the firm. The letter emphasises the economic and employment benefits of a continuing demand for the product and the need to promote renewable energy. It is stated that wind turbines are elegant and graceful structures which can enhance the appearance of certain landscapes.

9. INQUIRY SESSION ON CUMULATIVE EFFECTS

9.1. INTRODUCTION

- 9.1.1 This chapter reports on the evidence and associated submissions made by each of the parties appearing at the inquiry in respect of the potential cumulative effects of each wind farm proposal in relation to various environmental or socio-economic issues and policies. The bulk of the cumulative evidence concerned landscape and visual amenity. The assessment of those matters has involved both the consideration of each proposal with existing and approved wind farms in the area, and in the various combinations which could arise if each or both of the other 2 proposals are added. At the individual inquiry sessions the applicants chose to include existing wind farms in the area as part of the baseline conditions for assessing the landscape and visual impact of their particular proposal. Others have left those existing schemes to be included as part of their cumulative assessment presented to the final inquiry session. This includes Powys CC who, of course, did not appear at the first 2 inquiries.
- 9.1.2 The baseline conditions used for their landscape and amenity assessments by the main parties have included some or all of the following 7 existing and 1 approved wind farm schemes [Plan A, Fig.4]. The blade tip heights of the turbines, as given by the Consultant for Powys CC, are stated in brackets.
- Cemmaes – 24 turbines existing at Cemmaes A (41.5m) + 6 turbines (54.65m) approved known as Cemmaes B. (To the east of Cemmaes and north of Llanbrynmair).
- Llandinam (P & L) – 103 turbines existing at Penrhyddlan & Llidiartywaun (46m) (south of Llandinam and 6.5km east of Llanidloes).
- Carno – 56 turbines existing at Trannon Moor to the west of Carno village (53.5m).
- Machynlleth (CAT) – Single existing turbine (60.5m) at the Centre for Alternative Technology (Mynydd Glandulas, north-east of Machynlleth).
- Bryn Titli – 22 existing turbines at Bryn Titli, about 4km south-east of Llangurig (48.5m).
- Rheidol – 8 existing turbines at Rheidol, north-west of Devil’s Bridge (46.5m).
- Mynydd Gorddu – 19 existing turbines at Mynydd Gorddu, 1.5km south-east of Tal-y-Bont (55.5m).
- 9.1.3 CCW have also included a proposed extension to the Llandinam wind farm and a proposal for Cemmaes C which had not been determined at the time of the inquiry. However, they decided in respect of Cemmaes C to use the combination of the existing turbines at Cemmaes A and the approved construction of Cemmaes B for its assessment [Doc. 18, para. 3.1.2 and Table 3; and Plan B]. CPRW did not produce an assessment of their own, but they advocate the inclusion of other possible schemes as described in their evidence below.

- 9.1.4 At the inquiry the main parties agreed that it was convenient to refer to the ZVI diagrams prepared for Powys CC [Plan A, Figs. 5 – 11] to avoid repetition with the submissions of others.

9.2. CASE FOR POWYS COUNTY COUNCIL

The main points were:

Landscape and visual amenity

- 9.2.1 The decision by the Council not to appear at the MC and CL inquiries was taken before the 3 inquiries were co-joined. This was not decided by the National Assembly until the MC inquiry had commenced. Presented with that scenario and the decision to hold a cumulative effects session, the Council commissioned Consultants to carry out a study of the cumulative effects on landscape and visual amenity arising from the 3 proposed wind farms.
- 9.2.2 It is worth noting that the Local Planning Authority felt obliged to commission Consultants, but it arguably did so from the only ‘neutral’ standpoint of any of the parties appearing at the inquiries as the Council had not taken a view on whether or not it was in favour or against any of the proposals.
- 9.2.3 The Consultants’ report [Doc. 13A] was presented to the Planning Committee on 5 January 2001. Among its conclusions was the statement:
- “It is not considered that individually any of the proposed wind farms would cause unacceptable significant cumulative effects on the landscape and/or visual amenity of the study area. However, having regard to the combination of all three, or any two of the proposals, the assessment demonstrates that there would be least significant effects arising from MC and NC.”*
- 9.2.4 At their meeting the Council considered the report from the Consultants and also a report from the Shire Planning Officer [Doc. 13B]. He recommended that an objection be made to CL on the basis of unacceptable cumulative landscape and visual impact; and that no objection be made to either NC and/or MC on landscape or visual impact grounds, either individually or in association with each other. However, the Planning Committee decided not to accept his recommendation and resolved:
- “that the Consultants’ report be supported and utilised as the County Council’s position statement at the public inquiry”* [Doc. 13C].
- 9.2.5 The method of assessment [Doc. 14A] used a study area based on 20km radius from each of the 3 wind farm proposals. The ZVIs do not show visibility beyond this distance, but the viewpoint assessment has considered data beyond this. A selection of 26 viewpoints chosen from the 45 viewpoints in the environmental statements for each of the planning applications has been used, plus 2 additional viewpoints [Doc. 14C].
- 9.2.6 The assessment has based sensitivity to change, magnitude of change, and significance of landscape and visual effects, on pre-defined criteria. Landscape and

visual amenity sensitivity are defined as *high, medium, low or negligible*; and magnitude of change uses the terms *substantial, moderate, slight or negligible*, all based on interpretation of various parameters. The significance of any cumulative landscape or visual effect has been assessed as *major, moderate or minor* in terms of a matrix combining the landscape and visual sensitivity and predicted magnitude of change [Doc. 14A, Table 2.1]. Where an effect has been classified as *major* or *major/moderate* it is considered to be equivalent to significant effects as referred to in the Environmental Impact Assessment Regulations 1999.

- 9.2.7 It is considered that none of the proposals would cause significant effects during their construction phase or any significant effects on the landscape fabric. 10 landscape character areas have been identified [Doc. 14B and Plan A, Fig. 3], with sensitivity to change varying between high and medium.
- 9.2.8 A ZVI has been prepared to show how many wind farms are potentially visible throughout the study area [Plan A, Fig. 4]. There are no locations where all 7 existing wind farms may be visible, with 5 only potentially visible in very restricted summit areas north of Plynlimon. There is scattered and fragmented visibility of 3 – 4 wind farms occurring on the high ground of the study area. More extensive areas from where 2 and 1 wind farms may be seen occur throughout the remainder of the study area, apart from the north-east where there is no visibility.
- 9.2.9 The ZVI indicates there may be visibility of existing turbines over 72,434ha out of a total of 198,415ha in the study area, that is 36.5% of the study area. It follows that there is currently no visibility of wind farms from 125,981ha or 63.5% of the study area.
- 9.2.10 A detailed analysis of the ZVIs to show those areas affected by each of the proposals has been undertaken, both individually and in combination [Doc. 15A and Plan A, Figs. 5 – 11]. MC may be visible from scattered areas throughout the north-east and south of the study area totalling 9,599ha of which about 43.6% (4,186ha) occurs in areas where existing wind farms may already be visible. CL may be seen from scattered areas, totalling 12,172ha, across the north, east and south of the study area, with about 39.6% (4,815ha) of the total in areas where existing wind farms may be visible. NC may be visible from areas scattered across the north-west part of the study area, mainly in a line between Llanfair Caereinion and Clywedog, totalling some 19,188ha of which 5,070ha is in areas where no existing wind farms are visible. Of the total visibility area, about 73.6% (14,118ha) would be in areas from which existing wind farms are visible, mainly Cemmaes and the CAT turbine.
- 9.2.11 Both NC and CL in combination may be visible from fragmented parts of the study area of which 69.9% (3,029ha) occurs in areas where existing wind farms may be visible. MC and NC may be visible from limited parts of the study area of which 17.8% (29ha) is in areas where existing schemes are visible. CL and MC would be visible from the centre of the study area and scattered parts to the north-east and south. About 42.3% (6,395ha) of the total area would be in areas where existing wind farms are visible. All 3 proposals may be visible in a few fragmented parts of the study area occurring from the north-east to the south-west. As these locations are associated with the higher summits affording extensive visibility, about 61.4% (2,293ha) of the total occurs in areas where existing wind farms may be seen.

- 9.2.12 The area of visual influence of each wind farm proposal which overlaps with areas of existing wind turbine influence can be set out with the new area extending the area of visual influence into areas currently not affected by existing turbines to show the overall effects of potential visibility [Doc. 15B]. The figures can be compared with the overall area of visual influence of existing wind farms [see para. 9.2.9 above].
- 9.2.13 The ZVI analysis provides an indication of the potential visibility of each proposal, but it must be interpreted in relation to the sensitive receptors in the area. There would be some effects on the landscape and amenity of Snowdonia National Park from NC, and from a very few isolated areas the combination of NC + CL. Most of these areas are on high summits where existing wind farms may be visible. All of the proposals would be, individually or in combination, seen from Glyndwr's Way. The closest section near Llanbrynmair has been analysed more closely and there would be cumulative effects arising from the 3 proposals either singly or in combination of up to 2 wind farms. However, at no location in this section would all 3 schemes be seen.
- 9.2.14 None of the town centres in the study area would be affected. MC may be seen with other existing schemes from the southern outskirts of Newtown, and NC may be seen from close to Machynlleth from where Cemmaes and the CAT turbine may also be seen. NC may also be seen in the context of existing turbines from Llanbrynmair. From parts of Carno where wind farms are visible, the combination of NC+ CL may also be seen. MC and CL would be seen from Cefn Coch and Adfa.
- 9.2.15 From the roads the cumulative effects would be limited, with the main concentration along the A470 between Carno and Llanbrynmair. Both NC and CL may be visible along a short section of main road through Carno, and NC may be seen with other wind farms over a 3km section south-east of Llanbrynmair and a shorter section to the south-east of Carno. CL may be seen with other existing wind farms over 2 sections of main road to the north-west of Carno. CL may be seen from a 6km section of the A483 south of Newtown from where existing sites may also be seen. Stretches of the A470 west of Newtown, through Llandinam and south of Llanidloes, totalling 9km, may give views of MC where no existing wind farms are visible.
- 9.2.16 With regard to the viewpoint assessment, their numbered locations are marked on all the ZVIs [Plan A, Figs. 4 – 13]. Each has been given a location name and a prefix MC, CL or NC denoting the separate proposed wind farms [Doc. 14C]. A summary of the assessment and conclusions on the effects on visual amenity at each viewpoint has been prepared [Doc 17]. It should be noted that the Tables 3.1 and 3.2 in the Consultant's report [Doc. 13A] have been refined. A document has been prepared which lists those refinements and also summarises the significant cumulative landscape and visual effects found in the viewpoint assessment [Doc. 16].
- 9.2.17 Significant cumulative effects on the landscape in the *major* and *major/moderate* categories have been identified arising from NC in the context of existing wind farms within 5km of the site. These are the summit of Foel Dugod in the National Park (NC14), 2 locations close to Glyndwr's Way near Llanbrynmair (NC1 and 3), and on the Cemmaes plateau (CL7). Significant effects on visual amenity arising from NC would occur close to Glyndwr's Way.
- 9.2.18 The potential for significant cumulative effects on both landscape and visual amenity arising from CL would be on Glyndwr's Way to the north-west of Llanbrynmair (NC1), on Garreg-hir (NC6), on the road between Carno and Cefn Coch

(NC10/MC4), at Llyn Mawr (CL11), and Carreg y Big (CL14). There would also be landscape effects at Llyn Hir (CL17).

- 9.2.19 At MC there would be potentially significant effects on both landscape and amenity at Garreg-hir and on landscape on the Carno – Cefn Coch road.
- 9.2.20 The combination of NC and CL would affect Glyndwr’s Way, the Carno – Cefn Coch Road, and the Cemmaes plateau for both landscape and visual amenity. There would also be landscape effects on the Foel Dinas summit (NC15) and Llyn Hir. The combination of NC and MC would only have a significant landscape effect on Cemmaes (CL7) and no effect on the visual amenity of any of the viewpoints studied. The combination of CL and MC would have both landscape and visual amenity effects on Garreg-hir, the villages of Cefn Coch and Adfa, and the Carno – Cefn Coch road. There would also be landscape effects at Llyn Hir.
- 9.2.21 The combination of all 3 wind farm proposals would have both landscape and visual effects on the Cemmaes plateau; and landscape effects at Llyn Hir and at the viewpoint east of Llandinam (MC14). It can be seen that the cumulative effects attributable specifically to all 3 wind farms together are limited because there are few areas where all of them would be seen. However, if all 3 schemes were built, there would be significant landscape effects at 13 of the 28 viewpoints studied, and on visual amenity at 10 of the 28 viewpoints.
- 9.2.22 From the overall assessment it is concluded that each of the individual schemes would give rise to some significant cumulative effects, either in the context of existing wind farm visibility or in combination with each other. The landscape and visual effects on key sensitive receptors, including the National Park, Glyndwr’s Way, towns and villages, and the main traffic and tourist road network, from any of the schemes are limited and only affect small areas. It is not considered that individually any of the proposals would cause unacceptable effects on landscape or amenity.
- 9.2.23 In the case of the combination of all 3 schemes, or any 2 of them, the viewpoint assessment indicates that the least significant effects would arise from a combination of NC and MC. This is mainly because the surrounding topography contains visibility. The most significant cumulative effects would arise from the combination of NC and CL. This is largely because of their visibility from the high ground on both sides of the Afon Carno valley, where there are several sensitive receptors, and existing wind farms are visible. In the case of CL and MC there would be more significant effects on landscape than on visual amenity, because those areas are mainly on the plateaux and adjacent hills where there are few sensitive receptors. The effects of the combination of all 3 wind farms on the few areas concerned would be mainly concentrated on the hills adjacent to the Afon Carno valley, around Cefn Coch and Adfa, and the plateaux and high summits in the north-west part of the study area.

9.3. CASE FOR RES (Mynydd Clogau)

The main points were:

Landscape and visual amenity

- 9.3.1 The evidence for RES deals with the cumulative landscape and visual effects of the MC proposal, assessed against existing/permitted wind farms [Plan C, Fig. 1] and in combination with the CL and NC proposals, or both. The context for the MC site is the complex and diverse Montgomeryshire landscape, where the intimate scale and character of the valleys are in stark contrast to the open, large scale plateau landscapes. The MC site itself enjoys considerable visual containment, being on the lower northern plateau slopes. It is screened by the higher ground to the south-east and south, and to the west by Garreg-hir and its environs. The main zone of visibility of MC is, therefore, to the north and north-east.
- 9.3.2 The method of cumulative assessment has involved a desk study, ZVI analysis, and field study of selected viewpoints [Doc. 3]. It examined the cumulative effects of more than 1 wind farm on the landscape or area in terms of intervisibility and proliferation. The ZVI diagrams prepared for Powys CC [Plan A] are useful in showing the potential visual overlap between the 3 inquiry schemes and the extent of the influence of existing wind farms. A ZVI has also been prepared showing the visual influence of existing/permitted wind farms overlain with that for MC [Plan C, Fig. 2]; with other ZVIs for blade tips and nacelles visible within 30km radius [Plan C, Figs. 3 and 4]. A 20km radius is generally agreed as the maximum worthwhile ZVI for assessment.
- 9.3.3 An initial view on potential cumulative visibility was gained by a desk study of all the ES viewpoints for the MC, CL and NC schemes to assess whether turbines would be visible or not [Doc. 4, App. 1, Tables 1.1 & 1.2] and a comparison with ZVI data. Those viewpoints from which no intervisibility would occur between MC and other existing or proposed wind farms were identified and a list of selected viewpoints made where intervisibility would occur to a greater or lesser degree [Doc. 4, App. 1, Tables 1.3; and Plan C, Fig. 5]. A field assessment of selected viewpoints was then undertaken to examine the magnitude and significance of the effects. The viewpoints have been illustrated in the ES documents, but further photographs and wire-lines for a representative number of viewpoints have been prepared [Photo. 1]. An assessment has also been carried out of the effects of sequential visibility when travelling through the area by road.
- 9.3.4 The assessment of magnitude and significance has used 4 categories from major/moderate magnitude where there is a significant cumulative effect, through minor magnitude with no significant effect, to negligible magnitude and no effect where there is no cumulative effect. The visual analysis reviewed the ZVIs and related zones to various named locations [Doc. 4, App. 4].
- 9.3.5 It showed the main zone of visibility of existing wind farms lies roughly to the south-west of a line from Newtown around to Dinas Mawddy, with MC outside the zone and having its main zones of visibility to the north and north-east, thus limiting the opportunity for intervisibility between it and existing schemes. Short to medium views to the south, south-west and south-east are curtailed by topography. In more distant views beyond 10km there could intervisibility from the slopes above

Llandinam and Newtown, to the north-west and to the north, but the distances involved make it unlikely that significant effects would occur.

- 9.3.6 There are few areas where MC and NC would be seen together and these are generally distant, mainly some 12km to the north and to the south of Dolanog. In combination with CL there would be medium views to the north, north-west and north-east, including the areas around Cefn Coch, Adfa and New Mills. In medium to long views both wind farms might be seen from the slopes above Llandinam and Newtown and above Llanidloes. Similar distant views might occur to the north-west around Carnedd y Cylch and Carreg y Fran. In the case of all 3 MC, CL and NC wind farms, the areas of view would be limited to fragmented areas of high ground to the south, north-west and west. Most of these areas are beyond 10km from MC and it is unlikely that intervisibility and cumulative effects would be registered as a significant or dominant aspect of the view.
- 9.3.7 The desk analysis of viewpoints in the ES for each scheme suggested that there are 24 or about half of the total where intervisibility may occur between MC and other existing/permitted wind farms [Doc. 4, App. 1, Table 1.3 and Plan C, Fig. 5]. The theoretical visibility from each of the viewpoints has been summarised [Doc. 4, App. 2, Tables 2.1 & 2.2]. Although some of the viewpoints may experience a significant effect from the proximity of a wind farm this is not necessarily a cumulative effect. The assessment of magnitude and significance of effect that would result between MC and existing/permitted wind farms or in combination with CL and NC or both [Doc. 4, App. 3, Table 3.1] shows there would be effects of *moderate/ major* magnitude at 16 of the 24 viewpoints. This would result in intervisibility being such that blade movement would be a distinctive element of the view.
- 9.3.8 With MC and existing/permitted schemes alone on no occasion does a *major* cumulative effect arise, thus illustrating the visual containment of MC. With MC/NC and existing/permitted wind farms there is only 1 *moderate* effect (Garreg-hir) and 1 major effect at Cemmaes wind farm which is not a direct result of MC itself.
- 9.3.9 With MC/CL and existing/permitted schemes, there are 11 viewpoints where a *major* or *moderate/major* cumulative effect arises and 3 which are *moderate*. This is caused mainly by the relatively close proximity to the viewpoints of MC to CL and the level of intervisibility between them. 3 of the viewpoints are of no significant cumulative effect and 5 are of *negligible* magnitude.
- 9.3.10 It is considered that Garreg-hir is the only viewpoint where significant cumulative effects arise with all 4 wind farms combinations assessed, but this is acceptable. MC alone is a relatively small scheme and occupies a narrow 8 degree angle of view from Garreg-hir. While intervisibility with existing wind farms does occur they are mainly mitigated by distance being beyond 13km away, except for Carno which is 7.7km away. Also, the MC scheme is in scale with the landscape and forms a balanced, well contained composition. For the combination of MC + NC the latter is remote and makes no contribution to the effect from Garreg-hir. For MC + CL together most turbines would be viewed against a plateau backdrop rather than against the sky and within an expansive landscape, so having little effect on the moorland landscape character.
- 9.3.11 In transient views travelling through the area by road, the cumulative effect made by MC on the A489 and A470 would be negligible. In the various combinations with

other proposals there could be an increase in the number a visible blade tips but this would be a *minor* effect and not significant. MC would make no difference to views from Glyndwr's Way. With NC added there would be an increase in turbine visibility, but it would be *negligible*. With the addition of CL there would be an increased local awareness from Glyndwr's Way, but this would be *minor*. There would be a *moderate* effect from the Cefn Coch – Carno road arising from MC alone, and with the addition of NC. With MC + CL the increase in turbine visibility would have a significant effect of *major* magnitude, but of short duration.

- 9.3.12 It is concluded that MC on its own or with CL and NC would not cause an unacceptable cumulative effect. It does not contribute to the short to medium distance views of existing turbines to the south and west, although to the north and north-east it would be seen in its own right. In longer distance views from plateaux to the south, west, north-west and north, visibility is intermittent due to higher landform, the undulating nature of the plateaux and surface features such as forestry. The landscape is of sufficient scale to absorb the wind farm proposals and the design and siting of MC mitigates its effects and angle of view. The conclusion is similar to that of Powys CC in respect of MC and there is no justification for a refusal of MC on cumulative grounds.
- 9.3.13 Although the RES study has been carried out independently, it is worth noting that its conclusions are generally consistent with those of the Consultants for Powergen and NWP. The RES assessment has also shown that the MC turbines would have no significant visual impact on the main trunk road corridors or on Glyndwr's Way. The transient views from minor roads would be of short distance and duration. The evidence of Powys CC suggests that even where there are stretches of the A470 where MC blade tips might be seen they would be too distant to be of significance.
- 9.3.14 In respect of the landscape and amenity evidence of CCW, the conclusions of Mr Edwards must be viewed in the knowledge that he was instructed very late in the inquiry process, he had not visited all of the MC viewpoints and could not recall all of those he had visited. The evidence of Dr Miller was concerned with the submission of a mass of raw data [Doc. 18] without any qualitative assessment. It also included the Llandinam wind farm extension which ran contrary to the Inspector's wishes expressed at the pre-Inquiry meeting and would make it difficult to relate the overall data to the 3 proposals before the inquiry. The evidence also arrived very late and could not be fully taken into account by the other witnesses for CCW attempting some form of qualitative analysis. The CCW Area Officer did accept that MC located on the plateau margin falls into an area largely of improved pasture in contrast to the open nature of the rest of the plateau. It is contended that the methodical landscape evidence of RES should be preferred to that of CCW.

Planning policy

- 9.3.15 It is generally agreed that the MLP should be given considerable weight. In its policy ENV24 it has added 'proliferation' to cumulative effects, intervisibility and precedent. This is the effect upon the character of an area from wind farms within it, whether they are intervisible or not, and could include the perception of a person travelling through the area. Cumulative effects have generally been regarded as relevant where more than a single wind farm is seen from a fixed point. The aim has often been to secure a reasonable degree of separation, but proliferation might be taken to suggest that this might not be a positive aim if it resulted in the lateral spread

of wind farms across the entire upland area, so that even where a wind farm was not read with others in the same view there would be few areas where a view of at least one could be avoided. Even so, it is considered that intervisibility remains the dominant issue in the determination of cumulative effects.

- 9.3.16 MLP policy ENV25 makes it plain that it expects proposals to be cumulatively assessed in terms of existing and approved wind farms in an agreed zone, with such zones having at least a 15km radius. PSP policy EC20 merely states that special consideration will be given to the cumulative effects of wind farm proposals. It is clear that the MLP policy approach only envisages implemented or approved schemes being assessed, which is in line with the Inspector's view expressed at the Pre-inquiry Meeting, with the added unusual circumstances that he is also required to examine the 3 proposals in combination.
- 9.3.17 The decisions at other wind farm inquiries to date have not given a clear direction on cumulative effects, but a selection of decisions has been examined to give some indication of how the issue has been addressed [Sites shown in Doc. 2, App. E]. On Anglesey 2 wind farms of 24 and 15 turbines have been approved 4km apart [MC Doc. 16/ 24 and 25]. In Cornwall a wind farm was refused some 2km from an existing wind farm and existing pylons and radio masts, largely because the landscape concerned could not absorb it [Doc. 2, App. A]. The original Cemmaes A scheme has been given approval for extension [MC Doc. 16/17] which suggests the cumulative effect was considered to be less than if the new turbines had been located further away. In south Cumbria sites at Kirby Moor, Harlock Hill and at Askham [Doc. 2, App. B] have been approved, although close together and all appearing in certain distant views, including land in a National Park. However, a further site at Gunson Height was refused partly due to cumulative effects [Doc. 2, App. C] as was one at Lowick, although its cumulative effect was regarded as minor [Doc. 2, App. D]. In north Cumbria, 3 sites have been allowed with only some 5km between them. An appeal for the Lowca site [MC Doc. 16/18] was then allowed only 7km away from 2 of the other sites and 5km from the other. All 4 sites are intervisible from high ground. In a case of a single turbine at Blood Hill in East Anglia [MC Doc. 16/19] a short distance from an existing wind farm there was no concern about cumulative effects. Recent cases in Yorkshire were decided by considering them separately and then in the light of cumulative effects, with one approved at Easington [Doc. 2, App. E] and the other at Hollym refused.
- 9.3.18 It is considered that the latter case above is the correct way to determine the current MC, CL and NC applications as the decision is for the National Assembly and not the Inspector. First, the Inspector should assess each scheme on its own merits, including the cumulative effects of each in terms of existing and approved wind farms in the area. Even if he considers any or all of the schemes unacceptable he must then go on to assess the cumulative effects in all possible combinations in case the Assembly disagrees with his recommendations on the individual schemes.
- 9.3.19 Future NFFO schemes might have some relevance in the context of possible future patterns of development, but there is a widespread distribution of contracted schemes throughout Wales and it is unlikely that in the future there will be a particular concentration of further schemes in this part of Wales. Indeed, at present only 2 wind farms are within 15km of MC, with Cemmaes being 16km away and Bryn Titli 24km away. In policy terms it is noted that the RES landscape evidence concludes that MC is acceptable in terms of cumulative effects and proliferation, even if all 3 proposals

are approved. This is similar to Powys CC who have concluded that the cumulative effects are not unacceptable.

- 9.3.20 In dealing with cumulative effects policies, it has already been noted that policy ENV25 specifically refers to the cumulative impact of a proposal in combination with other existing or approved wind farms, thereby excluding undetermined proposals and those only at NFFO contract stage. The landscape assessment findings of RES show that Garreg-hir is the only one of 58 viewpoints where a significant effect would arise with existing wind farms and MC. However, this would be acceptable, mainly due to the narrow angle of view of the MC turbines and the fact that intervisibility with existing schemes is mitigated by remoteness from MC and Garreg-hir. The overall conclusion is that there would be no unacceptable effect from all wind farm combinations involving MC, largely due to its visual containment and small scale.

9.4. CASE FOR NWP (Cwm Llwyd)

The main points were:

Landscape and visual amenity

- 9.4.1 The approach and method of assessment considers potential cumulative effects on landscape character and visual amenity over a study area of 20km radius [Doc. 6], involving the 3 proposed schemes and existing and permitted schemes [Doc. 7A, Tables 1 – 3]. The assessment covered 4 out of 7 scenarios of various wind farm combinations. Scenarios 1 – 3 are the existing wind farms + CL, NC and MC respectively; scenario 4 is existing wind farms + CL + NC; 5 is existing + CL + MC; 6 is existing + NC + MC; and 7 is existing + CL + NC + MC. To avoid duplication with the evidence of other developers, the assessment has only considered scenarios 1, 4, 5 and 7.
- 9.4.2 The method of assessing magnitude of change and significance of effect is similar to that used for the individual inquiry session [Doc. CL 23/2], but a 5 point scale has been used ranging between *very substantial* and *negligible*. The landscape analysis has examined the key characteristics, designations, quality and receptors, with quality defined as *exceptional*, *high*, *medium* and *low* [Doc. 7A, Table 4]. In the visual assessment, due to the similarities between the ZVIs produced for Powys CC and those of the applicant, only the Figures prepared for the Council have been used [Doc. 9 and Plan A].
- 9.4.3 A viewpoint analysis has been undertaken of 44 of the 49 viewpoints used in the CL, NC and MC sessions and for certain residential properties [Docs. 8/2 and 8/3]. The locations of the viewpoints appear on the ZVIs. The residential viewpoint analysis involved selected properties within 5km of CL or MC [Plan H and Doc. 8/5] and the survey results have been summarised [Doc. 8/6] and wireframe views from the properties prepared [Photo. 2].
- 9.4.4 There would be no significant effects on the character and quality of 5 of the 10 landscape types arising from any of the scenarios. The plateaux and hillslopes & saddles types would experience significant effects from all of the scenarios; the plateau margins and scarps would be significantly affected by scenarios 4 and 7; the

shallow rolling hills by scenarios 5 and 7; and the narrow valleys by scenarios 4 and 7 [Doc. 7A, Table 5].

- 9.4.5 The Snowdonia National Park would be affected by scenarios 4 and 7 due to elevated views and the proximity to the NC site. However, this would only relate to a small area and would not be sufficient to have a cumulative effect on the character and quality of the Park as a whole.
- 9.4.6 All 4 scenarios would affect the Western Uplands SLA, with scenario 1 affecting the Mynydd-yr-Hendre plateau and parts of the hillslopes and saddles to the west of the CL site. Scenario 4 would have a significant effect on the central and southern sections of the Mynydd-yr-Hendre plateau, un-forested areas of the Mynydd Rhiw Saeson plateau, parts of the plateau margins and scarp landscapes, localised areas of hillslopes and saddles, and the Cwm Tafalog and Afon Twymyn valleys. Scenario 5 would have a significant effect on Mynydd-yr-Hendre plateau and localised areas of nearby hillslopes and saddles and shallow rolling hills. Scenario 7 would have a significant effect on the Mynydd-yr-Hendre plateau and the other landscape types mentioned in respect of scenario 4. Scenario 1 would have the least significant effect on the SLA, scenario 5 would be more intense in its effects, but would still be localised; scenario 4 would have more extensive effects due to the distance between CL and NC; and scenario 7 would have the greatest cumulative effect on the SLA. It is not considered there would be any significant effects on the Berwyns or Upper Severn Valley SLAs.
- 9.4.7 With regard to the CROW Act 2000, there is no open land over 600m in the vicinity of the wind farm sites. Part of the upland peaks in the National Park are over 600m, represented by viewpoint NC9a, but are some 13km from NC and turbines would be inconspicuous in the wide panorama. It is considered the magnitude of change involved would be *negligible* for scenarios 1 and 5 and *slight* for scenarios 4 and 7. There is potential for significant effects on several of the upland common land areas [Doc. 7, Table 6], with scenario 1 affecting 5 commons, scenario 4 affecting 6 commons, scenario 5 affecting 6, and scenario 7 affecting 8.
- 9.4.8 The effects on linear route receptors in the form of A and B roads will be limited [Doc. 7B]. There would be a *moderate* magnitude of change at CL2/NC7 and CL3 on the A470 near Carno, but only *moderate* effects, with no significant cumulative effects. In general the B roads also offer only limited views with a magnitude of change which is *slight, negligible or none*. There is an exception with NC2 south of Llanbrymair where a *moderate* magnitude of change is predicted for scenarios 4 and 7, with a significant cumulative effect.
- 9.4.9 Many of the minor roads have roadside hedges or banks which screen views, but the analysis of the Carno – Cefn Coch viewpoints shows scenarios 1 and 4 would have a significant cumulative effect on visual amenity over a 4km stretch east of the CL site; and scenarios 5 and 7 would have a greater effect along some 7km where first the CL and then the MC turbines would be seen. There would be significant effects on rights of way, particularly within about 3km of the scenarios involving one or more of the CL or MC sites. However, none of the scenarios would have a significant effect on Glyndwr’s Way, the Severn Way or the Cambrian Way.
- 9.4.10 Of 3 scenic viewpoints examined at Garreg-hir, Ffrwyd Fawr and the Wynford Vaughan Thomas Memorial, only NC would be visible from the second and third of

these points so there is no potential for cumulative effects at them as the result of 2 or more wind farms. All 3 proposals would be seen from Garreg-hir and although other existing wind farms can be seen already, scenarios 1 and 4 would have a *substantial* effect on visual amenity due to CL. With the addition of MC in scenarios 5 and 7, the magnitude of affect would become *very substantial*.

- 9.4.11 The CL inquiry session showed that there would be about 15 dwellings within 2km of the nearest CL turbine where residents might experience a significant effect on visual amenity. Scenario 4 would not change this situation, as both NC and CL cannot be seen at the same time by properties local to either site. The survey of dwellings close to the CL and MC sites [Doc. 8, App. 6] shows that for scenarios 5 and 7 there are about 21 properties not covered by the earlier survey where residents would experience a significant effect on visual amenity. A few properties in Adfa would also be affected and some which would not be affected by just the CL turbines in scenario 1.
- 9.4.12 The overriding impression of the analysis of cumulative effects is that scenario 4 (existing + CL + NC) would have the most significant landscape effects and a significant cumulative effect on the Western Uplands SLA. Scenario 5 (existing + CL + MC) has more localised landscape effects, but more significant effects on the visual amenity of residents. Scenario 7 involving all 3 proposals has both significant landscape and visual amenity effects, whilst scenario 1 (existing + CL) has the least effects of the 4 scenarios.
- 9.4.13 In considering the effects, it is unlikely that a proposal to site one or more new wind farms would not result in significant effects, but there is no consensus of opinion on the threshold above which the effects are unacceptably adverse. Those who like turbines are likely to accept much greater changes to their landscape and visual amenity than those who do not. This positive or negative valency is an important factor, as is time since people may change their opinions as a result of experience and understanding of a particular scenario. Public attitude surveys have tended to show that most people have a positive valency to wind farms once they are built [Doc. CL23/8 and Doc. 5/4].
- 9.4.14 The Western Uplands SLA has a complex and robust landscape with clear separation between the upland and lowland areas. The uplands are relatively large scale, with existing wind farms, forestry plantations and few settlements. Existing upland wind farms are sited where they are not visible from much of the lowlands, apart from Cemmaes which can be seen from the Dovey Valley and areas east of the site. The choice of upland plateau for the 3 wind farm proposals would continue to ensure that there are few views of turbines from the lowlands where most of the roads and settlements are found.
- 9.4.15 In the upland views of the proposed turbines they are generally seen as distant features in a panorama or seen in the confines of the plateau on which they would be located. If one or more of the proposals were allowed, there would still be large areas of the uplands left free of turbines and the distances between those areas and wind farm sites is such that there would not be a significant cumulative effect on their character and quality. It is concluded that scenarios 1, 4, 5 and 7 would not have an unacceptable cumulative effect on the SLA

- 9.4.16 It has been concluded that a number of dwellings local to CL and MC would experience significant effects on visual amenity as a result of scenarios 1, 5 and 7. However, as no assessment has been made of NC or MC for residential amenity, no comparison can be made with scenarios 2, 3 and 6.
- 9.4.17 In respect of the cumulative effects evidence produced by other parties, there is no need to comment further on the stance of CPRW which is fundamentally opposed to turbines in rural Wales. CCW produced 4 witnesses with little discernible linkage between the evidence of each of them. Their ZVI information included the proposed Llandinam extension so is difficult to reconcile with those produced by Powys CC and acknowledged by the 3 wind farm applicants. It is submitted that the Powys CC ZVIs [Plan A] should be preferred to those of CCW and their self-obscuring colours [Plan B].
- 9.4.18 The planning evidence of CCW offers nothing new to assist deliberation of the issues. The evidence of the CCW Area Officer is clearly based on strong feelings about protecting the plateaux areas, but requires careful consideration of the views expressed about the negative impact of agricultural improvements, plantations and reservoirs. The evidence reflects the CCW's 1999 policy document which seems to oppose wind farms in a wide variety of areas in Wales, which is inconsistent with national advice and local planning policies. The quality of remoteness is emphasised by CCW, but CL is bisected by a road and the extent of land improvement on the Mynydd yr Hendre plateau further reduces the perceived qualities of remoteness and wildness emphasised as important by CCW. The fourth witness for CCW who had been instructed very late, had only visited a few viewpoints and had undertaken no independent landscape and visual assessment. His evidence was little more than a stream of individual consciousness and should carry little weight.
- 9.4.19 As to the landscape professionals who gave evidence for the applicants and Powys CC, there were few differences and an extreme coincidence of opinion on all material issues relating to landscape and visual effects, even though independently formed and with some differences in approach. In relation to the combination of CL with one of the other 2 projects, it was the Powys CC witness's view that a landscape and visual 'threshold' would be approached beyond which questions of acceptability might arise. However, she did not say that any such threshold would be crossed and this was the same position with a combination of all 3 projects. It must follow that the position of Powys CC through their witness is that there is no cumulative landscape or amenity objection to CL or to any combination of 2 of the projects, including CL, or to the combination of all 3 projects.
- 9.4.20 The landscape evidence for NWP has shown that there would be significant effects of CL in combination with either of the other 2 proposals and of all 3 if permitted, but that the effects are not unacceptable on cumulative grounds.

Planning Policy and Renewable Energy

- 9.4.21 It is submitted that the combination of CL with either of the other schemes or in combination with both of them would be consistent with Structure and Local Plan policies and there is no national, or other advice to offset those findings.
- 9.4.22 It is important to appreciate that cumulative effects can be both positive and negative and the recent CEWT report provides guidance on the planning factors to be taken

into account [Doc. 5/3]. The cumulative effects comprise the combined effects of proposals on the environmental, social and economic resources of an area. This is reflected in the criteria of PSP policy EC20 which is generally supportive of wind farms. Of those criteria it is contended that the only potential for an adverse effect arises from the landscape and amenity issue. The landscape evidence of NWP has shown there would be significant effects, but that they would not be so unacceptable as to override the general support for renewable energy in policy EC20 of the development plan.

- 9.4.23 As with the individual inquiry and noted in the landscape and amenity evidence, the question of valency is material as much depends on the perception of wind farms by the individual as acceptable or not. Since the strength of evidence is that most people do find them acceptable, this must be considered together with the permissive nature of PSP policy EC20 and MLP policy ENV3.
- 9.4.24 In the emerging MLP, policy ENV24 deals with proliferation. In its modified form the reasoned justification indicates that the landscape can only accommodate a small number of new wind farms and for the future a proliferation of them should be prevented. It is policy ENV25 which sets out the main tests of acceptability in cumulative terms, although the main concern is visual impact and overall environmental quality. Having regard to the conclusions reached by the landscape witness for NWP it has been submitted that the cumulative impact of any or all of the proposals taken with existing schemes is not so significantly detrimental to overall environmental quality that a refusal of planning permission is justified
- 9.4.25 It is acknowledged that it has been difficult to ascertain a policy position from Powys CC, but their witness was clearly aware of the MLA and the MLP and PSP policies when preparing her evidence. There is also the resolution of the Planning Committee at their January 2001 meeting to support the Consultant's report as their position statement. It must follow that the Council have no policy objections to the proposals on cumulative grounds
- 9.4.26 National planning policy makes only limited reference to cumulative effects. PPG6 in Scotland suggests it may in some circumstances be relevant and TAN8 in Wales does state that the cumulative impacts may need to be taken into account. In planning appeals the consideration of cumulative effects has concentrated on the issue of adverse landscape and visual cumulative impact, rather than comprehensive consideration of all the positive and negative effects. However, it is NWP's view that what is acceptable or unacceptable elsewhere is not material and this issue must be determined by considering the particular merits of the MC, CL and NC proposals.
- 9.4.27 In the Welsh context, the National Assembly has a statutory role under Section 121 of the Government of Wales Act 1998 to promote sustainable development. In its adopted sustainable development scheme "Learning to Live Differently" [CL Doc 19(2)] the Assembly is committed to climate protection, minimising harmful emissions and promoting use of sustainable natural resources. It is an aim in paragraph 5.4 of the scheme to grasp growth opportunities in key sectors such as renewable energy. Recent National Assembly debates and resolutions have recognised the major opportunities in Wales for a dynamic renewable energy industry and the considerable opportunities for more electricity to be produced by onshore wind, and called for positive co-operation to advance the industry [CL Docs 17/11, 17/12].

- 9.4.28 Significant weight must be attached to UK energy policy and the targets of 5% of electricity being met by renewables by 2003 and 10% by 2010. It is clear from the renewables obligation [CL Doc 5(CD26)] that the Government expects a substantial contribution towards these targets to come from onshore wind. Taken together the MC, CL and NC proposals would significantly assist in the implementation of the Government's strategy. There would also be a positive cumulative effect in displacing emissions normally generated by burning fossil fuels, thus assisting in the implementation of the UK Climate Change Programme and the National Assembly's sustainable development scheme.
- 9.4.29 Moreover, the Government's advancement of the date for achieving a 10% contribution by renewables from the initial date of 2025 to the current target of 2010 indicate the increased priority being placed on the development of renewable energy schemes. Recent Government pronouncements [CL Doc 5(CD25, 26)] also reflect this increased drive towards achieving its stated goals. The more positive attitude towards renewable energy developments in the recent NPPG6 for Scotland [CL Doc 4(CD13)] clearly reflects greater Government emphasis in this direction.
- 9.4.30 It is also important to remember the Government's view that schemes should not be dismissed on the basis that the individual contribution made towards attaining national objectives and targets would be quite small. Each scheme is important to cumulative progress. Government policy is geared to encouraging all schemes that would contribute to meeting overall targets.
- 9.4.31 The overview of cumulative issues in the CEWT report [Doc 5/3] lists areas of interest in its Box 2.2 under global environmental sustainability, local environmental quality and socio-economic categories. The first category is related to energy resources and pollution effects.
- 9.4.32 At present there are 15 operational wind farms in Wales [Doc 5/1], which contribute about 2.5% of its total electricity consumption. It is estimated that the total proportion of renewable electricity in Wales is around 4%, with the major contributors being wind power and the 2 large hydro-electric plants at Rheidol and Dolgarrog. The 10% by 2010 UK target for electricity generation is part of the UK's obligation to reduce greenhouse gas emissions, which has been carried forward by the National Assembly sustainable development scheme.
- 9.4.33 No separate targets for renewable energy in Wales have yet been produced, but if it was in line with the UK percentage targets then along with the existing 4% a further 6% would be required by 2010 (or at least 1,000,000 MWh per year). Taking account of the likely contribution of on-shore wind to this target in Wales, around 250MW (installed capacity) of wind farms could be needed over the next 9 years [Doc 40/1]. The MC, CL and NC schemes together would provide about 62MW of installed capacity, of which CL's contribution would be some 30MW.
- 9.4.34 CL would increase the installed capacity in Powys from some 82MW to 112MW, increasing annual wind power energy production from 200GWh (35% of the County's annual electricity supply) to 275GWh (48%). The scheme would, on average, supply the annual domestic needs of nearly 19,000 homes.

- 9.4.35 In terms of contribution to greenhouse gas emissions targets, the scheme would offset around 67,000 tonnes of CO₂ emissions, 785 tonnes of SO₂ and 235 tonnes of nitrogen oxides each year [Doc 40/2].
- 9.4.36 There would also be a cumulative benefit to the local economy from each of the windfarm proposals arising from direct benefits to landowners, services, contractors and the community at large.
- 9.4.37 CL would provide short term investment during construction in the region and/or Wales to a value of around £6,250,000. Current revenue to the regional economy from existing wind farms is estimated to approach £1,000,000 per annum. Each of the proposed wind farms would add to this; in the case of CL this could be around £400,000 per year in the form of local maintenance/management, services, rentals and community and environmental contributions.
- 9.4.38 About 50 households in Powys are directly associated with existing wind farms (landowners, employees, maintenance); CL would increase this by about 16. Other local people and businesses would also benefit from the greater presence of the wind farm industry in the area.
- 9.4.39 In Powys NWP already supports tourist facilities and an agreement has been prepared in association with the CL project to provide funding towards tourist information facilities [CL Doc 52(2)]. NWP also contributes to the Powys Energy Agency to promote renewable energy with an aim to meet all of the county's energy needs from such sources.
- 9.4.40 There will also be an increased contribution to the education and awareness of renewable energy locally as a result of CL, through NWP's contributions to environmental education in conjunction with its presence in a locality. This is in line with the Environment Education Council for Wales' aim to promote this in the quest for sustainable development.
- 9.4.41 With regard to cumulative effects on amenity in terms of recreational opportunity and tourism, much depends on the perception of the users of rights of way and viewpoints. The available evidence shows that the majority of the public has a positive attitude to wind farms [CL Doc 23(8)]. This is illustrated by a Scottish Executive survey [Doc 5/4], which shows that 69% of respondents would either be not very or not at all concerned about another wind farm in their area, and that many people generally consider the appropriate location for windfarms to be high on hills.
- 9.4.42 The inclusion of wind farm images and information on tourism promotional leaflets also supports the view that wind turbines have a positive image in a tourism context. NWP's offer concerning a renewable energy centre in Carno in association with the CL proposal would significantly enhance the provision of visitor facilities in the area.
- 9.4.43 NWP considers that no cumulative effect issues arise in terms of other aspects of the CL proposal, such as traffic and access, noise, archaeology, ecology or ornithology.
- 9.4.44 In summary, UK energy policy as interpreted into planning policy favours renewable energy projects unless they would cause unacceptable harm to interests of acknowledged importance. Thus the desirability of exploiting sustainable energy resources must be weighed against any adverse landscape, visual or other effects.

NWP conclude that any negative effects of the 3 proposals would not be so adverse as to result in conflict with the development plan, and that the positive cumulative effects of the proposals outweigh any perceived adverse effects. In cumulative terms, the CL proposal would be acceptable in combination with either or both of the other two wind farm proposals.

9.5 CASE FOR POWERGEN (Nant Carfan).

The main points were:

Renewable Energy and Socio-Economic Benefits

- 9.5.1 The thrust and emphasis of national energy policy as it relates to renewable energy sources and the attainment of Government targets for renewable energy provision and greenhouse gas emissions savings are important material considerations. PowerGen fully concurs with NWP's submissions as to the substance, The cumulative contribution of the NC scheme towards these targets is a benefit of the development, to be weighed against any adverse effects.
- 9.5.2 As the CEWT report [Doc 5/3] states, it is only cumulatively that wind energy developments can be understood to be increasingly significant contributors to regional and national energy needs. A reduction in CO₂ emissions and other associated pollutants will be a positive cumulative effect at the national/global scale.
- 9.5.3 The CEWT report [Doc 5/3] also recognises the cumulative economic benefits of wind energy development at both national and local level. The local and regional economic benefits of the NC proposal and possible assistance with local community initiatives, identified in the detailed evidence given in relation to the individual implications of the scheme, are valuable in their own right and are also cumulatively significant when added to those of other wind farm proposals in the area.

Landscape and visual amenity

- 9.5.4 The effect of NC on its own and with existing wind farms has been dealt with at the NC inquiry session and the cumulative effects evidence covers the situation with NC and the MC and CL proposals. The approach involved consideration of the ES documents submitted in respect of each application and the 3 Landscape Consultants involved for each of the applicants met to agree a common approach, as far as possible, whilst leaving each to develop their own case [Doc. 10A].
- 9.5.5 The assessment undertaken has taken account of several elements of landscape policy and guidance in PPW, PSP and MLP. These are concerned with whether or not there are significant adverse effects in respect of landscape quality, the aim to maintain overall environmental quality, the character and quality of the SLA, and the avoidance of wind farm proliferation. The key issues relate to cumulative effects with respect to landscape character and visual amenity, including the relationship with residents, persons involved in recreation on foot, horse or vehicle or engaged in other forms of travel and in work, and with designated areas. The issues need to bear in mind the potential to reverse the effects, sustainability and other material considerations.

- 9.5.6 It is important to note that the NC site lies some 10km and 14km from the CL and MC sites respectively and so cumulative effects including those proposals are likely to be limited. The addition of NC to the CL proposal would bring some additional visual influence, but chiefly to those areas already the subject of existing wind farms and in the northern part of the landscape. Taken with MC, the NC proposal would bring added influence into the valley landscape south of Llanbrynmair and across to Talerddig, onto the fringe of the National Park, and on the slopes along the A470 above Carno. The influence of wind farms is already felt in most of these areas, notably the Cemmaes scheme.
- 9.5.7 An important cumulative effect is the incidence of development perceptions from fixed viewpoints where NC is seen with MC and/or CL. Tables have been prepared to show the NC viewpoints from which CL and/or MC would be seen to some degree [Doc. 10B, App. 1]; the CL and MC viewpoints from which NC would be visible, with estimates of magnitude of change [Doc. 10B, App. 2]; and estimates of combined magnitude and significance for the 3 sets of relevant viewpoints [Doc. 10B, Apps. 3 – 5]. Wireframe information was added to the ES viewpoint data to assist with the judgements made on the fixed viewpoints [Photo. 4].
- 9.5.8 The incidence of views when NC would be seen together with CL and/or MC does not arise with any significance other than from Glyndwr's Way and Cemmaes wind farm (NC1/NC3/CL7), Garreg-hir (NC6/CL1/MC1), the Carno – Llanfair Caereinion road (NC10) and possibly MC10 north-west of Aberhafesp on the same road.
- 9.5.9 From Glyndwr's Way to the south-west and south-east the local presence of NC would not render it unacceptable. A large scale element would be introduced into a large scale landscape whose character has been shaped locally by afforestation and the existing Cemmaes wind farm. In overall terms the plateau landform would continue to be the dominant landscape influence together with the moorland mosaic. Although comprised of tall elements, the overall form of the wind farm would be seen as having a horizontal emphasis with a high degree of visual permeability. It would be congruent with its elevated, wind swept location and become a focal point on the ridge in part of the view, but without dominating the wider panorama or overwhelming the viewer. It would be a component of appropriate scale in the landscape and not be 'out of place'. It would have a positive image which would be acceptable both in landscape and visual terms.
- 9.5.10 From NC6, NC10 and MC4, the presence of NC would be much reduced given the distance. From MC4 it would be barely perceptible and from NC6 it would extend laterally and potentially intensify the perception of turbines in a distant part of the upland plateau, where Cemmaes already exerts a small scale influence. However, NC would represent only a minor addition and affect a narrow section of view. When discernible, NC would appear as a compact and well balanced group against a backdrop of land which would assist its integration into the landscape as a minor element in a distant scene. The impression would tend towards neutral and be of low magnitude. Together with MC and CL there would be a significant combined effect, but the contribution of NC would be limited. Overall, it is considered that the cumulative effect arising at Garreg-hir would not be unacceptable and all 3 proposed wind farms would be commensurate in scale with the wider landscape. CL and MC would be strongly felt, but appear controlled, balanced and logical without overwhelming the viewer. The wider upland plateau would continue to dominate and

the turbines would appear integrated rather than imposed. From NC10 a similar conclusion can be drawn.

- 9.5.11 Whilst the presence of NC when viewed from Garreg-hir would not be significant, the combined presence of all the proposals would have a significant effect, given their individual effects and proximity. Conversely, the effects arising with CL and MC, as seen from Mynydd y Cemmaes would not be significant, whilst the additional presence of NC would have a significant effect.
- 9.5.12 It is obvious that the farther the fixed viewpoint lies from any of the proposals, the less that proposal's potential cumulative effect and *vice versa*. Given the distances between the schemes, the implication is that the potential effect arising from NC with respect to the viewpoints and the MC and CL proposals, will be significant mainly in those areas where its individual effect would already be significant. This applies in reverse in respect of CL and MC taken with NC.
- 9.5.13 A further type of cumulative effect is that of the 3 proposals on the perception of wind turbines when passing through Mid-Wales. This will be more noticeable for those using the more elevated roads and footpaths than for those in the valleys. The length and direction of the journey and mode of travel are also important to the type of impression of the cumulative effect gained. The influence of NC on the major and minor road layout is limited [NC Plan Y, Fig. 11]. Overall, it is not considered this type of cumulative effect will necessarily be significant in respect of NC due to the Cemmaes wind farm, but it may be greater in the CL and MC proposals as there are no existing wind farms within their local landscapes of up to 5km or so. Even if NC was considered significant, much would depend from where and when NC was seen and it has been demonstrated that it is acceptable in its own right. From many of the lower locations and roads in the area it would not be seen, and where it was it would be seen as consistent with the exposed, upland landscape.
- 9.5.14 Although it is accepted that objectors may disagree, it is considered that NC on its own and with CL and MC does respect the scale of the landscape, is consistent with the grain of the landscape, and would not lead to a loss of key landscape elements or add to them. It is consistent with basic elements of landscape character, does fit in with emotive responses to the landscape experience, can be accommodated in terms of design and layout, and would be seen as an entity which is well related to its setting and pleasurable with respect to visual amenity.
- 9.5.15 Another type of, albeit minor, effect would be the extension of the chronological perception of turbines beyond the consented lifetimes of the existing wind farms. However, if any or all of the existing wind farms were decommissioned the magnitude of cumulative effects would diminish at that point through their removal.
- 9.5.16 Turning to the landscape policy and advice issues, the general quality of the SLA is assumed to be high, but in the vicinity of NC it is accepted by some of the objectors that the forestry schemes are a detractor and the Cemmaes wind farm has effected some change in local perceptions. This suggests that the tolerance of the landscape to further development is reasonably high and the addition of NC would not give rise to a significant change in terms of the landscape or designated areas, so would not compromise overall environmental quality.

- 9.5.17 The specific NC inquiry showed that NC would be appropriate and sensitive to the SLA. All 3 proposals would be located in the 2 character areas in the MLA deemed appropriate for wind farms. Given the distances between the 3 proposals, if all of them were built whilst increasing the presence of wind farms in the landscape they would not become the defining landscape characteristic of the upland or even a major defining characteristic other than in a local context. Accordingly, it is considered that proliferation would be avoided and there would be no detriment to environmental quality. Just because something can be seen it is not inevitably a detractor with an adverse effect on the landscape experience. There is a considerable body of material which demonstrates that wind farms are acceptable to the majority of the public, such as the CEWT report [Doc. 37B].
- 9.5.18 It is concluded that in terms of the key issues and the relevant planning policies, there would be no significant cumulative adverse impact on the landscape or visual amenity, and the special features of the SLA and the National Park would not be compromised.
- 9.5.19 The evidence submitted by Powys CC and the Planning Officer and Consultant's reports considered by the Planning Committee on 5 January 2001 have been assessed [Doc. 13]. The Consultant's conclusion that there would be no significant cumulative effects on landscape fabric arising from the 3 wind farm proposals is agreed. It is noted that the plateaux landscape character area is classed as of *medium* quality.
- 9.5.20 The Council's inquiry evidence shows that they have reached the same broad conclusions as the appellant in respect of 11 out of the 15 NC viewpoints for the situation of NC plus existing wind farms. In the situation of NC plus existing wind farms plus the MC and CL proposals, the Council have drawn 11 viewpoints from NC, 8 from CL and 7 from MC, plus 2 further viewpoints (Doc. 12, App. 2). They suggest that NC plus existing/approved wind farms give rise to significant landscape and/or visual effects at 4 viewpoints, CL at 7 and MC at 2. In the NC plus CL combination it is not agreed a significant landscape effect would arise at NC15 given the negligible change arising from presence of CL.
- 9.5.21 Powys CC have provided percentage figures for areas of visibility of wind farms and these have been translated into actual land areas to derive total areas of visual influence for the wind farm proposals [Doc. 11, Tables 3.1 and 3.2]. The total area over which existing turbines have influence is 72,434ha out of a study area of 198,415ha. The areas for each wind farm proposal are 27,434ha for NC, 35,376ha for CL and 28,616ha for MC. These figures can be broken down into the area which 'overlaps' with existing wind farm areas of influence and the 'new' areas of influence [Doc. 11, Table 3.3]. This shows that NC would extend the existing area by 11%, CL by 26% and MC by 22%.
- 9.5.22 It is noted that CCW make reference to the Cambrian Mountains ESA [Doc. 19], even though none of the proposed wind farms are within that area and use terminology used to describe the heart of that area, such as 'hostile', 'remote' and 'wilderness'. The NC site is in elevated upland, but is not truly remote or a wilderness. Reference has also been made to 'tranquillity', but CCW has admitted that there are no planning policies for tranquil areas or which suggest that wind farms should avoid them.

- 9.5.23 CCW have suggested that the sites of existing and proposed wind farms in the study area are all prominent and within landscapes of acknowledged importance, so the proposals will have potentially significant adverse effects on the landscape. This does not seem to recognise that the existing wind farms have been deemed acceptable in such a landscape, as indicated in the MLP and MLA, otherwise they would not have been approved. At the same time, CCW say they regard the Cemmaes wind farm and afforestation as detractors, suggesting that NC is of lesser quality than other plateau areas and more capable of accommodating further development.
- 9.5.24 The conclusion by the landscape witness for CCW that no further wind farms could be absorbed into the landscape does not reflect that of the witness for Powys CC. She did not consider that any of the individual schemes would cause unacceptable cumulative effects, a view shared by the other landscape Consultants. It is known the same CCW Consultant acted for the developers of Cemmaes wind farm and it is interesting to study some of his comments at that inquiry. These included assertions about the lack of its effect on distant landforms to the north, west and south, the landscape within 6km of the site, and designated areas; together with the mitigating effects of intervening features and the overall panorama in distant views [Doc. 12, App. 3, paras. 4.7, 4.17, 4.20 and 7.6.]. Much of the comment made could equally apply to the NC scheme.
- 9.5.25 The evidence provided by Dr Miller for CCW [Doc. 18 and Plan B] suggests in the main that NC either individually or in combination with MC would probably exert the least cumulative effect of the 3 proposals. There are 2 exceptions to this. The first is that where CL plus MC will increase the area over which turbines may be visible where none are now, NC will produce an increase in the area from which more than a single development would be seen. This is simply due to the relative proximity of Cemmaes to NC. The second exception concerns the addition of 2 developments where visibility is increased for the existing/NC/extension to Llandinam scenario. If Llandinam is excluded then the increase is greatest for existing/CL/NC. However, NC is one of the lesser contributors to cumulative effect and also it is some 25km from the Llandinam wind farm. Other conclusions in the CCW study show that NC is not a major contributor to extending areas of visibility, areas where blade movement only is seen, areas of combined views, or increasing views of turbines from minor roads.
- 9.5.26 With regard to the CUM evidence, there is little in the way of material which was not considered at the individual NC inquiry session. It is contended that on horizons turbines will be readily recognised as significantly out of scale with them, but this is not so. In essence, larger scale landscapes can more easily accommodate bigger wind farms. Sensitivity to a wind farm increases with the complexity of landform, the number of settlements, the complexity of visual composition, and the remoteness and rarity of the landscape [Doc. 12, App. 4]. However, the NC site is in a large scale, simple landscape, with few settlements and dwellings, and is not visually complex, rare or remote.
- 9.5.27 There are only very limited areas of disagreement with the landscape evidence for the MC proposal and it is noted that it confirms that the distance between that site and NC means NC would not contribute significantly to cumulative effect.
- 9.5.28 There is some disagreement with the NWP landscape evidence for the CL proposal. In the NC plus CL combination the Consultant fails to point out that of the 12

viewpoints assessed, NC could not be seen from 4 of them so any significant effects would not arise from NC. At the Garreg-hir viewpoint the change from CL+MC+NC is adjudged to be very substantial, but again the contribution of NC would be small. The Cemmaes viewpoint (CL7) is the only one where NC would make a significant contribution.

- 9.5.29 The conclusions by NWP on the effects on landscape types [Doc. 7, Table 5] raise several concerns. It is not agreed that NC would contribute to a significant effect on plateau margins and scarps, or to the change at viewpoint NC10 when that is only 400m from CL. In none of the viewpoints listed under the 'shallow rolling hills' does NC add anything to the significance of cumulative effect, and the same applies to 4 of the 7 'narrow valleys' viewpoints. There would be no direct effect on the character of this landscape type and the assessment of viewpoint NC2 as *moderate* magnitude is not accepted. Under 'broad river valleys' NC adds nothing to the significance derived from CL on its own.
- 9.5.30 When comparing the effects of the various scenarios on the Western Uplands SLA the NWP Consultant states that CL would have the least significant effects, but it is obvious that each proposal could make the same claim when compared with scenarios which add other proposed wind farms into the equation. The same reasoning applies to common land [Doc. 7, Table 6] where scenario 1 (CL alone) affects only 5 commons, whereas scenario 4 (CL+NC) affects 6 commons. On its own NC only affects 1 common.
- 9.5.31 With regard to road use it is not accepted that NC would have an effect of *moderate* magnitude on the Class II road south of Llanbrynmair, nor would there be a significant cumulative effect on the minor road through Pandy and the Cwm Tafalog valley.
- 9.5.32 In assessing the cumulative effects of the wind farm proposals there has been considerable unanimity between the independent professional judgements of the Landscape Consultants, apart from the witness for CCW, Mr Edwards. His late instruction and limited grasp of the issues which had been discussed at the inquiries suggest that his evidence is of little assistance. He also considered it appropriate to draw conclusions regarding the capacity of the landscape to absorb the proposals on the basis of a drive around the area and visiting only a few viewpoints. None of the other landscape witnesses considered that even if all 3 proposals were built that the 'threshold' of acceptability would be necessarily exceeded. The Powys CC witness felt that with certain combinations one might fall within a 'grey area', but did not suggest that this would be unacceptable in visual or landscape terms.
- 9.5.33 In relation to perceptions as receptors move through the landscape, CCW suggest that when turbines become a 'recognition symbol' of the landscape it became a wind farm landscape. It is submitted that there is no basis for suggesting the existing character of the area is that of a wind farm landscape or that this situation would appertain if the current proposals were constructed. A Scottish National Heritage article [Doc. 12, App. 4] lends further support to the view that large scale landscapes such as the plateau landscape can more easily accommodate bigger wind farms.
- 9.5.34 In respect of inter-visibility with the other proposals at CL and MC, NC is 10km from the former and 14km from the latter. The Powys CC evidence acknowledged that a view at a point equidistant from NC and one of the other proposals would need to be

7km distant for CL and 10km for MC in order to see both wind farms in the same direction. This separation distance significantly reduces the cumulative effects arising from NC in fixed viewpoints. Essentially, significant effects arise mainly at viewpoints where there is already a significant, but acceptable, effect from the wind farms individually.

- 9.5.35 The Powergen evidence on cumulative visual effects with existing developments is clear, generally supported by that of Powys CC, namely that there is no basis for refusing permission for NC on its own with existing wind farms, on either landscape or visual grounds. NC is a well designed scheme in an area robust enough to accommodate it. It is submitted that wind farm proposals would not give rise to significant cumulative adverse harm with regard to existing amenity, whether recreational or residential. There would be no detriment to the overall environmental quality of Montgomeryshire and no grounds to refuse NC either on its own or in combination with either or both of the MC and CL schemes.
- 9.5.36 A final point concerns CPRW's argument that other wind farm proposals which are at the application stage and NFFO contracts should be included in the assessment of the 3 inquiry proposals. This cannot be correct. Details of these other schemes have not been provided to the inquiry and, in any event, could be subject to change. If the National Assembly considers there are any material developments arising after the inquiry closure then an opportunity would have to be given for the relevant parties to make further representations. No account should be taken of proposals which have not been the subject of a planning application and may never come forward.

Planning policy

- 9.5.37 In policy terms, despite the objections of CUM, it is not considered there can be any significant conflict between NC and the development plan with regard to archaeology or ecology, subject to appropriate conditions and agreements as discussed at the individual inquiry sessions. Also, there is no evidence to support any contention that tourism would be harmed by the cumulative effects of the wind farms. This leaves landscape and visual impact and noise.
- 9.5.38 The position of Powys CC in relation to NC is noted, but the scheme was before them for some 17 months and they did have the opportunity to assess it properly. They did appear at the NC inquiry and raised a single objection concerning alleged visual impact, but no evidence was submitted to support that objection. The position of the Planning Committee in that objection does not seem to be supported by their own officers or, apparently, their Consultants. The Consultant's findings that the NC scheme would not individually cause unacceptable cumulative effects on the landscape or visual amenity suggests that it must be acceptable in its own right.
- 9.5.39 At their Planning Committee meeting on 5 January 2001 to consider cumulative effects the Shire Planning Officer recommended, among other matters, that no objection was raised to either MC or NC on the grounds of cumulative landscape or visual impact, either individually or in association with each other. The Committee did not accept all of his recommendations but did support the Consultant's report which, as well as expressing the view that none of the proposals individually would cause cumulative harm, stated that their assessment had demonstrated that the least significant effects would arise from MC and NC [Doc. 13 A – C].

- 9.5.40 The situation is that the Council have not indicated that NC fails to accord with the development plan or that planning permission should be refused. Nor have they suggested that NC in conjunction with MC or CL should be resisted on cumulative grounds. Their landscape witness could only assess the landscape and visual effects herself. She could not undertake the balancing exercise to ascertain whether any adverse effects are outweighed by other material planning considerations, but the Council themselves could and have raised no objections.
- 9.5.41 Despite the criticisms of CUM, the ETSU report [Doc. 5/3] does provide assistance in assessing cumulative effects and has input from numerous interests. It recognises that such effects can be adverse or beneficial, a matter which CUM refuse to accept. These benefits must be weighed against any adverse effects. There must be significant detriment to overall environmental quality for there to be conflict with MLP policies ENV24 and 25 and it must be concluded that there is not.
- 9.5.42 In respect of landscape and amenity, while PSP policy EC20 and MLP policies ENV24 and ENV25 refer specifically to cumulative effects, the types of effects are not limited to any single issue, so it is necessary to examine consistency with all relevant policies. It should be noted that policy ENV24 does not seek to avoid proliferation, but that particular attention should be paid to the potential effects on an area. The wind farm effects may be both beneficial and detrimental, including global as well as local effects. It must also be appreciated that impacts which are no more than adverse or detrimental cannot be regarded as demonstrably harmful. To be so regarded, they must be unacceptable adverse or detrimental, and an effect which is significant is not necessarily an unacceptable effect.
- 9.5.43 Applying the foregoing to PSP policies EC3, EC7 and EC20, and MLP policies ENV2, ENV3 and ENV24 – ENV27, the landscape evidence of Powergen shows that the NC proposal either individually or taken with MC and/or CL cannot be regarded as unacceptably adverse or detrimental, so NC does not conflict with the development plan policies. The findings of the Powys CC landscape consultant support this conclusion.

Noise

- 9.5.44 For cumulative noise to be an issue, individual wind farm developments would need to be in close proximity to each other [Doc 5/3, para 2.3.3]. This is not the case here. The detailed evidence on noise considered cumulative effects taking into account the existing and permitted Cemmaes turbines [NC Doc 41/S6 & S7].
- 9.5.45 The technical analysis demonstrates that the agreed noise conditions can be met for the worst case propagation conditions, even with the existing and permitted wind farms operating. On a cumulative basis there would therefore be no conflict with PSP and MLP policy requirements so far as noise is concerned.

Tourism

- 9.5.46 Any suggestion that wind farm development may have an adverse impact on tourism is entirely anecdotal. The Wales Tourist Board has not provided any evidence to support its revised policy. There is no evidence to support the contention that the NC scheme, on its own or in combination with other wind farm development, would significantly adversely affect tourism.

Conclusion

- 9.5.47 The conclusions for the NC proposal - namely that any adverse effects would be extremely limited, that the development would accord with relevant policies, and that any adverse effects outweighed by the substantial benefits of the proposal, does not alter when the scheme is considered in terms of cumulative impact. There is no basis to refuse planning permission for the NC proposal either on its own or in conjunction with either or both of the other wind farm proposals before the inquiry.

9.6. CASE FOR CCW

The main points were:

Landscape and visual amenity

- 9.6.1 Although the Western Uplands SLA consists of a number of different landscape character areas, the wind farm proposals are concentrated within the plateau type as defined by the MLA. There are 5 discrete areas of plateaux within the SLA, namely Plynlimon, Trannon, Mynydd yr Hendre, Llanbrynmair and Cemmaes.
- 9.6.2 CCW have produced detailed maps of the plateau areas close to the application sites, using the 350m contour as a baseline, which generally accord with the areas shown in the MLA [Plan D, Maps 1, 2 and 3]. The maps also show areas of agricultural improvement and of coniferous forest. Further similar maps have been produced showing the areas of existing and proposed turbines [Plan D, Maps 1A, 2A and 3A].
- 9.6.3 The character of the upland plateau type is described in the MLA; in the 1990 Cambrian Mountains study, where the Glaslyn plateau much resembles the areas accommodating the current wind farm proposals; and in the MC, CL and NC environmental statements [Doc. 21B]. These separate descriptions of the upland plateau landscapes provide a remarkably uniform set of features which characterise them. They can be summarised as open or horizontal, remote, wild, having moorland vegetation, having extensive views, and being little influenced by man.
- 9.6.4 Both the PSP and the MLP recognise the exceptional qualities of the upland plateaux and have policies to protect them. The CCW maps show the extent of moorland vegetation which is a major factor in conferring a feeling of wilderness, and its flat vegetation permits wide ranging views. The areas of forest and improved farm land can detract from the plateaux quality, for example the plantations on the Llanbrynmair plateau. A further detracting feature can be in the form of existing wind farms and the PSP, MLA and MLP all recognise the potentially adverse impact they can have on some landscapes.
- 9.6.5 The wind farms at Cemmaes and Trannon Moor (Carno), illustrate the problems of accommodating such developments. The vertical turbines and rotating blades detract from or alter the open or horizontal nature of the landscape. The construction of roads and the presence of vehicles and man-made structures detract from the remoteness and wildness of the areas. The extensive views have been altered in some directions by the intrusion of roads and turbines. Now, only small parts of the Cemmaes and Trannon areas fit the characteristics of the upland plateau type. The

Prime Minister has recently pledged further support for renewable energy projects [Doc. 34], but some feel the impact of wind farm schemes on the beautiful landscape of Montgomeryshire is too big a price to pay for that particular form of energy production [Doc. 24].

- 9.6.6 The CL development would bisect the Mynydd yr Hendre plateau, whilst the important and exceptional landscape around Garreg-hir and its associated lakes would lie between the MC development to the east-north-east, the existing Carno wind farm to the west-south-west and the CL proposal to the north. Yet this plateau is not affected by coniferous plantation and still supports significant areas of moorland along its length. In the case of NC, it would occupy much of the last remaining moorland dominated ridge on the Llanbrynmair plateau. The 3 wind farm proposals either separately or together would harm the remaining areas of high quality plateau landscape and should be resisted.
- 9.6.7 A quantitative assessment of the extent of impact of turbines at 5 existing wind farms, the proposed Llandinam extension and the 3 proposals at MC, CL and NC, has been prepared for ZVIs at 15km and 7km covering land comprising open vegetation above 300m [Doc. 18, pages 6 – 10, and Tables 1 and 2]. The area over which turbines may be visible in respect of the Cemmaes wind farm utilised the combination of the existing Cemmaes A and approved Cemmaes B, in preference to the proposed Cemmaes C where the timescale is unknown [Doc. 18, Table 3]. Existing turbines are visible at the top of the rotor arc over 897km² within 15km (or 34.4% of the baseline combined land area) and 429km² within a 7km radius, with the Llandinam wind farm contributing the largest proportion [Doc. 18, Tables 4, 5 and 6].
- 9.6.8 If the MC, CL, NC proposals and Llandinam extension were all built the area from which at least 1 turbine would be seen would be extensive, from near Machynlleth in the west, beyond Mallwyd in the north, Llanfair Caereinion in the north-east, and between Rhayader and Llandrindod to the south-east [Plan B, Fig. 1(b)]. Currently the maximum number of wind farms of which at least 1 turbine may be seen from each site within 15km is 3, but this could increase to a maximum of 7.
- 9.6.9 The introduction of the new proposals would increase the area from which 2 or more wind farms may be visible. This would mainly be to the north-east as a result of MC and CL. The views from which the 3 MC, CL and NC proposed developments may be seen are in locations to the north of the A470, and MC, CL and the Llandinam extension may be seen to the north of Llanidloes. All 4 developments may be seen in limited areas to the south of Carno and west of the A470, where there are existing views of the Carno and Llandinam wind farms.
- 9.6.10 The areas of visibility for each combination of wind farms at 15km and 7km have been calculated [Doc. 18, Tables 7 and 8] and also the numbers of turbines which would be visible at 15km [Doc. 18, Table 9]. ZVIs of the maximum combination of turbine numbers for existing and proposed schemes at 15km and 7km have been prepared [Plan B, Figs 2 and 3], together with a ZVI of each individual proposal plus existing turbines [Plan B, Fig. 4].
- 9.6.11 The ZVI results and the supporting tables show that the addition of new developments to the existing situation will mainly affect an area already under, or in the vicinity of, the visual influence of those existing wind farms. It is CL which

would cause the greatest increase in the area of visibility of at least 1 wind farm at both 7km and 15km.

- 9.6.12 With the addition of 1 development, MC would have the least cumulative impact, but would open up new areas of view. With the addition of 2 developments, the existing/MC/CL combination would increase the area from which at least 1 wind farm might be seen within 15km, but compared to the existing situation the combination which would cause the greatest increase in the number of developments visible would be existing/NC/Llandinam extension. The existing/MC/NC combination produces the lowest area from which the greatest number of turbines may be visible and the lowest area from which 2 or more developments may be visible.
- 9.6.13 The addition of 3 developments would be visible from the minimum area with the existing/MC/NC/Llandinam extension combination. That combination also produces the smallest area from which at least 1 development may be visible within both 7km and 15km radius. The areas of greatest overlap between different developments are mainly away from existing settlements and include some forestry areas.
- 9.6.14 An assessment of the effects of blade movement has been carried out within a 7km radius to explore the indication of turbines as moving features, rather than features with both static and moving characteristics [Doc. 18, Table 10 and Plan B, Fig. 5]. This consists of 2 main patterns, first in the form of a 'fringe' around the hilltop location of a wind farm and, second, certain locations where there is an extensive view of blades only. The main areas where blades only are seen tends to be close to the developments themselves and away from settlements, but include roads. The most extensive additional areas where blades would be seen result from MC and CL. The areas within an overlap of 2 or more new developments are limited, and the largest area of combined views are between CL and existing turbines at either Carno or Cemmaes.
- 9.6.15 A survey of visibility of turbines from open vegetation over 300m and all common land over the 15km radius has been undertaken [Doc. 18, Tables 11 and 12], and ZVIs prepared of the visibility of combined existing and proposed turbines from those areas [Plan B, Fig. 6(a)] and of proposed and existing turbines separately [Plan B, Figs. 6(b) and 6(c)]. The survey shows that existing turbines may be visible from 27% of common land and 40% of open vegetation. The addition of NC would increase views from open vegetation to the north of Mallwyd and south of Bwlch y Groes and to a lesser extent CL would also be visible in this area. The addition of CL or MC would extend views to the north-east to include most of the open vegetation and common land between Cefn Coch in the east and the Rhyd and Twmpath Melyn common in the west. The combinations including CL and the Llandinam extension would tend to produce the largest areas of open vegetation from which turbines may be visible. The combinations which include MC and NC tend to produce the smallest areas.
- 9.6.16 In the case of common land the largest increase would be in the vicinity of CL, MC and Carno wind farm, including areas where there are currently little or no views of turbines. The area of overlap of visibility from all the proposals at MC, CL, NC and the Llandinam extension is around Waen Garno Common. Here, existing turbines can be seen but the area would be extended and also the directions of view increased.

- 9.6.17 The various wind farm combinations have been assessed in relation to visibility and the length of roads of different categories from which they may be seen [Doc. 18, Tables 13 and 14], with the visibility mapped over a 15km radius for existing and proposed turbines [Plan B, Figs. 7(a) and 7(b)]. The results show the lengths of main road allowing turbine views increases consistently for all combinations of developments where the numbers of turbines exceed 10. The largest changes are in the increase of the extent of area from which at least 1 turbine may be visible.
- 9.6.18 The greatest change in views from main roads appear to be in the vicinity of Llanbryn-mair and between Caersws and Llandinam, but the overall increase in views from main roads is generally low. The greatest changes in views from the more minor roads appear to be from CL and MC, mainly in the area to the north-east of those sites. MC would have a slightly greater impact, but CL would contribute views of more turbines. The survey has limitations because of factors such as the shielding of roadside hedges and other enclosures and the effects of distance. However, the maximum change in length of road from which turbines may be seen compared to the present situation is 48% in the case of minor roads and 18% for major roads.
- 9.6.19 The landscape evidence of the wind farm applicants and Powys CC has been reviewed in relation to their methodology and the acceptability of wind farms in the landscape. The ZVI studies were found to be broadly consistent with that prepared for CCW.
- 9.6.20 It is relevant to bear in mind that the plateau landscape is similar to that described in the 1990 Cambrian Mountains Landscape Study [Doc. 19], even though the application sites lie outside that area. That landscape was regarded as so outstanding [Doc. 20a] that it was chosen for a project to help develop landscape assessment techniques and the MLA drew upon its findings. The MLA emphasises the beauty of Montgomeryshire [Doc. 20b] and was used in the MLP to define the Western Uplands SLA. In his report on the MLP the Inspector sought to balance the issues of landscape quality and wind farm development [Doc. 20c] by allowing for the possibility of wind farms in the SLA, but as an exception to the normal tests of appropriateness.
- 9.6.21 It should also be noted that the sites of all the proposed wind farms fall within a 'tranquil area' of countryside identified as being relatively remote and undisturbed by noise and visual intrusion in a report to CCW in 1997 [Doc. 23]. The report identified wind farms as intrusive and erosive of the tranquil classification. The proposed wind farms are within the transition of the landscape from a well populated open landscape of farms and woodlands in Shropshire and eastern Powys to the progressively more dramatic narrow valleys, steeper hills, and upland plateaux of the Cambrian Mountains. The particularly valuable remote and wild upland plateaux are the most affected by the wind farms.
- 9.6.22 All the landscape consultants for the wind farm applicants confirm that the sites lie upon a plateaux landscape, as do the existing schemes at Cemmaes, Carno, Llandinam and Bryn Titli. Such exposed sites can provide little mitigation of visual impact and it is considered the proposed wind farms will have potentially significant adverse effects on the landscape. Wind farms cannot exist harmlessly with landscapes of such visual prominence and there must inevitably be a depletion of their character. The wind farms would not contribute to conservation and protection

of the scenery or perpetuation of the wilderness, and are more likely to be replaced in due course than to be permanently decommissioned.

- 9.6.23 The evidence of Powys CC and others show that the landscapes in question are sensitive to change and that the siting of a wind farm on a plateau provides a significant magnitude of change. In short, the plateau sites are prominent, empty of development and have no absorption capacity, so a wind farm will only become less obvious to the eye when distance widens the breadth of view so it occupies less of the panorama. The Powys CC evidence shows that each individual wind farm would give rise to significant cumulative effects when taken in relation to existing wind farms or in combination with one or other of the proposed wind farms, in several parts of the study area.
- 9.6.24 This is confirmed by the evidence for CCW provided by the Macaulay Land Use Research Institute in terms of sequential views and combined views [Doc. 18]. The MC, CL and NC proposals could not be sympathetically contained or absorbed into the landscape setting and it has already reached its capacity for such development. The balance between the provision of renewable energy and the conservation of landscapes has not been struck.
- 9.6.25 Attention is drawn to supplementary planning guidance on wind energy published by Cumbria County Council [Doc. 22] to illustrate the views of another Authority affected by pressure for wind farms. This document suggests that in terms of cumulative effects large turbines are visually dominant up to 2km and noticeable and intrusive in many situations up to 5km. It goes on to indicate that they are particularly noticeable when blades are turning up to 10km in clear weather, and can just be seen at over 20km although the impact is not significant in the wider landscape at that distance. The document then goes on to suggest that there are thresholds which are reached according to the number of turbines in the landscape, where effects may eventually become adverse, and considers the capacity of the landscape to absorb the effects. In Cumbria the guidance does not envisage any single tract of countryside where total dominance by wind farms would be acceptable. It also considers the frequency of views and importance of viewpoints when travelling through an area containing wind farms.
- 9.6.26 The Cumbria guidance shows that wind farms can have a significant visual impact within 15km and that as the Montgomeryshire existing and proposed wind farms generally occupy one landscape character type, namely plateaux, the effect will be stronger than if they were spread over different landscape types. Also, it implies that wind farms in a designed inter-relationship would have less adverse effect than being scattered over a wide area. It follows that extensions to existing wind farms, such as Cemmaes and Llandinam, may be less harmful than creating new wind farms.
- 9.6.27 It is considered that the threshold and capacity of the Montgomeryshire study area has been reached and if any of the 3 proposed schemes are approved the result would be a 'wind energy landscape.'

Planning policy

- 9.6.28 The matter of cumulative impact was one of the major factors in the decision of CCW to oppose each and all of the wind farm proposals. As well as existing and approved schemes and the MC, CL and NC proposals, CCW are also concerned about the

cumulative effects of 2 further schemes. These are the re-turbining of Cemmaes (Cemmaes C) and the proposed extension of the Llandinam wind farm. In their analysis CCW included these schemes because there is a possibility that either or both may be approved by the Local Planning Authority before the National Assembly has determined the 3 inquiry proposals, so much of the cumulative analysis could be flawed without them.

- 9.6.29 Much of the benefit arising from wind farms is national or international whereas the disbenefits are localised, especially where activities are clustered. CCW has long argued that a strategic approach to location could reduce cumulative impact and it supports the National Assembly in such an approach. In England the evidence of the Countryside Agency to the Environmental Audit Committee advocated regional targets and a sequential approach to on-shore wind sites provision [Doc. 26].
- 9.6.30 The issue of adverse impact is one of thresholds. Although the countryside can accept wind farms, few would wish to see a situation where they wholly dominate or characterise an area such as Montgomeryshire or a region such as mid-Wales or a landscape type such as the upland plateaux of Wales. The task is to determine the point where the alteration to some areas of countryside becomes unacceptable to a diminishing and increasingly valuable resource. In the case of the 3 proposals, it is the view of CCW that they would cause an unacceptable impact to both the SLA and the plateau landscape type. It is noted that since the wind industry normally seeks sites with the highest average wind speeds to maximise a rapid return on investment, they concentrate on high and remote areas which have a high landscape and biodiversity value thus giving rise to conflict. The average altitude of wind farm proposals in Wales is some 318m, with 75% over 200m.
- 9.6.31 The proposals are subject to PSP policies EC3, EC7 and EC20 in particular. In the MLP, section 5 provides some background to its landscape policies which shows that a major issue is the need to conserve and enhance the visual environment and maintain the distinctiveness of the landscape. Policies ENV24 and ENV25 relate to cumulative impact. During the inquiry into the MLP the Inspector concluded that a wind farm proposal in the SLA would not meet the test of appropriateness that the original version of policy ENV3 sought, thus effectively placing an embargo on such schemes. The Inspector felt this was not acceptable, but also concluded that the “*highly attractive*” landscape throughout the SLA should be protected from unacceptably harmful effects. Accordingly, he considered that policy ENV3 should recognise a wind farm as a possible exception to the normal test. The current form of the policy now requires a wind farm to be justified as an exception to the test of appropriateness where it complies with other Local Plan policies.
- 9.6.32 It is noticeable that in Government guidance there is little difference in the wording of PPG22 in England (1993) and TAN8 in Wales (1996), for example paragraphs A44 and A48 of TAN8. However, at paragraph A49 of TAN8 it raises the issue of cumulative impact which is not referred to in the advice for England.
- 9.6.33 CCW have issued their own policies on wind power, first in 1992 and then a revision in 1999. These indicate that CCW will oppose major wind farm developments within or close to SLAs where they would cause detrimental visual intrusion. It is not suggested that the policies of CCW carry any great weight at the inquiry, but their object is to make clear the considerations which will influence CCW’s advice on wind energy proposals. The evidence which has been provided by CCW, including

the assessment of cumulative visual impact [Doc. 18], shows that the 3 wind farm proposals would be damaging to the quality and value of the landscape contrary to relevant planning policies.

- 9.6.34 TAN8 emphasises that the cumulative effects of wind farms should be taken into account, as does PSP policy EC20. MLP policies ENV24 and 25 deal with proliferation and cumulative impact. The former policy covers the creation of new areas where one or more wind farms may be visible where none are now, whereas the latter deals specifically with ‘intervisibility’. Any assessment must include both those issues, as well as ‘sequential’ impacts where wind farms are seen when moving through an area.
- 9.6.35 CCW do not resist wind farms as a matter of course and have only objected or recommended refusal of about half of the 74 applications it has considered since 1991. However, they see the issue of cumulative impact as one of thresholds and are concerned if the accepted objective of meeting renewable energy targets leads to wind farms unacceptably dominating or characterising an area such as mid-Wales, or a particular landscape type such as upland plateaux.
- 9.6.36 In relation to plateau landscapes there is concern that afforestation and agricultural improvement have already reduced the area which displays their original character well, leaving only parts of the Llanbrynmair and Mynydd yr Hendre plateaux unaffected. These 2 areas will be badly affected by the 3 wind farm proposals. The main energy benefits of wind farms are experienced generally, whereas the cumulative impacts are experienced locally. The references in MLP policies ENV 24 and 25 clearly relate to environmental quality and visual impact in terms of cumulative effects and not to economic benefits. CCW does not, therefore, accept that incremental benefits which are argued to justify individual proposals can be taken into account again as part of the cumulative argument, given the wording of those policies.
- 9.6.37 Despite the acknowledgement of the highest landscape value within Montgomeryshire in the MLP and the acceptance of the Western Uplands SLA as a special area within that area, the developers landscape witnesses have sought to downgrade the general quality of the plateau landscape. CCW do not accept this in relation to any of the application sites, as none are directly affected by afforestation and the CL and NC sites in particular contain many features and habitats which characterise the plateau. Accordingly, they should be valued for that reason.
- 9.6.38 As already mentioned, proliferation, as described under MLP policy ENV24, includes new views of turbines and will govern peoples’ views of an area’s scenic qualities and attractiveness. This concerns many ordinary people, as reflected in the letter from the local MP and AM [Doc. 30]. The objective evidence of the Powys CC ZVIs makes it clear that theoretical visibility within a study area of almost 200,000ha will be extended to over half that total area. This must represent an effect on the area beyond a threshold where people’s perception of this part of the Montgomeryshire countryside will change. Whether that is defined as a ‘wind farm landscape’ or a ‘landscape with wind farms’ seems a matter of semantics. What is important is that wind farms will be a significant or even the most significant element of the landscape and will condition the perception of it by residents and visitors.

- 9.6.39 All of the landscape witnesses have accepted there are significant cumulative effects in terms of intervisibility and sequential impacts, as well as on users of common land. The witness for NWP also found significant effects on both the plateau and hillslopes/saddles landscape types in all of the scenarios which she assessed. Of course, the issue is whether such effects are acceptable or not and individual views will vary. The landscape witnesses for the developers avoided criticism of each other and only the Powys CC witness undertook an assessment of all 7 possible combinations of the proposals. She could not say the combinations of CL and NC, CL and MC or CL, or NC and MC would be acceptable and considered they lay within a 'grey area' between acceptability and unacceptability. Since she was representing the Council which did not oppose any of the developments on cumulative grounds, it is interesting to note this degree of reservation. The landscape witnesses could not provide a clear definition of when they believed a threshold would be crossed and this illustrates the level of subjectivity in such judgements. It is therefore equally valid to accept the judgements of the CCW witnesses who believe the landscape does not have the capacity to absorb any one of the applications, never mind any combination of them.
- 9.6.40 Ultimately it is for the Inspector and the National Assembly to judge the issue based on the objective information before them and knowledge of the particular landscape. However, they should have regard to the CCW evidence on the particular qualities of the landscapes in questions and that turbines are detracting features that erode that quality and the elevated, wild and remote character of those areas. The landscape concerned is sensitive to change and the 3 proposals do involve a significant magnitude of change.
- 9.6.41 It is CCW's view that the threshold of the landscape's capacity to contain and absorb wind farms has been reached and permission should be refused for the proposals on the basis of cumulative impact alone.

9.7. CASE FOR CPRW

The main points were:

Method of landscape and visual amenity and comments on 'cumulative assessment'

- 9.7.1 It is surprising how little attention has been paid over the last 10 years to the increasing cumulative effects of on-shore wind power schemes, in terms of preparing a strategic assessment of the environmental consequences. In the end the only study has been the CEWT report prepared in 1999 which was an industry led document of the DTI.
- 9.7.2 In dealing with the cumulative effect, only CPRW has provided a comprehensive tabulation of all wind power stations in the UK, together with details of their size and scale, when it should have been made available as contextual material at an early stage.
- 9.7.3 CPRW would draw attention to 3 important issues affecting cumulative assessment. First, is the distances over which turbines are potentially visible and how this is affected by experiencing more than a single installation. The previous evidence to the individual inquiries based on the 'Thomas-Sinclair Matrix' has shown that size as well the number of turbines and other visual aspects must be considered. The

landscape witnesses for the developers have tried to undermine the CPRW use of this visual impact matrix, but it is submitted that this is a useful tool and challenges certain assertions about zones of potential visibility and distances over which blade rotation can be observed.

- 9.7.4 Second, there is a need to tighten up the terminology used in cumulative visual impact, as with the interchangeable use of *intervisibility* and *cumulative impact*. It is suggested the term *combined impact* or visibility should be used for areas where more than one installation can be seen simultaneously. The term *incremental impact* should relate to the effect of seeing turbines from one or more installations repeatedly, but not simultaneously, in an area of general geographic cohesion. The term *intervisibility* should be restricted to the situation where one installation can be seen from another. During all the inquiries, the different methodology and terminology of the developers' landscape witnesses became apparent even though a common base was used. There were such differences in the final assessments that many people would find it difficult to compare the findings or even comprehend the detailed processes used. It seems to CPRW that the standard approach advocated by the Landscape Institute encourages analysis of the pieces but fails to synthesise. The result seems to be that a succession of confusing hurdles has to be surmounted before a conclusion might be reached. Other matters added to the confusion, including the role of receptors and, in relation to cumulative impact, whether intervisible sites be looked at in terms of a particular arc or should the reality that a person will turn his or her head and body be accounted for.
- 9.7.5 In the circumstances it is not surprising that Powys CC sought to provide a fourth assessment. However, neither the Shire Planning Officer nor the Councillors seemed to know whether or how the Consultant's judgements were weighted and how this might or should be reflected in their deliberations on conformity with the PSP and MLP. The more general difficulties experienced in visual assessments are compounded by the shortcomings in photographic and other visual representations used in the environmental statements. The Environmental Impact Assessment process is complex and shows how difficult it is for officers and members of a Local Planning Authority to take decisions when the professional evaluation of impacts are technically complex and contextually inconclusive. It is reasonable to ask how relevant and reliable are the conclusions reached by the Council members and how reasonable it may be for their decisions on such complex proposals to frame the pattern for subsequent appeals and call-ins.
- 9.7.6 Third, is the matter of the scope for future impacts and the weight to be attached to different categories of certainty and probability of existing schemes, approved schemes, current applications and generating contracts. At the Pre-inquiry meeting the Inspector had indicated that he would only wish to consider cumulative effects arising from existing wind farms, unbuilt schemes with planning approval, and the 3 wind farm proposals which were the subject of the inquiries. The ETSU report on cumulative effects has been of limited worth to the cumulative inquiry session, but whilst the demarcation as to the scope of schemes to be included in the cumulative assessment requested by the Inspector is understood, it is CPRW's view that the concept of a 'Strategic Cumulative Assessment' must imbue the final consideration by the National Assembly [see Doc. 32A]. A letter was sent by CPRW to PINS prior to the first inquiry session to try and clarify the situation [Doc. 32A]. This drew attention to the ETSU report and its proposal for a 'cumulative assessment' of existing, approved and current proposals in the planning process, and a 'strategic

cumulative assessment' for the foregoing plus NFFO contract schemes and possibly others. CCW also sent a letter indicating that undecided planning applications should be included [Doc. 32B].

- 9.7.7 It is the view of CPRW that the National Assembly should follow the ETSU concept and include 6 existing installations in Powys and Ceredigion, 1 approved installation (Cemmaes B), the 3 MC, CL and NC proposals, 3 schemes still in the planning process, and 2 NFFO contracts, in their cumulative assessment [Doc. 32C]. It has been the evidence of CPRW that the visual and some other impacts of each of the 3 proposals at MC, CL and NC are significantly adverse in the context of the 'base-line' situation in Montgomeryshire and adjacent areas and each should be refused.
- 9.7.8 CPRW has avoided commenting on the relative merits of one proposal in relation to another for the simple reason that it believes each is unacceptable. Similarly, while it believes that the cumulative impact of any combination is even more unacceptable, it has preferred not to emphasise its individual objections, while encouraging those who have participated in the cumulative debate to adopt as wide an agenda and as lucid a set of definitions as possible. As far as a cumulative assessment is concerned, CPRW rely on the technical evidence, conclusions and submissions provided by CCW and CUM.

Tourism and Public Opinion

- 9.7.9 Tourism concerns have been dismissed by the developers as unproven, on the basis of survey evidence and anecdotal material from elsewhere. CPRW submits that the tourism issue is closely bound up with the impact of the proposals on the landscape, since it is the scenic qualities of the area which are the reason most people want to come to it. Further wind farm developments will compromise the very features that give the otherwise fragile economy its small share of the economic cake. The Wales Tourist Board has voiced grave concerns about proliferation of wind farms in the area, even though its protocol makes it difficult to articulate these. Evidence at the inquiry has spanned the effect of wind farm proliferation on caravan sites, bed-and-breakfast businesses, farm diversification and green tourism; all aspects of possible calamitous damage to the tourism industry.
- 9.7.10 Public opinion, along with questions of domestic amenity, property equity or effects on tourism or other economic interests may all be material considerations if these issues assume communal rather than individual proportions, as in these cases. These considerations are all relevant to an assessment of the cumulative harm that would arise from the proposed developments.

Planning and other policy issues

- 9.7.11 CPRW's policy on wind energy installations has been re-formulated into on-shore and off-shore variants which have been placed before the inquiry [CL Doc. 36(1)]. Despite opposing parties suggestions to the contrary, this policy is capable of not opposing, or even supporting, proposals which on balance are not visually intrusive or adversely affect amenity. The fact is that none of the proposals before the inquiry fall into this category and that is not the fault of CPRW in expressing the concerns of its membership. It is the fault of a system which pits the aspirations of renewable energy policy against the conservation of the landscapes of rural Wales. At the same time this conflict sets interest groups against each other, divides communities, and

diverts time and money into adversarial conflict instead of tackling local and global problems in concert.

- 9.7.12 The balancing exercise which has to be undertaken is subtle and complex. It is true that a large scheme or group of schemes has the potential to make a proportional contribution to renewable energy generation, but it is also true that it similarly has an increased potential for significant effects which in upland Montgomeryshire may translate into adverse impacts. The defined SLA is special just as its title implies and it is backed by a commitment to its conservation. Although the infamous ‘exception’ for wind farms might be seen by some as a green light for developers, the Local Plan Inspector did not leave the SLA as a hostage to fortune. The original target of a 50% wind energy export capacity is no longer part of the Local Plan, but it is much nearer to attainment without any further wind farms than any other local authority area in Wales, if not in the UK.
- 9.7.13 It seems difficult to attempt a finely balanced judgement of the 3 proposals unless a factual framework is presented which also sets out their national context. It has been left to CPRW to point out that, apart from having nearly half its turbines in Montgomeryshire, Wales hosts a disproportionate number of turbines providing around 40% of UK installed capacity despite having only 5% of the population and 8.5% of the area. In the absence of targets for specific energy technologies for local areas, or Wales as a whole, guidance remains in TAN8 which awaits radical review. TAN8 should not be seen to over-ride local policies for countryside protection or to help to achieve targets. Its purpose is to provide neutral guidance to assist decisions which have to balance often conflicting aims.
- 9.7.14 It has been implied that planning delays inhibit the potential to achieve the UK 10% renewables target, with objectors contributing to this situation. This forgets that NFFO contracts carry no presumption of planning approval and the Government emphasises the key consideration of both economic attractiveness and environmental acceptability.
- 9.7.15 CPRW have presented largely uncontested evidence on the increasing role for off-shore wind power and for other technologies which may challenge the eminence of on-shore wind farms. Recently the Prime Minister in his *The Next Steps* speech [Doc. 34] spoke in wide ranging rather than sectoral terms, including reference to technologies once thought of as marginal and to investment in initiatives such as off-shore wind power. Even so, we still seem to be at a position where unfocused national renewables policy is pitted crudely against local landscape and amenity interests. The developers have failed in their description of the site selection process to provide any compelling reasons why their sites which demonstrably conflict with SLA policy and are unacceptable to the local community should nonetheless be permitted. Similarly, it has not been shown that this area had technology or location specific targets which requires a further 62MW of installed capacity and a visually coalescent group comprising a total of 75 large turbines.
- 9.7.16 Some in the wind energy industry consider the planning consent regime should be relaxed in the interests of renewable energy policy. On the contrary, the dangers of promoting large land based wind energy schemes without adequate regard for their impact should be emphasised and the duty to protect high quality landscapes and to consider other interests of importance must not be compromised by narrowly framed renewable energy policies. This is especially so when other less objectionable sites

are available on already blighted areas, there is scope to exploit off-shore potential, and more acceptable technologies are on the threshold of development or could be exploited [eg: Doc. 33, page 28]. In Montgomeryshire there is no need for further sites and the balance of judgement can lie logically and correctly with the landscape and the locality rather than with the turbines.

- 9.7.17 In the end the balance must be struck between the adverse effects and benefits. The development plan is a first stage in this exercise and the inquiry has had the benefit of a much more refined series of analyses. The National Assembly is asked to conclude that the visual and amenity interests are not outweighed by benefits of additional electricity, the proposals are not impelled by local or regional need, or justified in national or global terms by the absence of alternative means of addressing the energy problem. The construction phase of a wind farm has some short-term benefit for employment, but none afterwards. The so-called temporary nature of such developments is misleading as the 25 year life is a human generation and there is no promise that afterwards there will be no applications to renew or extend the schemes. All the proposals should be refused in line with the recommendations of the Assembly's statutory advisory body, CCW.

9.8. CASE FOR CUM

The main points were:

Landscape and visual amenity

- 9.8.1 CUM was formed in 1995 and has a membership of nearly 300. Considerable effort has been made by its volunteers to attend and inform the inquiry in order to protect a cherished landscape. The message is that Montgomeryshire has already lost more than enough of its special landscape and tranquillity to wind farm developments [Docs. 36.1, 36.3 and Plans E, F, G]. It follows that the current proposals are unacceptable. The cumulative benefits of a small amount of electricity, few jobs, and small financial gain to a few local landowners weighs lightly in the balance against the loss of the non-renewable resource of peace, beauty and harmony in the rural environment.
- 9.8.2 The ETSU/CEWT document on cumulative effects [Doc. 5/3] which is supported by developers is tempered by Government policies which encourage wind farms and thus embodies a presumption that they can be accommodated successfully in the landscape. CUM believe the CEWT report shows a lack of neutrality. The report suggests that the term 'cumulative effects' should be preferred to 'cumulative impact' to indicate that effects can be positive or negative. CUM suggest that in the case of the landscape other antonyms should be used instead of positive and negative. These are detrimental or beneficial, degrade or improve, damage or repair, reduce or enhance, blight or conserve and injure or aid. If this is done then the effect of the wind farms on the SLA can be described accordingly and it is CUM's view that the cumulative impact on the SLA progressively downgrades the aesthetic values associated with the designated landscape.
- 9.8.3 It is vital to consider the reasons why people visit and value a particular area. Some of the values which people associate with open landscapes are visual beauty; space, peace and tranquillity; sense of awe, majesty, remoteness and distance; absence of

negative or destructive human activity; awareness of the weather and seasonal changes; awareness of the natural world and its wildlife; elevation of the spirit, creative stimulus, and silence. CUM query whether people in search of these values would choose to visit landscapes with wind farms, and the fact that wind farms are normally resisted in nationally designated landscape areas suggests that turbines are seen to downgrade the aesthetic values of landscapes.

- 9.8.4 The 3 application sites are within or adjacent to the Western Uplands SLA which was designated for its high visual appeal and quality. This has never been questioned until the advent of wind farm applications. Writers have praised the area in the past, for example John Wood describing the hills around Carno and Bwlch y Garreg, and Richard Sale in his book on Glyndwr's Way when referring to the area between Llanbryn-mair and Llangadfan [Doc. 39A]. CUM regard the landscape assessment conclusions of the developers to be at odds with the foregoing writers' experiences and contend that all the sites possess the aesthetic values, which have been described. The unspoilt landscape is a finite and dwindling resource, which must be conserved.
- 9.8.5 CUM have their own definition of cumulative impact [Doc. 35A] and believe that this visual impact must increase as the numbers of turbines increase and in the same way greater numbers of wind farms do likewise. The presence of 2 or more wind farms in the same landscape visually compromises the intervening ground. The movement of the viewer creates an illusion that a turbine is moving and this effect can be multiplied by the number of turbines in view, which will appear to move both in relation to each other and the landscape. The effect is exacerbated by topography that alternately conceals and reveals the turbines in changing sequential relationships. Similarly, 2 or more wind farms undergo changing visual relationships as viewers move through an area. It is accepted that this kinetic effect applies to any objects which are seen, as Powergen have pointed out, but since turbines are visually dominant by virtue of scale, movement and colour, they are more likely to attract attention than most objects.
- 9.8.6 The inter-related aspects of colour, tone and the developers' constant references to transparency and permeability are important. CUM consider that the pale grey chosen to colour turbines stands out against the natural vegetation of the uplands. Newton's experiments established that sunlight is an amalgam of 7 colours and that white surfaces reflect all those colours. Thus, a pale grey turbine which reflects most light will be visually prominent against green vegetation which absorbs light. The pale tone of the turbine set against a medium or dark tone will also emphasise visual contrast. With regard to transparency or permeability, it is argued that the vertical punctuation of the landscape by turbines dissects the total landform into visually segregated sectors [Docs. 35A and B].
- 9.8.7 The developers' view of visual assessment is simplistic, concentrating on fixed viewpoints and roads. Viewing is much more complex, with the same view seen under different conditions of weather, light and season. In this context, cumulative impact accumulates through repetition and registers more forcefully in the mind. Various public views of existing wind farms in the area from different distances show how the beautiful landscape vistas are already compromised by their presence [Photo. 5]. In the case of Garreg-hir, the close proximity of the CL and MC proposals would seriously demean the visual experience gained from this well known viewpoint [Photo. 5, 27 – 29].

- 9.8.8 RES have referred to the human view of turbines in the landscape as if it is done in a fixed location and without moving one's head. This ignores the obvious free movement of eye and body in reality. For example, viewing the area around Garreg-hir, with its awe inspiring panoramic views over mid-Wales and parts of Shropshire, with the head rigid and the eyes fixed would limit the visual experience to less than a quarter of its full potential.
- 9.8.9 A study of the ZVI of existing/approved wind farms and all the proposed schemes [Plan A, Fig. 11] shows there to be 1998 whole 1km squares in the study area. A square by square assessment has been made to ascertain the degree of visual impact in each if all the proposed wind farms were built [Doc. 39B]. This showed that over 80% of the study area squares would be affected, with a quarter of the area of each of 14.2% of the squares, a half of the area of each of 16.9% of the squares, three quarters of the area of each of 19.6% of the squares, and the whole of each square of 29.6% of the squares, experiencing cumulative visual impact.
- 9.8.10 The evidence for Powys CC at the cumulative session was not from an independent source, being a company which acts for wind farm developers. The witness was not asked to assess the individual impact of any one proposal or to say if she felt all 3 were acceptable. Her only conclusions were that there was a significant cumulative impact and she was unable to define the dimension or capacity of the 'grey area' in which the applications lie.
- 9.8.11 The peace and tranquillity of the area around Garreg-hir would be unacceptably affected by turbine noise and visual intrusion if either or both MC and CL were to proceed, contrary to MLP policy. The Nant Carfan plateau and adjacent common which form one of the last unaffected areas would be harmed by the NC proposal. All the sites are within or adjacent to the SLA and should be protected from adverse development. CUM believe that any threshold of acceptability has already been breached and the 'grey area' referred to by Powys CC has been exceeded. It must be remembered that there are no planning policies which require implementation of NFFO contracts, in contrast to the duty under the 1968 Countryside Act for the Government to have regard to the desirability of conserving the natural beauty and amenity of the countryside.

Ecology and wildlife

- 9.8.12 The huge decline in British bio-diversity is a telling silent witness to the failure of the Authorities to protect the environment from industrialisation, with each developer arguing his project has minimal localised effect. However, the cumulative impact is overwhelming and leads to a rapid decline in habitats and species. The wind farms are not sustainable as they do compromise resources for future generations.

Noise and tranquillity

- 9.8.13 Tranquillity is a fast diminishing and non-renewable resource in today's rapidly changing world. Maps produced by CPRE comparing tranquil areas of England in the 1960s with the 1990s show a progressive loss of tranquil places as centres of noise pollution spread out to absorb their hinterlands [Doc 36(1)]. The criteria for the maps of tranquil areas of England are lax when compared to the environment in mid-Wales.

- 9.8.14 At present there does not seem to be a comparable map for Wales. However, on the basis of the criteria used, the whole of mid-Wales can be classed as a tranquil area, with the exception of the major towns. Night-time satellite images of light pollution, which correlate closely with the noise pollution distribution maps, indicate that mid-Wales is the largest remaining tranquil area in southern Britain [Doc 36(1) figs 2&3]. Within tranquil areas, certain other linear features and discrete sites are shown as creating a lower level of disturbance around them 1km wide. Sites identified in this respect include *"most wind power developments"*.
- 9.8.15 One of the qualities of life in Montgomeryshire most valued by residents and holidaymakers is the tranquillity of the area. The largest tranquil area in southern Britain has been seriously damaged by existing wind power developments. Any further developments will unacceptably reduce the quality and extent of this non-renewable resource [Doc 36(1) figs 6,7&8].
- 9.8.16 Zones of noise impact (equating to the CPRE zone of disturbance of tranquillity due to a wind farm) drawn around the MC and CL sites almost touch each other [Doc 36(1) fig 9]. When the zone is increased to 1 mile/1.6 km, a distance at which numerous wind farm neighbours find turbine noise intrusive, the zone of noise influence of the 2 proposals overlaps considerably. This area of overlap, which includes several properties, a caravan site and the viewpoint of Garreg-hir, would experience a cumulative noise impact. The NWP noise witness confirmed that it would be possible at times to hear the CL turbines on Garreg-hir.
- 9.8.17 There are several aspects to the cumulative noise impact of wind farms. The proportion of time that turbines may be heard in any one place is increased because of the increase wind directions when it is downwind of turbines. In addition, it may be possible to hear both wind farms at the same time. Recent ETSU research [CL Doc 27] confirms that turbine noise is also audible upwind. It concludes, amongst other things, that *"noise radiated upwind is more intense than noise radiated downwind, by up to 2dB(A) at low wind speeds, with the highest noise levels at 30 degrees to the upwind"* [CL Doc 27, p 205].
- 9.8.18 A similar corridor of potential cumulative noise impact exists in the Nant Carfan valley, between the Cemmaes turbines and the NC site [Doc 36(1) fig 10]. At the Nant Carfan individual inquiry session the Powergen noise witness presented predictions that compared the impact of Cemmaes A and B to the impact of these and NC combined, under easterly and westerly wind conditions [NC Doc 41/S7]. At all 6 properties within this zone the predicted noise levels were higher when NC was included, even when the wind was from the west.

Archaeology

- 9.8.19 CUM have noted that the SMR shows numerous archaeological sites in the landscape around and within the wind farm sites [Doc. 36(2)]. The setting of many sites within and around existing wind farms have already been significantly affected by the presence of turbines. The proposed wind farms would also affect the setting of a substantial proportion of the remaining upland sites and diminish the resource of visible remains in their setting.
- 9.8.20 One of the highest densities of remains is found around and within CL and MC, with many sites being Bronze Age cairns visible over a wide area. Visible remains such as

these and the Y Capel stone circle south of CL would be affected, contrary to WOC 60/96, paragraph 17, and resulting in the erosion and downgrading of the historic landscape of the Western Uplands.

Precedent

- 9.8.21 CUM are concerned that the approval of the MC, CL and NC applications will inevitably lead to further applications for extensions in the future, which would exacerbate the cumulative visual impact within the landscape. The area for the turbines on the MC site has been relocated from that originally proposed and has the potential to double the number of turbines currently proposed. The CL site proposes 42 turbines, but is adjacent to land that was once the subject of a MANWEB proposal for over 100 turbines. The NC site for 16 turbines represents a reduction from the original concept of over 30 turbines. This must be seen in the context of the approval for Cemmaes B and the current proposals for Cemmaes C and the extension to the Llandinam wind farm.

9.9. SUBMISSIONS BY INTERESTED PERSONS

Mr W Marden

- 9.9.1 Mr Marden lives some 2km from the southern edge of the NC site. He considers that all the proposed wind farms would be quite incompatible with the natural beauty of the landscape, with their industrial scale and vertical metal structures in conflict with the sweeping forms of hillside and valley. If these sites are built then with existing wind farms a complete circle will emerge closing in on the Plynlimon uplands. No upland hilltop with view across Mid-Wales will be free from turbines and a unique rural landscape will be lost. Also, many of the sites would be visible from Snowdonia National Park which will compromise its value and purpose.
- 9.9.2 The policies of the development plan seek to prevent a proliferation of wind farms in the Western Uplands SLA and to resolve any conflict with other aims in favour of landscape protection. MLP policy ENV25 (as modified) states proposals will be refused where cumulative impact is significantly detrimental to environmental quality. The proposed wind farms will not only harm landscape quality, but also have adverse effects from noise and on residential amenity, birds and wildlife habitats, and archaeology. In addition, the proposed transmission line routes and impact have not been able to be fully assessed and the issue has not taken account of TAN8, paragraph A13, and MLP policy ENV29.
- 9.9.3 Wind power is given favourable financial assistance by Government and the pursuit of financial gain is the sole aim of the power companies, not any interest in the environment. The correct approach would be to encourage small scale local power schemes and energy conservation. The energy and pollution savings claimed by the developers do not give a full picture of the embodied costs of stand-by power alternatives or the costs of turbine manufacture, transportation etc. It is also a concern that as the concrete bases of the turbines will be left in the ground on decommissioning, the delicate moorland and bog structure will never be regained.

- 9.9.4 There has been some discussion about the threshold of acceptability for wind farms. It is submitted that such a threshold has already been reached and the landscape cannot absorb any more wind farms and still retain its unique character.

Mrs J Hill.

- 9.9.5 Mrs Hill lives at Y Rhos, Carmel and also spoke on behalf of the occupiers of Plas Helyg and Ty Uchaf. Carmel is a valley locality where some dwellings and a caravan park are located along a minor road 1km or so to the north of the MC site and about 2.5km south-east of the CL site. Mrs Hill identifies Carmel as a settlement of 7 properties and a holiday caravan park which is much closer to the MC site than Adfa which was claimed by RES to be the nearest settlement to the site in their evidence. She is concerned about the accuracy of noise tests undertaken by RES in the Carmel locality and of the long-term effects of noise and visual intrusion. Given that the wind farms only generate small amounts of electricity, she believes that the gains are vastly outweighed by the damage being forced on a precious and diminishing countryside.

Mrs A Davies.

- 9.9.6 Mrs Davies of Carreg-y-Big, Cefn Coch is the Chair of CUM and a partner in her family farm. Her personal evidence given at the cumulative inquiry session concerned the CEWT report and its section on public involvement which has been referred to by the main parties during the inquiry sessions [Doc. 37A], together with a transcript extract of the discussions at the focus group [Doc. 37B]. She complains that the use of the CEWT report to support a claim of public support for wind farms is unreliable, as the transcript is littered with inaccuracies and misleading statements [Doc. 37C].

Mr P Brachi.

- 9.9.7 He lives about 1.6km north-east of the nearest Carno wind farm turbine. He has experienced the strange tonal intrusion from the noise of turbine blades. Although originally an advocate of wind power, he now considers that the impact of too many wind farms destroys the special spiritual experience and tranquillity which the upland landscape offers. More wind farms would be a disaster for tourism and for the potential of the area to attract 'green' forms of employment and activities which would embrace, not harm, its natural qualities. For the sake of future generations we should be exploring other forms of renewable energy which can be exploited without damage to the environment.

Written representations

- 9.9.8 There have been few letters which refer directly to 'cumulative effects'. However, of the total of nearly 600 letters of objection to the wind farm proposals combined, a substantial number include some form of comment to the effect that there were already enough or too many wind farms in the area and any further wind farms should be resisted. The written representations did not raise any topics or issues different to those debated at the inquiry.

10. HUMAN RIGHTS SUBMISSIONS

- 10.1 Various submissions have been made under the Human Rights Act 1998, Schedule 1. The submission by Dr L Mytton under Article 6 of Schedule 1 is reported in the 'Preamble and Procedural Matters' initial section of this report under paragraphs 1.6.2 and 1.6.3. All other submissions have been made under Part II, The First Protocol, Article 1. A brief summary of each is as follows, with the full submission in the inquiry documents [CI Doc 38]:

Dr A Cresswell, Llanerch, Carno.

- 10.2 Owner of house, outbuildings and 2 ha of land, purchased in 1997. Household consists of 2 adults. The Cwm Llwyd wind farm and its sub-station would affect the peaceful enjoyment of her possessions. The tranquil and peaceful environment of her property and its privacy, together with the surrounding area, would be violated by the noise of turbines and the use of the access track to the sub-station. No valuation details provided [CI Doc. 38/2].

Mrs S Jones, Clegyrnant, Llanbrynmair.

- 10.3 Owner of hill farm with 1,000 ewes and 30 cows. Household of 2 adults and 3 children. The noise and visual intrusion of the Nant Carfan wind farm would violate the peaceful enjoyment of her family's possessions and devalue the property. States that the nearest turbine is some 1300m away and that the forward facing windows in the house would have views of 5 turbines. Also, views from other land in her ownership on high ground behind the house. No valuation details given [CI Doc. 38/3].

Mrs J Macdonnell, Blaen Tafolog, Mallwyd.

- 10.4 Owner of house and 8ha of land including common land grazing and fishing rights to Afon Tafolog and its tributaries purchased in 1996. Household of 2 adults and 2 children. The Nant Carfan wind farm noise and visual intrusion will affect the property value and its amenity. No valuation details given [CI Doc. 38/4].

Mr J E Owen, Pencaedu, Pandy.

- 10.5 A complaint of possible noise, but no other details given. Pencaedu is a dwelling located to the south of the wind farm site, on the eastern side of the minor road through Pandy [CI Doc. 38/5].

Comments on human rights by other parties.

- 10.6 The only applicant/appellant response to the submissions by objectors came from Powergen, the Nant Carfan wind farm appellant. On their behalf it was pointed out that Article 1 (The First Protocol) provides that a person's right to the peaceful enjoyment of possessions should not impair the right of a government to control the use of property in accordance with the general interest. A fair balance must, therefore, be struck between the protection of individual rights and the demands of the wider community interests. This is what the National Assembly will undertake when deciding the applications and the Human Rights Act does not raise any additional issues which have not been taken into account through the planning inquiry procedure.

APPENDIX C – Comments on visual assessment techniques

1. This Appendix summarises the main comments made at the inquiries about the use of ZVIs, wireframes and photographs, in the landscape and visual assessments provided in the environmental statements and inquiry evidence. This includes points made about the limitations on their use. It must also be mentioned that there was concern expressed by some objectors that the National Assembly as decision maker should not place undue reliance on those techniques in isolation when considering the wind farms proposals.
2. ZVIs are formulated from an ordnance survey digital terrain model (DTM) which uses survey points to create a computer model of the topography and landform of the countryside. Using this as a base, a further model calculates how many turbines would be theoretically visible from the land surface at any given location within the chosen study area. It was acknowledged by the parties that ZVIs prepared solely on the basis of the DTM do not take account of screening features which actually exist, such as woodland, hedges, banks, minor topographical features and buildings. They also assume perfect visibility and make no allowance for weather conditions or the diminishing influence of distance.
3. Consequently, the wind farms applicants expressed the view that ZVIs will often overstate the visual influence of a development and represent a 'worst case' situation. However, they emphasised that they do offer an initial identification of areas where the wind farms are likely to be visible. Normally, representative viewpoints are then selected for further scrutiny and field analysis, as has been done in the case of the wind farms proposals.
4. In respect of photographs, some of the objectors criticised their lack of clarity and suggested that the landscape and turbines are often not shown in a realistic dimension. CPRW contended that although a certain camera focal length may be generally accepted as corresponding to the image seen by the human eye, it does not necessarily adequately express this in landscape terms. They suggested that the photographs used in the Environmental Statements and other submissions (generally using a 50mm lens) appear to reduce vertical dimensions in relation to the horizontal, producing a 'hill flattening' effect. They contended that, in reality, more depth is seen when viewing horizons, and diagonal features, such as hedgerows, cross the photograph at shallower angles than is actually seen. The vertical compression and horizontal elongation is emphasised by the use of extended composite photos or photomontages which draws the eye away from the main focus.
5. CPRW claimed that some acknowledgement of these effects was given in the Inspector's report at the Holderness Inquiry [Doc. CL 37(D)]. In photographs used in the recent Llandinam wind farm extension proposal a 35mm SLR camera with a 70mm lens was used. CPRW say this was because the turbines were not always clearly seen in the photos, even though they could be seen by the human eye. It is considered by CPRW that a focal length of 65 – 70mm corresponds more closely to that seen by the observer on the ground.
6. Wireframes rely on a grid network defined by a digitised ordnance survey base which is converted to provide a 3-dimensional image of the wind farm from chosen view points. CPRW say that if converted from a photograph, any variation from the human eye is also reflected in the wireframe, which can diminish the height of any visualisations of the turbines.
7. The general response of the applicants to the criticisms was that care had been taken to follow accepted practice in preparing the photographs and visualisations [eg: CL Doc. 5, CD31]. It was acknowledged that photo-montages cannot give a precise model of reality, but they do

offer a reasonable representation of the scale, position and appearance of turbines in the landscape. It was pointed out that the objectors were quite entitled to produce their own material. On the matter of the clarity of photographs, much depends on the weather conditions when they were taken and the fact that the colour and siting of turbines may reduce their visual influence. In respect of wireframes it was pointed out that, as with ZVIs, they tend to overstate the visual effect if not accompanied by a photograph or field assessment, as they do not take account of intervening features or landscape elements that might in reality screen the view of the turbines.

8. The particular argument by CPRW about the use of a 50mm focal distance lens which it is alleged distorts and 'compresses' the landscape was disputed on behalf of Powergen [NC Docs. 18 and 20/4]. They suggested that if a 50mm lens did produce a flattening effect in the horizontal (landscape) image this would be exaggerated in the opposite direction when the same view is captured in portrait form. This is not true and the geometry of both images is essentially identical. Even if a 65mm lens is substituted, it only enlarges the view, since the choice of lens only affects the field of view and the scale of the image.
9. There was general agreement by all parties that it is important not to just rely on the photographs and other visual representations, but to test them in the field by comparison with the actual landscape which is seen. It must also be appreciated that they are only a part of a composite assessment of landscape and visual effects which involves a variety of data collection and analysis, fieldwork observations and informed judgements.
10. Details of the the visual and amenity assessments which have been carried out on behalf of individual developers and some of the objectors are given in the 'Landscape and visual amenity' sections in Chapters 6 – 9 of the report.

11. CONCLUSIONS

[The paragraph numbers, together with any specific additional document references, of the subject of my comments are contained in brackets]

11.1 COMMON ISSUES

Introduction

11.1.1 My conclusions commence with sections on matters and issues which are common to all the applications, before moving on to consider each site individually and cumulative impact. It should be noted that these conclusions in common have been taken into account in the individual sections, but are not mentioned in them to avoid undue repetition.

Position of Powys CC [2.1 – 2.12 and 9.2.2]

11.1.2 I note the Council's concerns about the length of time before the MC and CL applications came to inquiry, and the lack of liaison with them by the National Assembly. The Council also complain of the alleged failure by the Assembly to resolve the situation in respect of the MLP. However, I do not consider it is appropriate for me to comment on these matters other than to draw them to the attention of the National Assembly.

11.1.3 I appreciate that the decision by the Council not to take part in the individual MC and CL inquiries was a matter for them. However, I feel I must express my regret at this, as a positive input by the Council would have undoubtedly assisted the inquiry, particularly in respect of the interpretation of Structure and Local Plan policies and information on the implementation of certain strategies. In respect of time-scales to consider the proposals after call-in, I would only point out that there was a period of some 3 months between notification of the inquiries and their commencement when most of the background information was available, if the Council had chosen to participate.

11.1.4 With regard to the Council's opinions on whether or not the individual applications should be approved, they were not prevented during the period of the Article 14 holding directions from consulting on or refusing the applications. In the case of the NC proposal, section 78(5) of the 1990 Act provides that it is assumed on a non-determination appeal that the proposal was refused. It is normal practice for a Local Planning Authority to state the reason why they would have refused permission, as for example mentioned in paragraph 26 of Annex 3 to WOC 23/93.

11.1.5 In the event, the Council chose to state at the inquiry that they neither supported or objected to the MC and NC proposals, and that their 'objection' to the NC scheme did not amount to a resolution that it should be refused. It was suggested that this 'neutral' stance in respect of MC and CL could mean that the Council had no objection to those wind farms, but I consider it simply means they did not fully assess them and did not choose to form an opinion either way. At NC I have taken their objection as something which, in itself, they do not regard as sufficient to refuse the proposal but which must be weighed in the balance with other considerations.

Renewable energy issues [3.1 – 3.32]

- 11.1.6 Government policy towards renewable energy development is an important material consideration. UK Government policy and targets for the development of renewable energy sources demonstrate a strong and increasing commitment to meeting more of the UK's energy needs from renewables, in order to address issues of greenhouse gas emissions and climate change. In Wales, the National Assembly operates under a statutory duty to promote sustainable development. Recent Assembly consultation documents and policy statements identify the role of renewable energy sources in Wales as part of a sustainable approach to development and confirm a commitment to working in partnership with the UK government to deliver greenhouse gas emission targets.
- 11.1.7 The details of contracts awarded under the 5 NFFO orders for England and Wales in 1990 – 1998 indicate that onshore wind energy projects are a significant component of the range of currently developed renewable technologies, and as such are important in terms of the ability to meet short-term targets for renewable energy production and greenhouse gas emissions reductions. The Government's renewables obligation now places a requirement on the energy supply industry to obtain a minimum amount of its energy from renewable sources.
- 11.1.8 However, although scenarios put forward by the DTI imply a significant reliance on onshore wind turbines in order to meet renewable energy targets, there are no specific quotas for the proportion of energy production from renewable sources to be met by them. The awarding of an NFFO contract for a particular scheme carries no implication of a likelihood of planning permission subsequently being granted.
- 11.1.9 Although doubts have been raised about the true economic effectiveness of wind turbines, this is essentially a commercial issue for developers. The award of a NFFO contract indicates that the DTI regards a particular scheme as meeting a basic criterion of potential viability, within the prevailing financial operating terms set by Government.
- 11.1.10 Some opponents of the schemes compare the merits of onshore wind turbine schemes with other renewable technologies, both in terms of effectiveness in contributing to Government renewable energy targets and emissions savings and in terms of acceptability of environmental impact. It is also the case that other technologies are developing and may assume greater importance in future. However, wider judgements about whether one renewable technology should be pursued in preference to another are outside the scope of decisions on the planning merits of the particular proposals the subject of this report. Each proposal for wind turbine development must be assessed on its planning merits.
- 11.1.11 Non-statutory policies adopted by CCW and CPRW in respect of wind power generating proposals, whilst helpful as a means of making clear their own stance in relation to onshore and offshore wind turbine developments, have no weight in terms of the statutory policy framework against which the individual wind turbine proposals must be assessed. [MC Docs 30(b) and CL Doc 36 (1)]
- 11.1.12 Individual renewable energy schemes should not be dismissed on the grounds that they would make only a small contribution to Government renewable energy and emissions reduction targets. Nonetheless, Government renewable energy development policy recognises that the sustainable energy and global environmental benefits of a proposal must be weighed against its local environmental impacts and the need to protect the

local environment, as indicated in PPW, paragraph 13.1. This exercise clearly involves setting the scale of the benefits that would accrue against the level and significance of harm, if any, that would result in environmental terms. Government policy does not carry a suggestion that any individual renewable energy scheme must be approved or any presumption in favour of such schemes.

- 11.1.13 In Wales it is estimated that wind farms have 153.6MW installed capacity which meets 2.55% of Welsh electricity needs [CE Doc. 5/1]. The installed capacity existing in Powys is about 82MW which is over 53% of the total installed capacity in Wales, and the approved wind farms in the Montgomeryshire area contribute over 90% of the Powys total. The 3 MC, CL and NC proposals would add about 62MW installed capacity to those figures. [MC Doc 35(c), 9.4.33, 9.4.34]
- 11.1.14 In relation to Montgomeryshire on its own, CPRW have estimated its annual electricity consumption as equating to 81.4MW, so claim it is already over 90% 'self sufficient' in energy from wind [MC Doc. 35(c)]. Despite the amount of wind energy already produced in Montgomeryshire, there are no policies in the modified MLP which seek to impose a maximum wind energy capacity quota for the local area; nor do national renewable energy policies imply a level of provision in relation to an area's own energy needs beyond which further proposals should be rejected. Different areas clearly have varying potential to exploit different types of renewable energy sources. However, the capacity of an area to absorb such development without unacceptable harm to the local environment is as relevant to the extent to which additional proposals should proceed as the degree to which its natural resources and characteristics are favourable to the development concerned.
- 11.1.15 I accept that any contribution to meeting national or global targets for renewables and emission reduction must be seen as beneficial, as promoted in UK Government and National Assembly policy. However, despite the statement in PPW that Local Planning Authorities should consider their contribution to meeting local, regional and national demand, there is currently an absence of a regional strategy and targets to be achieved in Wales by the different forms of renewable energy provision. This makes it extremely difficult to assess the amount of weight to be given to that benefit when weighed against environmental impact. Since wind farms are treated as exceptions to the normal strict control over development in the open countryside, I believe there should be clear justification and indications of the degree of need which should be met in areas of the country which have the wind environments which meet the operational requirements for wind farm development. It would then be easier to establish a fair and proportionate contribution from areas such as Powys where objectors claim the local community has to suffer all of the adverse impact of wind farms when most of the benefits accrue elsewhere.
- 11.1.16 As it is, on the evidence before me I consider that the high level of contribution to Powys' energy needs made by existing wind farms in the County dilutes the argument for additional wind power schemes in regional/local terms, particularly where these would have significantly adverse environmental effects in an area which relies heavily on the attractive character and appearance of its landscape as one of its major assets.

General public attitudes to wind farms [5.1 – 5.19]

- 11.1.17 All parties at the inquiries made submissions about public opinion and wind farms, but I would emphasise that in a planning context although the substance of the views

expressed by the public must be considered, each case must be decided on its planning merits, as indicated in paragraph 4.8.1 of PPW. PPW adds that as a general principle opposition or support for a proposal is not, on its own, a reasonable ground for refusing or granting planning permission.

- 11.1.18 Surveys and research findings referred to by developers provide information about the attitudes of a sample of residents living near to a range of wind farms, of varying sizes and in differing types of location. The findings indicate that a majority of respondents do not have significantly adverse attitudes to wind farms, and suggest that misgivings about possible harmful implications such as their appearance in the landscape or noise, often dissipate in the light of experience. However, other evidence produced by opponents of the proposals indicates that many residents living in the vicinity of wind farms consider that their amenities have been harmed by such developments, principally in terms of the visual impact of the turbines and noise.
- 11.1.19 Attitudes will clearly vary according to precisely where people live in relation to a particular wind farm, as well as according to the particular characteristics of the development, individual pre-dispositions to wind turbines and the different ways in which people perceive and relate to the landscape concerned. It is therefore not possible to draw firm conclusions from this evidence beyond a broad observation that whilst many people are evidently relatively unconcerned about living in the vicinity of a wind farm, others find it objectionable. Much will depend on the specific relationship that forms the basis of the experience.
- 11.1.20 The public attitude surveys carried out by ETSU [CE Doc 37(b)] into the cumulative effect of wind turbines in mid-Wales must be treated with considerable caution, given the small sample of respondents involved, the criticisms of its methodology and the fact that this research was conducted by the wind farm industry itself.
- 12.1.21 Evidence indicates that wind farm and renewable energy information, access and education has a positive effect on public attitudes to wind farms in general. There can be little doubt that this is primarily because it creates greater awareness of the efficiencies of resource use and global environmental benefits of these energy alternatives.
- 11.1.22 The inclusion of Trannon (Carno) wind farm and the Centre for Alternative Technology in publications advertising visitor attractions in the area indicates that wind power and renewable energy sources command a certain level of public interest, and are considered to be amongst the things that visitors to mid-Wales may wish to explore. However, it does not necessarily follow that visitors to the area find wind farms a positive feature of the upland landscapes of the area. Nor does it mean that more wind farms will increase the attractiveness of the area to tourists still further, particularly if this is at the expense of other qualities of the rural landscape. The stance recently adopted by the WTB is evidence of mounting concern about the difficulties of accommodating additional wind farms in upland areas of mid-Wales, whilst safeguarding the well-being of a tourism economy heavily reliant on the scenic qualities of its rural landscape as one of its prime assets.
- 11.1.23 Claims by developers that there is no direct evidence that wind farms in the area have harmed tourism and that visitors generally perceive wind farms as an attraction are at odds with the views expressed by many in letters to newspapers, by users of many local holiday businesses and by visitors to the area surveyed by others.

- 11.1.24 As regards attitudes to wind farms by the local population in general, it is evident that there is a divergence of views about the acceptability of wind turbines in the landscape. This is not simply a question of whether a wind turbine has an inherently aesthetically pleasing design. Those opposing the proposals accept that wind turbines can be appropriate features in certain landscape contexts. Equally, proponents of the proposals do not argue that they would be acceptable in every landscape.
- 11.1.25 Opposition to the proposals by CUM reflects a particular strand of public opinion regarding wind farms in Montgomeryshire, as do the views of CPRW so far as these represent the views of its membership. Representations by members of the public against the developments heavily outweigh the few expressions of support. However, many more people have made no representations either way, possibly reflecting insufficiently strong feelings either for or against such developments to feel a need to express a view. I consider that the observations and objections of local Community Councils on proposals in their respective areas are important expressions of local opinion made by those democratically elected to represent the views of their communities.
- 11.1.26 Whilst there are differing individual attitudes to turbines, the standpoint from which each of the wind farm proposals must be assessed is firmly established by the prevailing planning policies for the area. The policies of the Powys Structure Plan and the emerging Montgomeryshire Local Plan have been the subject of extensive public consultation and review by the local planning authority and by the development plan inquiry process in the light of any objections made to policies proposed. Although individuals and groups may voice disagreement with such policies after they have been finalised, this does not diminish their status as policies produced through full consultation with the people in whose area they will apply. It is the development plan which is intended to provide the main basis for decisions on planning applications.

Landscape, amenity and wind farm policies

- 11.1.27 It is an obvious but important point that many objectors regard the siting of wind farms in attractive areas of upland countryside as quite unacceptable in principle and they consider the visibility of turbines in such areas to be an adverse effect which justifies the refusal of planning applications. However, leaving aside the question of whether the majority of people would agree with that view anyway, it is not a realistic stance in the context of approved Government or local policies. Accordingly, I have applied a test which is based on an analysis of the relevant policies referred to in Chapter 4 of this report, as follows.
- 11.1.28 Government policy in PPW, paragraph A44 and Annex A of TAN8, accepts that wind farms must be located in areas which are economically viable and that these are often open, exposed upland locations, which may also be in attractive landscapes. It indicates that the test to be applied is to weigh the desirability of exploiting the energy resource against the visual and environmental impact [4.3 – 4.4]. As part of this assessment it must be borne in mind that planning seeks to regulate the use of land and to protect amenity in the public interest. It does not protect the private interests of local people against the actions of developers, for example in respect of a loss of view from dwellings, other than where considerations of public interest may at the same time serve that purpose.
- 11.1.29 With regard to the local policy test of acceptability, it is appropriate to comment at this stage on the interpretation of certain Structure and Local Plan policies which are

common to all the proposals [4.6 – 4.10] and on which there was considerable debate at the inquiries. Although some objectors sought to re-visit issues that had been discussed during the Local Plan inquiry, I have concentrated on the interpretation of the policies as accepted or modified following that inquiry.

- 11.1.30 Dealing first with the statutory development plan, the Powys Structure Plan, it emphasises in paragraph 4.37 that its countryside is of an extremely high scenic quality and worthy of a high degree of protection. Policy EC3 and paragraph 4.41 then proceed to identify SLAs within the County which have character which is particularly important in landscape terms. In terms of renewable energy, the PSP recognises that its benefits must be balanced against any adverse environmental effects. Paragraphs 4.31 and 4.32 comment that high wind speeds for wind energy projects are often found on upland moors characterised by remoteness and unspoilt landscape. The PSP then adopts a supportive but cautious approach to wind farms, especially in view of the amenity impact they can have. Against this background I would comment on policies EC3 and EC20.
- 11.1.31 Policy EC3 relates to SLAs and common land. It requires development to be appropriate and sensitive to their quality and character and capable of satisfactory integration into the landscape. This requires a judgement to be made as to what constitutes ‘sensitivity’ and ‘satisfactory integration’ in a particular case. In the case of wind farms, policy EC20 specifically states that schemes will be permitted providing that, among other things, they would not have any “*unacceptable adverse effects*” on a SLA. I conclude that if there are no such unacceptable effects on the SLA then a wind farm can be judged to be sufficiently sensitive to meet the requirements of policy EC3.
- 11.1.32 The Montgomeryshire Local Plan had still not been adopted by the close of the inquiry. However, it has proceeded through all the stages towards adoption and there have been no objections to the policy modifications relevant to the wind farm inquiries. In line with paragraph 4.15.1 of PPW, I attach substantial weight to its policies as it has reached such an advanced stage.
- 11.1.33 The first point to make is that policy ENV2 provides that the location and scale of development should accord with the opportunities identified in the MLA, not the MLP text which only gives summarised findings of the MLA. At the same time it states that the special features to be safeguarded are as listed in the Local Plan text. The MLA suggests that there may be suitable locations for wind farms on some of the hillslopes in the ‘hillslopes and saddles’ landscape character areas and also mentions that plateaux provide the type of location which wind farms require.
- 11.1.34 MLP policy ENV3 deals with SLAs and generally requires that development should be appropriate to their character and high landscape quality. However, it then goes on to say “*unless an exception is justified for a wind farm development complying with other Local Plan policies.*” From the Inspector’s report of the MLP inquiry, it appears that the view of the former District Council was that wind farms would not be ‘appropriate’ to the intrinsic character and landscape quality of a SLA, so the Inspector accepted that wind farms must be included as an exception to that positive test. He resisted the objectors’ desire for an embargo on wind farms in the SLA because he felt they would not inevitably always be “*unacceptably harmful*” to the SLA, given that it has such a wide variety of scenery. Policy ENV3 thus incorporates wind farms as an exception which may be allowed providing they conform to other relevant policies. Most of those other relevant policies use phrases such as “*unacceptably adverse*” or “*significantly*

detrimental” which imply a degree of harm is acceptable. This approach is confirmed in the case of wind farms by modified policy ENV24 which is the Local Plan policy linked with policy EC20 of the Structure Plan. This states that applications will only be approved where they do not “unacceptably compromise” the environmental quality of Montgomeryshire.

- 11.1.35 It follows that the test to be applied is similar to the phraseology in PSP policy EC20 and in line with the comments on potential environmental and wind energy conflict now contained in paragraph 5.142 in Appendix (i) of the Modifications to the MLP. It says that the Council appreciates that *“the wind resource is at its most generous in the uplands of Montgomeryshire. Equally, it appreciates that such (wind farm) developments give rise to conflicts with policies designed to protect the environment. This is especially so in areas designated in this plan as Special Landscape Areas. The Council appreciates that some cases will have to be resolved in favour of wind energy proposals and in other cases in favour of landscape protection, and this is reflected in the content of policy ENV3.”*
- 11.1.36 The next matter to consider is the scope of the landscape character which should not be unacceptably affected or compromised. This can be broadly assessed by examining the description of the Western Uplands SLA in the PSP, MLP and MLA. Its main features are described as the main blocks of plateaux, plateau margins and narrow valleys which fringe them. The plateau areas are described as exposed, wild and open, with moorland vegetation and a feeling of remoteness. They often have extensive views across ridge tops and of higher peaks. Reference is also made to scenic routes across the plateaux and important viewpoints, and the same special features and their settings are listed under the plateau margins character type. Special features of the narrow valleys character type include gorges and lakes/reservoirs. I believe that these factors give a broad indication of the character, quality and value of SLA environment which should not be unacceptably adversely affected. In addition, it is worth remembering that national planning policy seeks to protect the countryside for the sake of its landscape and other assets such as its ecological, archaeological and recreational value. Consequently, most new built development in the open countryside is strictly controlled.
- 11.1.37 TAN8 refers to the visual impact of turbines on the landscape and the need to minimise that impact. It describes a turbine as a distinctive vertical feature with the characteristic of movement not normally present in man made structures. I do not believe that such structures can be congruent with the plateau landscape and that the ML, CL and NC proposals would inevitably be out of keeping with the natural character and sense of place of their surroundings. Consequently, I do not accept the contention of the applicants that their schemes could be ‘appropriate’ in terms of the positive test of MLP policy ENV3 and must be regarded as ‘exceptions.’
- 11.1.38 This leaves the question of whether any or all of the proposals would have unacceptable adverse effects under MLP policy ENV24 and my conclusions concentrate on this. In so doing I have taken account of the acceptance in national and local planning policies that, unlike most forms of development, wind farms can be sited in the open countryside in appropriate locations. This is shown by the existing wind farms which have already been approved in Montgomeryshire and the Western Uplands SLA. However, they must figure in the assessment of local cumulative impact, as indicated in paragraph A49 of TAN8.

- 11.1.39 As a separate matter and for avoidance of doubt, my interpretation of PSP policies on common land is that they are important for their open and unspoilt appearance as stated in that plan and so any development within or adjacent to commons should be appropriate to that character under policy EC3. I consider that PSP policy EC7 is not relevant, in itself, as I believe it is intended to only relate to development actually sited on common land, as indicated by PSP paragraph 4.49 and MLP paragraph 5.51 which refer to development “*of*” and “*on*” common land. The MLP, policy ENV3 which shadows PSP policy EC3 does not actually include common land, which appears to leave PSP policy EC3 on its own. The important point arising is that it must follow that wind farms adjacent to commons should comply with the terms of that policy as it does not make provision for them to be regarded as an exception, as is the case with MLP policy ENV3.
- 11.1.40 Having established the main policy context, I now summarise my approach to assessing the landscape and visual amenity issues based on the approaches adopted by the main parties. An initial point to make is that there was no significant dispute among the main parties over the extent of visual influence of existing and proposed wind farms or the general locations of viewpoints. My considerations have covered 2 main topics, first any changes in the character and quality of the landscape and second, visual amenity mainly in terms of views enjoyed by the public. This includes consideration of the extent, if any, to which a proposal alone or in combination with other schemes becomes a specific characteristic of the landscape and the way the experience associated with the landscape, a particular view, or a linear route may be affected. With regard to cumulative effects, I have included situations where sites would be seen from areas of mutual visibility and when sites are seen sequentially when passing through a landscape.
- 11.1.41 I appreciate that the assessment of the significance of any changes caused by the wind farms largely rests with professional judgement and there was disagreement between the main parties over the terminology used to describe the quality of the landscapes and the degree of significance or magnitude of visual changes. However, as I have already indicated, there are certain landscape and visual elements of importance to the plateau landscapes which should be safeguarded under MLP policy ENV2. This is against the background that the development plan regards the Western Uplands SLA as a high quality landscape. I consider it is reasonable to regard any significant adverse changes to those elements as being a substantial concern. It is those concerns which I have concentrated on in my conclusions, rather than those changes which may also be adverse but not unacceptably so.
- 11.1.42 One other matter to refer to is the comments on visual assessment techniques contained in Appendix C of this report. My only observations are to draw the attention of the National Assembly to the final sentence of paragraph 1 of the Appendix and to say that I generally concur with paragraphs 7 and 9. In particular, it must be recognised that photographs and other visual representations have limitations which must be supplemented by observations in the field and that they are only part of a composite overall visual assessment.

Background to noise assessment.

- 11.1.43 The following matters form a common background on the approach to the issues dealt with under the specific wind farm sections. Detailed advice on the assessment of noise from wind turbine developments is contained primarily in TAN 8 : ‘Renewable Energy’, Annex A, with other relevant guidance in PPW and TAN 11 ‘Noise’. TAN 8 (Annex A)

states that although BS4142 has been advocated as the standard which comes nearest to dealing with the issues encountered in wind turbine development, that standard is intended to assess the noise from industrial premises or fixed installations in mixed residential and industrial areas. BS4142 does not specify acceptable noise levels. Using BS4142 to assess wind turbine noise in rural areas is recognised as potentially inappropriate, and the scope of BS4142 specifically precludes situations where background noise levels are below 30dB. The potential difficulty of accurately recording noise levels in windy conditions is also highlighted.

- 11.1.44 Government guidance does not state that the DTI NWG criteria should be adopted as the standard by which the acceptability of turbine generated noise is judged. However, TAN 8 refers to the DTI NWG ‘The Assessment and Rating of Noise from Wind Farms’ [CL Doc. 25] as a source of detailed information on wind turbine noise. The methodology developed by the DTI NWG to assess the potential noise impact of wind farm proposals reflects detailed research into the various aspects of wind turbine noise propagation. It takes into account the various factors affecting the extent to which turbine noise might be heard at a given location, including distance, wind speed and direction relative to the direction of the turbines, the nature of intervening topography and background noise characteristics at the location. This approach is consistent with advice in TAN 8 that, where there is concern about whether BS4142 is appropriate as a means of determining potential or actual perceived noise nuisance, the combined effect of the wind turbines should be determined by reference to the particular character and sensitivity of the area.
- 11.1.45 On the question of sensitivity, all the proposed sites are located within a generally quiet rural environment. TAN11, paragraph 13, recognises this situation and states that account should be taken of the very low background noise levels in some rural areas where noise generation may be especially disruptive. The DTI NWG guide also acknowledges the situation of quiet day-time rural environments and it adopted noise levels which “*offer a reasonable degree of protection to wind farm neighbours without placing unreasonable restriction on wind farm development*” and expressed the group’s concern to “*properly protect the external environment*”. I consider that the approach adopted by the wind farm applicants based on the DTI NWG guidelines is an appropriate method for assessing noise which reconciles the potentially conflicting interests as set out in the foregoing quotation.
- 11.1.46 It must be appreciated from the previous paragraph that compliance with the guidelines does not necessarily mean that the turbines would not be heard, but that the noise levels are within limits which would not cause undue disturbance. I accept that this might mean that some people would still feel noise effects and it is recognised that the level of disturbance experienced may not just depend on the noise itself, but the receptor’s attitude towards the noise source in general.
- 11.1.47 One other general matter is that the noise limits are directed at conditions at the nearest noise sensitive properties. This does not take account of the need to consider the effect of noise on the enjoyment of areas of landscape, wildlife and historic value close to turbines, as indicated in paragraph 4.4.3 of PPW.

Public rights of way and the CROW Act 2000.

- 11.1.48 The applications sites all have effects on rights of way which, as stated in paragraph 4 of WOC5/93, the Government regard as a major recreational resource which provides the opportunity to experience the immense variety of the landscape. The PSP and MLP

contain policies to promote access to the countryside through the rights of way network and also emphasise the status and importance of the Glyndwr's Way National Trail. This is designated by CCW to provide a long distance off-road route for people to enjoy natural beauty and open air recreation. MLP policy LD16 seeks to not only protect the trail itself from development, but also to ameliorate any adverse effect on its setting. I have taken due account of the likely effects of the proposals on the use and enjoyment of rights of way both within and around the application sites, in the light of the foregoing context.

- 11.1.49 The CROW Act was passed during the course of the inquiry and was given considerable weight in the evidence of CCW. It introduces new rights for open-air recreation over 'access land', which is mainly open country and common land [CE Doc. 41 & CL Doc 35(3)]. The contention of CCW was that this would make the wind farm sites and surrounding areas much more accessible than at present, which would mean that the visual impact of the proposals could be perceived from much wider areas, as the public would no longer be confined to existing rights of way.
- 11.1.50 I agree with CCW that this situation will eventually occur, but it carries a considerable amount of uncertainty at present for several reasons. First, it will probably be several years before the mapping of open country has taken place and commencement orders made, although I realise that common land is already identified. Second, there is a right of appeal against the mapping of land as open country, so there will be disputes which require resolution. Third, I believe that access land does not include improved or semi-improved grassland. This category covers a substantial amount of land in the wider surroundings of the application sites and within the sites themselves. Consequently, it is not possible to assess the specific effects of the CROW Act with a reasonable degree of probability at this stage. Accordingly, whilst I acknowledge the possibility that eventually the new rights of access are likely to result in an increase of public views of the turbines, I have confined my conclusions to the effects on existing public viewpoints and rights of way.

Precedent.

- 11.1.51 Some objectors have asserted that approval of the wind farm proposals could constitute an undesirable precedent for further applications and this is another reason why they should be refused [9.8.21]. I appreciate that the approval of development may encourage other applications, but I would draw attention to paragraph A18 of TAN8 and make 3 points on this issue. First, if an application is generally acceptable then I consider the fact it would form a precedent is not sufficient reason to refuse it. Second, any future applications, whether for new sites or extensions of existing sites, would have to be considered on their own merits. This would include any contribution to cumulative effects. Third, I consider that the approval of existing wind farms and the provisions of development plan policies have already set a form of precedent in that the siting of new or extended wind farm development in Montgomeryshire, including the SLAs, is not ruled out in principle. This has left the question of acceptability or otherwise to be decided on the individual merits of each case, as I have already indicated.

Site selection [6.10.1 – 6.10.5, 7.10.1, 8.10.1 – 8.10.4]

- 11.1.52 The current EIA Regulations require an "outline" of main alternatives studied and an "indication" of the main reasons for the choice, but there is no requirement on a developer to undertake such action in the first place. Although this exercise may

involve a comparison of various sites, I consider it is something different to any requirement to show a need for a particular site above others. In the context of environmental assessment, I do not accept the criticism by CPRW of the MC, CL or NC schemes as I consider the information available to the inquiry to be adequate in terms of the Regulations.

- 11.1.53 In a planning context I accept that the availability of alternative sites can be material, especially where it is strongly argued that the need for a development outweighs its environmental disadvantages. However, I consider the following points must be considered in respect of the wind farm proposals. First, none of the relevant existing or emerging development plan policies expressly raise the issue of exploring alternative sites. Second, the cases for all the applicants start on the basis that they should not have to prove an overriding need, as they contend the developments would be appropriately sited and would not have unacceptable adverse effects. Third, there is a national policy objective with regard to renewable energy, which involves a need to pursue a number of projects if it is to be achieved. The search by power companies is to find a number of sites for development, not alternatives for the same scheme. Fourth, given the attractive landscape throughout Powys, it would be difficult to identify any alternative viable sites for the MC, CL and NC projects which would not engender environmental and amenity objections. Finally, no specific alternative sites in the area were identified for consideration by objectors. I conclude that this is not a situation where alternative sites need to be considered.

Grid connection [1.5.1, 6.2.6, 6.11.10, 7.2.11, 8.2.8, 8.4.41, 8.4.46, 8.1129 (9)]

- 11.1.54 In paragraph 1.5.1 of the report I have set out the reasons why I have been unable to deal with the transmission line routes and grid connection. However, I do believe that in an ideal situation the routes for such lines should be considered in tandem with each wind farm proposal. This is because it is obvious that such lines have an integral relationship with the particular wind farm and themselves can have an effect on the character and appearance of the landscape through which they are taken. I also note that the MLP has policies DC18 and ENV29 which relate to transmission lines, although it is not clear how these would be applied or enforced when overhead lines are normally dealt with under non-planning legislation.
- 11.1.55 I consider that it is reasonable for me to draw attention to the fact that each overhead transmission line route will have its own effects, additional to that of the wind farm itself, upon the following areas of predominantly open countryside. In the case of NC the probable route would travel south-east over Glwyndwr's Way and through the upland hills and valleys extending to the north-east of the A470 trunk road, towards Carno. From the CL site its line would extend down through the narrow valley landscape east of Cwm Llwyd to join the existing 132 k/v line north-east of Carno; and from MC the likely route corridor would start in the vicinity of bridleway 26 and extend past the Bwlch-y-Garreg lakes towards the hamlet itself. Clearly, the applicants for the lines would attempt to minimise their impact and mitigate any adverse effects. For example, I note the ES for MC indicates a willingness for the line to be buried if it passes through any sensitive visual or ecological areas, particularly near the Bwlch-y-garreg lakes.
- 11.1.56 However, for the reasons already given, an assessment of whether any detailed proposals for transmission line routes would have any unacceptable significant effects must be left to consideration of future applications under the Electricity Act procedures, including

consultation with the Local Planning Authority. It is my conclusion that the concerns of objectors are safeguarded by that procedure and its obligation to have regard to the preservation of natural beauty and to mitigate effects on the countryside.

Human Rights submissions [10.1 – 10.6]

- 11.1.57 I have dealt with the single plea under Article 6 in Chapter 1 of this report [1.6.2 – 1.6.3]. All the other oral pleas were made under The First Protocol, Article 1 on the basis that the specific interference would be the effect on the peaceful enjoyment of their property. The issues raised have been dealt with as planning considerations during the inquiry. The Article requires the balancing of the rights of the individual against the general public interest as applied by the National Assembly, which allows a wide margin of appreciation.
- 11.1.58 Before commenting on the individual cases, I would make 2 general points. First, I consider that although Article 1 concerns peaceful enjoyment of possessions, it does not in principle guarantee a peaceful environment covering a wide area or protection of private views from a dwelling of landscape some distance away. Second, none of the properties would be physically affected by the proposals.
- 11.1.59 In the particular case of Dr A Cresswell I consider that when she purchased her property in 1997 she should have been aware of the Structure and emerging Local Plan policies which did not rule out wind farms in her locality and the history of the CL site which goes back to 1991. The Mynydd yr Hendre application was submitted in 1994 and was not withdrawn until 1998. The current CL scheme was itself originally submitted in October 1997.
- 11.1.60 The inquiry evidence shows that that noise levels at her dwelling, Llanerch, would be well within the NWG guidelines and noise conditions would be placed on any wind farm approval. Much of the access track serving the sub-station is already a public right of way and is elevated above her dwelling and about 60 – 70m away. The number of vehicles visiting the sub-station when it was operational would be minimal. Taking these considerations into account, it is my conclusion that although there could be some intermittent interference with the enjoyment of her property on occasions, I do not consider this would be serious or result in a substantial reduction in its value or render it unsaleable. I conclude that a disproportionate burden would not be placed on her. However, as I have recommended that the CL application is refused I do not address the question of whether a decision in accordance with that recommendation would result in a violation of her rights. If the Assembly makes a decision to differ from my recommendation, they have my assessment of the degree of the interference. The question of whether this would result in a violation is a matter for them to determine.
- 11.1.61 With regard to the submissions of Mrs S Jones, Mrs J Macdonnell and Mr J Owen about the NC scheme, I have the following comments. The evidence shows that any noise effects at Mrs Jones's property would be well within the NWG guidelines and unlikely to cause significant disturbance. Noise would also be controlled by conditions if a planning permission was given. She would have private views from her property looking upwards to see the upper parts of several turbines, but they would be contained within a broad vista at a distance of 1.3km or so. There is no evidence of a possible effect on the property value or that it would be unsaleable. In respect of Mrs Macdonnell, it could be argued that she should have been aware of a possibility of a wind farm development in the NC locality, given the policies in the Structure and Local

Plans and the history of nearby sites. The Cemmaes wind farm already existed when she purchased her property in 1996 and permission had been given in 1993 for wind monitoring masts on the NC site. Her property would be about 1km from the nearest NC turbine. The noise levels are estimated to be within the NWG guidelines and would also be controlled by conditions on any permission. The evidence indicates that the NC turbines could not be seen from her property, so there would be no interference with visual amenity.

11.1.62 It is my conclusion that although the NC wind farm might result in some interference with the peaceful enjoyment of the properties of Mrs Jones and Mrs Macdonnell, the effect would not be serious given the distance of their properties from the site and the evidence on noise and visual amenity at the inquiry. There is no evidence to show that the value of their properties would be seriously affected and substantially diminished or rendered unsaleable as a result of loss of amenity and enjoyment, so as to constitute a disproportionate burden amounting to a partial taking of property. With regard to the submission of Mr J Owen about noise, this contains no detail. His dwelling is about 2km from the nearest turbine position and the evidence suggests that there would no significant noise disturbance, with conditions imposed on any permission.

11.1.63 As I have recommended that the NC application is refused I do not address the question of whether a decision in accordance with that recommendation would result in a violation of the rights of Mrs Jones or Mrs Macdonnell or Mr Owen. If the Assembly makes a decision to differ from my recommendation, they have my opinion on the degree of the interference involved and the question of whether this would result in a violation is a matter for them to determine.

11.2. PROPOSED MYNYDD CLOGAU WIND FARM

Energy supply and local effects [6.3.1 – 6.3.20]

11.2.1 The 17 x 660kw wind turbines would have an installed capacity of 11.22MW and would meet the equivalent annual electricity demand of around 7,500 homes. When operating at full output, it would supply power to the equivalent of 25,000 homes. Although the output from wind farms is intermittent and variable, since it depends on wind conditions at the site, this would nonetheless be a significant contribution to overall energy needs, viewed for example in the context of total households in Montgomeryshire. The scheme would clearly make a proportionally much smaller contribution to Wales or UK energy requirements; however, this is not a reason to dismiss it as not worthwhile .

11.2.2 The scheme would provide significant savings of atmospheric pollutant emissions compared to more conventional power station sources, although advances in power station technologies are resulting in reduced greenhouse gas emissions. Notwithstanding that there are life-cycle emissions of SO₂, associated with the construction of turbines, it is nonetheless a relatively clean and sustainable means of energy production. The proposed development would contribute to the attainment of Government targets concerning greenhouse gas emissions during its lifetime of around 25 years. This is a significant consideration in view of the relatively slow progress to date in progressing renewable energy schemes to implementation. Although other renewable energy technologies and energy conservation measures may have the potential to make a bigger contribution to combating global warming, this does not negate the benefits which would accrue from this scheme.

- 11.2.3 It is possible that a significant proportion of the £1.5m expenditure on the civil and electrical construction works would be invested locally, although there can be no guarantee of this. During the construction phase there could be employment for up to 30 people locally, although this would be for a relatively brief period. Local supporting businesses such as hire firms, fencing contractors and hotels would also benefit over this period. Once operational the wind farm would employ, at most, 1 or 2 full-time service personnel. It would also provide income to the landowners and generate business rates.
- 11.2.4 Set against this is a potential negative economic impact on local holiday businesses and outdoor pursuits in the area. However, whilst operators of holiday caravan parks at Adfa and Cefn Coch clearly have genuine concerns about the effect of the proposal upon their businesses [6.9.8 – 6.9.11], it is unclear to what extent potential users of these sites would be deterred. Studies carried out elsewhere are inconclusive as to the effects of an individual wind farm development on tourism, in terms of assessing any negative as well as positive aspects. The chief impact of the proposed wind farm upon users of these caravan parks would arise from middle-distance views of turbines at a range of around 2 - 2.5km. No evidence has been submitted of significant outdoor pursuits activities in the immediate vicinity or wider surroundings of the site which might be adversely affected by the proposal and thereby have adverse economic implications for the area.

Landscape and visual amenity [6.4.1 – 6.4.56]

- 11.2.5 The MC site straddles the boundary of the Western Uplands SLA where plateau and hillslopes/saddles landscape character areas merge. The PSP states in paragraph 4.34 that the exact boundary of the SLA will be detailed-up in the Local Plan and MLP policy ENV3 refers to SLAs as identified on the Proposals Map. Unfortunately, the boundary has not been clearly defined, but I accept that as many as 10 of the proposed 17 turbines could be just outside the SLA, which has some relevance in policy terms [6.4.1].
- 11.2.6 Outside the SLA, PSP policy EC20 is supportive of wind farms, providing special consideration is given to landscape issues and subject to other non-landscape criteria. MLP policy ENV3 only applies to land within SLAs and its policy ENV24 suggests wind farms which do not “unacceptably compromise” environmental quality will be approved. Policy ENV2 requires development to be located in accordance with the opportunities identified in the MLA. This states that the hillslopes/saddles areas which often have less sensitivity than plateau areas may have suitable locations for wind farms, but indicates that any plateau sites must be selected with great care. This seems to suggest a greater enthusiasm in principle for sites being located outside the SLA on hillslopes/saddles compared to those on plateaux within the SLA, even though both landscape types may be acceptable in appropriate circumstances. Any site must not cause unacceptable adverse effects on the landscape and amenity of the surrounding area.
- 11.2.7 In the context of MLP policy ENV2 an added issue raised in respect of MC is the reference in the text to the “immediate” area around Garreg-hir as unlikely to be an appropriate wind farm location. The applicant argues that the MC site is not within this area. Having regard to the distance of 2.5km between the viewpoint and the nearest turbine, the general dip in levels across Nant Llyn-mawr between the MC site and the foot of Garreg-hir, and the intervention of the Bwlch-y-garreg lakes and metalled road, I agree with the applicant on this matter.

- 11.2.8 In respect of the impact of the proposal on the wider landscape, in distant views up to 20km away from the site its turbines might be seen from certain fragmented localities, such as the hills south of Caersws and Newtown and the undulating hills between Llanwddyn and Meifod, but would tend to recede into the extensive landscape area visible from that distance where often only blade tips would be visible. Some glimpses of turbines might be obtained from the main roads south of Caersws and Newtown, but I do not consider this would be harmful.
- 11.2.9 I believe that the distance of the site from other existing wind farms and the limited overlap of its visual influence with that of existing schemes to the south and south-west over 15km away do not represent unacceptable effects. In the main, the zones of influence of the existing wind farms do not extend to the north of the MC ridge. There would be some intervisibility with other distant wind farms from high vantage points, but that is not unexpected. In terms of intervisibility, proliferation or cumulative impact with existing wind farms I consider the proposal is acceptable and would not conflict with MLP policies ENV24 and 25.
- 11.2.10 In the area closer to the site within about 7km it is quite well contained by landform to the south, south-east and to the west beyond Garreg-hir. The main zone of visibility is to the north and north-east. That area is not greatly influenced by existing wind farms and so MC would create a largely new zone of influence, particularly covering the Adfa, Llanllugan, Cefn Coch and Tregynon localities, and the minor road network in an arc above the Afon Rhiw to the north of the site between Pant-y-ffridd to the east and to the west of Cefn Coch.
- 11.2.11 However, I believe that the relatively small scale of the wind farm, its location below a ridge and seen mainly set against a sloping hillside, would significantly mitigate its impact. In the main views of the site from the north it would be set in an extensive vista of different landscape types and textures, with a foreground of field enclosures, trees and hedges, and rolling hills, rather than against a single type of landscape character. It follows that it would usually occupy only a small proportion of the field of vision. Views from lanes would often be broken or screened by the topography, banks, trees and hedgerows. The Cefn Coch – Carno road is a scenic route and the site would be clearly seen at various points along that road. However, this would be at a distance of about 3km where the turbines would be seen within an extensive view of varying landscape features, including Tanyfoel quarry as the road approaches the CL site.
- 11.2.12 The MLP lists important viewpoints as a special feature to be safeguarded and the applicant acknowledges that Garreg-hir is an important and locally noted viewpoint [6.4.7]. The nearest MC turbine would be only 2.4km from the ridge and the wind farm would be clearly seen in the foreground of the panoramic eastward views, although occupying a narrow angle of view. I am in no doubt that it would detract from the visual experience which many people would ascend Garreg-hir for, namely to enjoy the panoramic views over the whole of Mid-Wales and parts of Shropshire, as described in the MLA. However, much of the panorama to the south and east can also be enjoyed when walking up bridleway 26 towards the wind farm site, albeit viewed from a lower level. Also, I consider the most striking view from Garreg-hir is towards the distant mountains to the north and the MC scheme would not unduly affect that vista. Taking all the foregoing factors into account, I find that although the special attributes of Garreg-hir would be compromised, this would not be to an unacceptable extent.

- 11.2.13 The site could be seen from parts of the small settlements and the Cefn Coch – Carno road around 3km away, but although the wind farm would become a feature of views from that area I consider it is sufficiently far away not to be unduly dominant, nor would it preclude more distant vistas to the east and south-east. Looking due south from dwellings, the Cefn Coch public house and caravan parks in that area, the wind farm would not directly fill the view, but be seen roughly at a 45 degree angle away to the south-west. Also, some of the views from the living rooms of dwellings in the settlements across their rear gardens and from parts of the caravan parks are partly screened by trees and hedges. From the minor road in the Carmel locality to the north of the site some of the scattered properties are just over 1.5km from the site, but they would be largely screened from it by vegetation and the Cefn Gwyn ridge. The site would only be seen from a few short stretches of main road 10km or more away along the A470 north-east of Llanidloes and the A483/489 south of Newtown, and I would not regard this as a significant adverse effect.
- 11.2.14 Footpath 27 passes through the north-west corner of the site and along Cefn Gwyn. From it the turbines would be seen, often rising above the path and some within about 250m, so would appear dominant. However, the existing slopes curtail some views and that to the north-east would not be unduly affected. The footpath 25 to the east of the site would end with an initially dominant view of the turbines extending away to the west, but the use of this path appears to be limited and restricted by its sudden curtailment.
- 11.2.15 I accept that bridleway 26 along the ridge to the south of the site is an important local route which extends from the Adfa area and links through to Garreg-hir, the nearby lakes, and Bwlch-y-Garreg. It offers fine and varied views which are interrupted as it rises and falls. The wind farm would create a major visual change for users of the bridleway, but there is some mitigation from the siting of the turbines several hundred metres down-hill away from the path. The turbines would be seen down the slope to the north and against the higher ground and fine distant vista of the peaks beyond, so would interfere with that view which is already marred to some extent by the Tanyfoel quarry. The vista to the south and south-west across Bryn-y-Fawnog Common where existing turbines can be seen on the skyline would be unaffected and that to the east towards Shropshire not affected until about half way along the site. Given the distance of the proposed turbines from the common, I am not sure that the policy to protect its character from adjacent development is applicable, but in any event I do not consider the essential openness of that area would be unduly affected.
- 11.2.16 None of the type of special features identified to be safeguarded under MLP policy ENV2 for hillslopes/saddles are harmed by the proposal. The site itself has large tracts of grassland cover and is on the edge of the transition between the wilder upland plateau landscape and the gentler area of rolling hills and field enclosures to the east. I consider that the area of the turbine positions itself contributes little to the plateau features of open moorland, viewpoints and scenic routes and its effect on such features further away would be limited. The overall effect on the SLA character would be not be substantial and the main areas of new visual influence created would generally affect landscape falling outside the SLA. In terms of the test in PSP policy EC20E I do not consider the adverse effects of the wind farm on the landscape would be unacceptable.

Ecology and Ornithology [6.5.1 – 6.5.21]

- 11.2.17 The site as a whole is of limited ecological value, with much of it having been improved for agriculture. The only significant problem identified is the siting of turbines 7 and 17 and access tracks within small areas of species-rich wet heath and base-rich flush on the eastern side of the site. These habitats are uncommon in Montgomeryshire and I note the enclosures concerned are linked with unimproved marshy grassland areas outside the site to the south-east and north of the Crygnant Brook which are of some importance. Although I do not consider that the habitat disturbance is sufficient to warrant deletion of these turbines, PSP policy EC10 and MLP policy ENV9 seek protection of such areas, if possible. Accordingly, as it is possible to re-site turbine 7 without compromising the viability of the scheme as a whole I consider it would be reasonable to require this by condition.
- 11.2.18 The ornithological interest of the site centres on its use by skylark, meadow pipit and black headed gull. In the case of the skylark and meadow pipit it is lowland agricultural practices which have mainly contributed to their UK decline. In the upland areas they are widespread and I accept the evidence provided by the applicant that studies have shown that these species are not significantly affected by wind farms. This is not to say that there might not be some initial abandonment of current bird feeding and breeding territories, as acknowledged in the ES, but the long-term effects would probably be small. The black headed gull has a colony at Llyn-y-Tarw and a smaller one at Llyn Mawr SSSI about 1.2km from the nearest turbine. There has been a substantial decline in this species nationally and locally and the ES suggests it uses the MC site for feeding. I consider it could suffer some displacement by construction of the wind farm, but there are other foraging areas nearby, so I do not regard this as an overriding problem. Also, the risk of bird strikes on the turbine blades, now sited away from the ridge, is extremely low.
- 11.2.19 The applicant has resisted the requests of some objectors to prepare a management scheme for the site to conserve and enhance the semi-natural habitats. I accept that this can be a way of mitigating any predicted adverse effects and can also be a positive tool for avoiding potential future damage to the existing important habitats by agricultural improvement and drainage. Such a scheme might be desirable, but I estimate around 80% of the site is improved or semi-improved grassland and the habitat loss as a direct result of the wind farm would be limited as most of the turbines are sited away from important habitats on improved grassland. I conclude that the need for such a scheme as a direct result of the wind farm proposal is not sufficient to regard its omission as a significant shortcoming in this particular case.

Noise [6.6.1 – 6.6.24]

- 11.2.20 I have taken account of the advice on noise in PPW, TAN8 and TAN11. For reasons given under the section on common issues I consider the DTI NWG guidelines are appropriate for use in assessing the effect of wind farms on noise sensitive properties. With regard to those properties, I consider that although the background noise measurements initially undertaken at Ty Uchaf were inadequate, this was rectified by further measurements at the property. Whilst the noise meter utilised on the second occasion had a lower sensitivity threshold of 28dB(A), the recorded data shows background noise levels significantly above this at all times. I see no reason to doubt the accuracy of this data, given local background noise influences such as stream noise. The background noise levels recorded at Ty Hir and Castell Uchaf were used as the

basis for assessing noise impact at other properties. I consider that the recorded background noise levels were sufficiently low to enable this procedure to be safely adopted in this case.

- 11.2.21 There are few dwellings close to the site, with the closest being some 820m from the nearest proposed turbine location. Noise impact predictions were undertaken for 27 properties, including all dwellings within 1km of any proposed turbine site and a comprehensive sample of other dwellings in all directions up to 3km away. In my view the range of properties selected was sufficient to provide a comprehensive assessment of noise impact.
- 11.2.22 The predicted noise levels for all of the 27 dwellings were below 35 dB(A) in all wind speeds. Predicted levels for the 6 dwellings identified as potentially most affected would be within DTI NWG recommended limits relative to background noise for day-time hours (background level +5dB, subject to an absolute lower level of 35dB where this would be a higher value). The night-time sleep disturbance criterion of 35 dB(A) (internal, with window open for ventilation) would also be satisfied.
- 11.2.23 Although the DTI NWG standard has no formal status in planning policy terms, the Council's Environmental Health Officer, having scrutinised the noise assessment, does not object to the proposal. In my judgement the evidence indicates that whilst the turbines would, in certain circumstances, be audible at a small number of dwellings near the site, the level of audibility would be low and unlikely to be apparent indoors. Notwithstanding criticisms that the DTI NWG threshold for determining acceptable noise levels has been selected by the wind power industry itself and designed to enable wind farm developments to proceed rather than providing an impartial measure of acceptability, the assessment nevertheless provides a reliable picture of the extent to which individual locations are likely to be affected in noise terms.
- 11.2.24 On the basis of all of the evidence I consider that the likely noise impacts identified in respect of neighbouring dwellings would not result in noise levels so high and persistent that significant harm to living conditions would result. For this reason I consider that residential noise impact is not an overriding objection in this case. The conditions proposed would provide an effective safeguard against noise levels exceeding the anticipated levels.
- 11.2.25 However, noise from the turbines would be audible under certain operating conditions to varying degrees at most of the locations assessed. In very quiet rural environments there is a possibility that turbine noise below the DTI NWG threshold would, because of its different character to other noises in the countryside, be perceived by some as distracting and intrusive.
- 11.2.26 For such people it would be the case that audible noise from the turbines, because of its foreign character in a quiet rural environment, could constitute a negative impact. Those affected might also include those persons using rights of way near the wind farm.

Traffic and access [6.7.1 – 6.7.15]

- 11.2.27 I consider that the route for the initial turbine construction traffic via Berriew along the B4390 to New Mills is quite acceptable. It is generally 5m wide and adequate for most HGVs. The abnormal loads would travel under controlled conditions and diagrams have been provided to show that they should be able to manoeuvre through Berriew itself.

The remainder of the route from Llanwyddelan Bridge through Adfa is also of reasonable width. The junction of that road with the lane down to the site and the lane itself would benefit from the improvements described as all the construction vehicles would use this section.

11.2.28 I would be concerned if some of the improvement and safety works indicated as necessary by the Highway Authority are not required as a direct result of the proposed development traffic, but mainly sought to deal with deficiencies in the existing road system which would not be made worse by the wind farm traffic. As the abnormal loads would travel under escort so normal traffic would be aware of it, then other than ensuring there are sufficient passing areas to avoid obstruction or prolonged delay, I do not consider lay-bys or widening would be justified purely to cater for those short lived movements. Also, for local car traffic there are other minor roads to the north and south of the section of the route through Adfa which could be used to avoid delay, if necessary.

11.2.29 I appreciate the use of the bridleway to the site entrance could be disruptive for walkers and riders over at least the 6 month period for construction, but the applicant is willing to provide a temporary diversion for construction traffic. During the operation of the wind farm I do not consider the weekly visit of a vehicle would be a problem and the track already caters for farm vehicles. It is my conclusion that there are no cogent objections to the proposal on highway grounds, subject to appropriate conditions.

Archaeology [6.8.1 – 6.8.5]

11.2.30 There are no prehistoric remains recorded within the area of the current wind farm layout and much of the land has been agriculturally improved, so destroying most of any visible evidence of early field systems. The only visible remains are those of medieval and post-medieval farmsteads which are not of scheduling status. These would not be directly disturbed. I accept that there would be some disturbance to the original functional setting of the visible remains, but a watching brief would be maintained by an archaeologist during the construction period and a record made of those features. I consider that this would minimise the impact and there would be no conflict with PSP policy EC16 and MLP policies ENV 19 and 20.

Tourism, recreation and rights of way [6.9.1 – 6.9.17]

11.2.31 I accept that tourism is a significant activity in the locality around MC, where there are several caravan parks and other leisure facilities, and the area is within the range of people touring through Mid-Wales. Even so, there is no evidence to show it experiences substantial pressure as a holiday destination and it is not mentioned in the MLP as a location for the promotion of future leisure and tourism developments, for example like the Hafren Forest or Llyn Clywedog.

11.2.32 The applicant has produced material to suggest that an individual wind farm does not detract from tourism and can actually be a tourist attraction in its own right. A contrary view is expressed by objectors who feel that what they perceive as the industrial character of such schemes is at odds with the main reason why they believe most people choose to visit Montgomeryshire, namely to experience the natural, open landscape. That view is shared by the Machynlleth based Mid Wales Tourism. [MC Doc 31]

- 11.2.33 The Wales Tourist Board oppose wind farms in nationally designated areas, but elsewhere consider each case should be looked at on its merits. The WTB Tourism Strategy 2000 adopts a cautious note on wind farms which suggests that although individual sites may be of modest interest as a 'novelty', the sight of 2 or more during a trip might produce an adverse reaction and affect the real and potential tourism benefits. [MC Doc 42] I agree that this might be the case where there is a proliferation of wind farms in a particular area, but the MC site is some distance from other existing sites and the applicant's evidence of caravan parks in Cornwall suggests that the claims of Messrs Fenton and Oliver about the economic effects and loss of value at their sites must be treated with caution. I conclude that there is no evidence that the MC proposal would harm tourism interests and given that there are already a number of wind farms in Montgomeryshire I believe that such evidence could have been obtained if it existed.
- 11.2.34 In relation to rights of way, the site is only marginally affected by a path crossing the north-west corner and there are no public rights of way running through the turbines themselves. I have already described the effect on views from the paths and although the wind farm would be a new and to some unwelcome feature, I do not consider the effect on the use of the main recreational route along bridleway 26 would be unacceptable due to the location of the turbines several hundred metres away at a lower level.
- 11.2.35 With regard to horses, I accept that some could be frightened by the presence of a wind farm, especially if they lack training or are of a nervous disposition. However, this would be no different to other encounters which can always arise when on horseback which might be potentially disturbing, especially if unexpected. In this case, it is likely that particular horses such as those used for trekking would frequent the same route and become used to the turbines over time. Also, the turbines would be sited at a distance of nearly 500m from bridleway 26, which is well within both the BHS and Powys CC guidelines. It is my conclusion that the wind farm would not cause demonstrable harm to horse riding interests.

Conditions.

- 11.2.36 At the inquiry broad agreement was reached between the main parties on a list of 21 conditions which could be imposed if permission was given [MC Doc. 67(A)] and I refer to those by number. Condition 1 is the standard time limit commencement condition. Condition 2 follows paragraphs A16, A45 and A58 of TAN8 and allows some flexibility in the siting of the turbines, but also provides a control which is necessary in the interests of visual amenity. It also allows for the re-siting of turbine 7 away from an important habitat. Conditions 3 – 7 are required in the interests of visual amenity and to avoid the possibility of dereliction on the site. They are in accordance with the advice in TAN8, particularly paragraph 6 on decommissioning, and paragraphs A50, A51, A52 and A58 on size, design, colour and blade rotation. It may be felt that condition 7 concerning displays and illumination on the turbines impinges on advertisement control and contradicts the advice in paragraph 21 of WOC 35/95. I consider the condition covers a wider field and is essential as a control in the SLA context.
- 11.2.37 It is also important for the character and appearance of the landscape to ensure that the site is not cluttered with ancillary above ground cables and services, so I regard condition 8 as essential. Condition 9 (a) – (d) and condition 11 cover matters of drainage, land restoration and siting of temporary structures and storage areas. This is necessary on landscape and visual amenity grounds and to ensure that the site hydrology

and habitats are not unbalanced or contaminated by site works. Condition 9(e) relates to safeguarding and recording the archaeological interest of the site. It follows the recommendation of CPAT and the advice in paragraph 81 of WOC 35/95.

- 11.2.38 There was some debate over the question of a condition 9(f) to impose a bird monitoring scheme for the site which could improve knowledge of the effects of turbines on bird life. CCW strongly supported a condition and the applicant proposed a forms of words [MC Doc. 67(B)] to provide for such a scheme. However, I do not regard it as a mitigation measure or directly related to the development itself, and it is difficult to see what means are available to secure compliance with such a condition. Accordingly, although I accept that a monitoring scheme would be desirable, I feel it does not meet the normal tests for imposing a condition. If the National Assembly consider such a condition is necessary then I consider the wording suggested by RES is appropriate.
- 11.2.39 Condition 10 is necessary to avoid undue harm to breeding birds during the nesting season and accords with paragraph 118 of WOC 35/95. Condition 11 dealing with stock proof fencing around the site was suggested partly as a security measure by the nearby Common graziers and partly to prevent over-grazing to the detriment of the ground vegetation. There is already such a fence around the site and I consider its retention is justified to preclude possible ingress by stray animals which could affect the site habitats.
- 11.2.40 Conditions 13 – 21 relate to noise and take account of the advice in paragraphs A10 and A29 – A38 of TAN8. They have been the subject of discussion and agreement with the Powys CC Environmental Health Department. I consider they are necessary and reasonable in the interests of the amenity of residents in the area.
- 11.2.41 On the matter of access and transport to the site, I expressed some reservations about the routing of lorries from Berriew in the absence of a Highways Agreement, also having regard to paragraph 71 of WOC 35/95 and paragraph A57 of TAN. The applicant submitted a statement and draft Agreement explaining the situation, and the Highways Authority confirmed the latest position from their point of view [MC Docs 68A and 68B]. I have already concluded that there are no overriding objections on highway grounds to the means of access to the site. In those circumstances and taking account of the advice in Annex D of TAN18, I consider that negative conditions would be acceptable. Since a scheme has to be agreed under such conditions, there is no reason why this should not take the form of a section 278 Agreement.
- 11.1.42 I also consider it is necessary to include an additional condition that the permission shall only be for 25 years and that the site be restored. The developers accept that a turbine's life is usually no longer than this and they may deteriorate both functionally and visually. A temporary period would not prevent the site being used again and would allow for account to be taken of technological changes in renewable energy projects. It would provide for restoration of the site if the wind farm became obsolete which is important in such an attractive rural setting.

Overall conclusion

- 11.2.43 This proposal is located on the margin of the SLA with only limited effects on its special features described under MLP policy ENV2 and its main aspect would be seen with landscape of a different character. It is my overall conclusion that although the proposal would have some adverse effects on local enjoyment of the landscape and on amenity,

the degree of harm to environmental quality is not unacceptable. I find it would meet the tests set in PSP policy EC20 and MLP policy ENV24 and can be treated as an exception to policy ENV3, insofar as part of the site lies within the SLA. I also acknowledge that the proposal would provide some benefits in respect of energy generation and pollution savings. Accordingly, I shall recommend that the application be given permission, subject to conditions.

11.3. PROPOSED CWM LLWYD WIND FARM

Energy supply and local effects [7.3.1 – 7.3.28]

- 11.3.1 The 42 660-750KW turbines proposed would add about 30MW of rated capacity of electricity yielding about 80 GWh per year for supply into the grid. This is sufficient in an average year to provide for the needs of 19,000 homes or about 12% of the total electricity demand in Powys. Although the output from wind farms is intermittent and variable, since it depends on wind conditions at the site, this would nonetheless be a significant contribution to overall energy needs. It would increase the amount of wind energy production in Powys to the equivalent of 48% of the county's electricity needs. The scheme would clearly make a proportionally much smaller contribution to Wales (0.5% of total electricity demand) or UK energy requirements, but this is not a reason to suggest it is not worthwhile.
- 11.3.2 The scheme would provide significant savings of atmospheric pollutant emissions, compared to more conventional power station sources [CE Doc.5 (1)]. Notwithstanding that there are life-cycle emissions of SO₂, associated with the construction of turbines, and that advances in power station technologies are resulting in reduced greenhouse gas emissions, wind power is nonetheless a relatively clean and sustainable means of energy production. Government and National Assembly policies and statements clearly establish that onshore wind power has a significant role to play in energy production from renewable sources. The proposed development would contribute to the attainment of Government targets concerning greenhouse gas emissions during its lifetime of around 25 years. This is a significant consideration in view of the relatively slow progress to date in progressing renewable energy schemes to implementation. Although other renewable energy technologies and energy conservation measures may have the potential to make a bigger contribution to combating global warming, this does not negate the benefits that would accrue from the scheme.
- 11.3.3 The proposal would have associated benefits for the local economy. Whilst the precise extent to which the proposal would involve local contracts for aspects of the construction works is uncertain, the scheme would be likely to result in a substantial local economic benefit for the duration of the construction phase. Contracts to companies within the region could total around £6.25m. There would be an element of local employment generated associated with the supervision and maintenance of the wind farm, although the number of jobs created would be small. Other local economic benefits would include rental income to landowners and business rates. The annual value to the area is estimated at £396,000.
- 11.3.4 Opponents of the scheme point to potential negative effects on the local economy, by reducing the value of adjacent farms and nearby properties and reducing the attractiveness of the area to people who might otherwise rehabilitate dilapidated dwellings and develop cottage industries, thus injecting capital into the local economy.

There is a possibility of some localised negative effect of this nature, but there is no evidence as to the likelihood of such effects or their possible extent in the case of the Cwm Llwyd proposal. Social benefits to the area would result from NWP's policy of supporting local community schemes, encouraging access and education in conjunction with its wind farm sites, and the contribution towards funding a renewable energy visitor facility on the A470(T) at Carno.

Landscape and visual amenity. [7.4.1 – 7.4.80]

- 11.3.5 The main views of the site between 10 - 20km away would be towards the Dyfnant Forest to the north and to the north-east beyond Llanfair Caereinion. Although they are mainly new areas where other existing wind farms are not seen, I consider the impact would be mitigated by distance and the extent of the varying landscape mosaic in which they would be seen. Within the same radius CL would also be seen with other existing wind farms from a few high areas to the north and other high ground scattered to the south beyond Clywedog, Llanidloes and Newtown. These are mainly distant, fragmented areas.
- 11.3.6 The main areas where CL alone would be visible within 10km or so of the site are the surrounding plateau and the landscape just to the north-east and stretching east and south-east through Adfa. It might also be seen from high ground west of Carno and Talerddig, and to the north-west of the site over the Rhyd towards the new route of Glyndwr's Way near Graig Llwyd. There can be little doubt that the immediate plateau landscape area containing the site of 42 turbines would be substantially changed in character and appearance, and the new areas of visual influence created to the north and north-east of the site would include the attractive rolling landscape and footpath extending over Waun Fawr. The CL turbines would also be seen with several other existing wind farms on high ground around Carno and above the Cwm-nant-yr-Eira road just north of Talerddig. This would include a stretch of the new Glyndwr's Way route.
- 11.3.7 I do not find that the effects on visual amenity travelling along Class A and B roads in the area would be significant, the nearest glimpse being of blade tips near Carno. The site would be seen from the minor road network in the area, particularly around Cefn Coch and towards Tregynon, but views would often be curtailed or screened by local topography and vegetation. My main concern is the stretch of the Class C (Cefn Coch – Carno) road which passes through the middle of the wind farm site. I regard this as a 'special feature' which should be safeguarded in terms of MLP policy ENV2. The MLA notes that few roads cross the plateaux and that they are significant tourist routes which afford splendid views. It goes on to say that the settings of such scenic routes should be conserved.
- 11.3.8 The CL site is bisected by some 1.6km of that road and part of the northern half of the site extends adjacent to a further 1.4km. The road provides a variety of fine views towards the plateaux and mountain peaks to the north, the valley slopes and plateau to the west and the hills and valleys extending to the east. Although not heavily trafficked normally, the use of the road in summer by tourists is unknown and it has no doubt been affected by the impact of Foot and Mouth restrictions during 2001. The road between the outskirts of Cefn Coch and Rhyd has a prevailing character of openness, lack of confinement and intermittent, exceptional views to distant peaks to the north and west.
- 11.3.9 In addition, the plateau landscape on either side of the road with its tracts of bog and mire provides the tourist with an initial experience of the wilder landscape extending to

the north-west and west. I consider that the experience of this setting and the vistas which emerge to the east and west would be seriously marred by having to travel through the wind farm which would be distracting, dominant and intrusive, with the nearest turbines only about 100m off the road. The fine distant views of mountain peaks obtained to the north along the central section of the road would be directly affected by the strings of turbines 22 – 36 in the immediate foreground. I conclude that the foregoing represent a substantial objection to the proposal.

- 3.11.10 Within the site itself, on the north side of the Class C road there are some excellent vistas to the north, west and east from the RUPP trackway to Bryngwyn and the bridleway and footpath near the north-west corner of the site, but these would only be affected by the presence of turbines when looking to the east. Persons using the bridleway in that part of the site to the south of the Class C road would find the fine vista to the east over the hills and valleys disrupted by turbines. I consider the proximity of the turbines would also adversely affect the open character and use of the common land to the east of the site, contrary to PSP policy EC3. Further afield, the wind farm would be seen from parts of Glyndwr's Way some 7km away on the hill slopes above the Cwm Nant yr Eira road north-east of Talerddig.
- 11.3.11 Of the viewpoints used in the landscape and amenity assessment by the parties, I consider there would be significant adverse effects arising in 2 important instances. First, Garreg-hir is featured in the MLP and recognised as one of the best viewpoints in the area, with a public right of way virtually to the summit and providing panoramic vistas to other uplands, hills and mountains. I agree with a point made in the officer's report on the former Mynydd-yr-hendre application, that while views from it in all directions are impressive it is perhaps those of the North Wales mountains which are most spectacular [CL Doc. 2,CD3, para. 5.25]. The viewpoint is about 2.6km south of the nearest turbines at CL and although I do not regard them as falling within the immediate area of Garreg-hir as some objectors have asserted, their impact would intrude substantially into that vista. In that vista towards the peaks of Aran Fawddwy and the Berwyns the array of all 42 wind turbines would be prominent in the foreground. Second, although Llyn Hir is over 4km away from the site, I do believe that the appearance of the CL turbines on the skyline would significantly detract from the remote landscape experience enjoyed there. Walkers use the area around Llyn Hir and there are other recreational users in the locality including anglers at Llyn Hir and Llyn Grinwydden.
- 11.3.12 There are some 15 residential properties within 2km of the site which would experience a significant effect on their outlook, but I consider that the mitigation of distance and topographical limitations on views would mean that they would not suffer any substantial loss of residential amenity. A number of them also already have views of an existing wind farm. There are a few exceptions to my general conclusion. Bryngwyn would be substantially affected as it is only about 300m from the nearest turbine, but as it is linked to the proposal I do not consider I should attach significant weight to the impact on it. The Gwaenydd curtilage, Gwaun-y-maglau and Rhyd-y-biswal are between 600 – 800m from the nearest turbines and would find them to be a prominent feature in their views.
- 11.3.13 Other properties further away such as Carreg-y-big and Dolyfardyn would have substantial skyline views of the site. I believe that all these properties would suffer some loss of visual amenity, but that they are sufficiently distant from the turbines for this not to be unacceptable. However, the Carreg-y-big occupiers have to travel through

the site itself to reach their farm, passing very close to the dominance and noise of several towers. I can understand the anxiety and concern this may cause them, especially if making the journey during hours of darkness. This must be added to the visual harm they would suffer, so I consider that their overall loss of amenity would be substantial.

- 11.3.14 It is my conclusion on landscape and amenity considerations that the proposal would have significant adverse effects on the character and appearance of its immediate surroundings, seriously harm the recreational experience provided by rights of way within and adjacent to the site and the scenic route through the site, and disrupt the visual enjoyment of important viewpoints.

Ecology and ornithology [7.51 – 7.5.28]

- 11.3.15 The site is of considerable ecological value, with a wide variety of habitat communities often associated with bogs and mires which should be safeguarded. The applicant has acknowledged that there are certain constraint areas within the site and the layout has been amended to avoid such areas as far as possible. The mitigation would be overseen by an ecologist during construction of the wind farm. A Land Management Agreement has also been proposed which should mitigate the effects on sensitive areas. [CL Doc 57(1)] This would control sheep grazing, feeding locations, cultivation and drainage. I agree with CCW that important habitats could be at risk from sheep grazing, particularly in winter when the track network for the turbines would make parts of those areas more accessible. They accept that the proposed Agreement would address the habitat issue to a sufficient extent that it was no longer a basis to refuse permission for the wind farm. Accordingly, I consider the Agreement is necessary to overcome a significant objection to the proposal. It accords with the advice in WOC13/97, especially paragraph B11, and the relevant nature conservation policies of the PSP and MLP.
- 11.3.16 Concern has been expressed about the potential impact of the wind farm on birds and CCW suggest that insufficient research and monitoring on this matter has been undertaken. Although some of the studies have shortcomings in their basic methodology, a considerable number have been carried out over the last decade and I must rely on the information which is available. Skylark and meadow pipit are abundant upland species and I can find no evidence to show their populations would suffer long-term harm from the wind farm. The known studies on golden plovers suggest they are generally tolerant of wind farms. In the case of the barn owl, given its low level flight and the fact one has been seen hunting at another wind farm, I consider it is probable it will also not be significantly affected.
- 11.3.17 The ES itself points to some possible effects on snipe and curlew which breed on the site. Snipe may be susceptible to collision and displacement and curlews would be displaced according to CCW and CUM. The Trannon Moor studies between 1995 and 1999 acknowledge the difficulties in counting snipe, although the survey suggested a small decline in breeding there. [CL Doc 33/4-7] The same survey suggests there has been displacement of curlew and a decline from 13 to 9 pairs in the survey area as a whole. I accept that the curlew population at CL is locally significant and it is a declining species in Europe. With such a small number of birds recorded at the site and the possibility of other factors causing population fluctuations, it is difficult to say with certainty that the wind farm would cause long-term adverse effects. However, I believe there would be some loss of breeding and feeding territories through displacement during the construction phase and since the ES states that the availability of alternative habitat in

the area for such birds is limited, I believe some population loss would ensue. This is not an overriding objection to the proposal, in itself, and it may be that the population would stabilise and recover over time especially if the main wetland habitats within the site are safeguarded as envisaged by the applicant.

Noise [7.6.1 – 7.6.28]

- 11.3.18 As I have indicated in the section on common issues, I have had regard to the advice on noise in PPW, TAN8 and TAN11. I have accepted that the DTI NWG criteria is appropriate for use as the standard by which the acceptability of turbine generated noise on sensitive properties is assessed. [CL Doc 25] The methodology developed for the guidelines reflects detailed research into the various aspects of wind turbine noise propagation. It takes into account the various factors affecting the extent to which turbine noise might be heard at a given location, including distance, wind speed and direction relative to the direction of the turbines, the nature of intervening topography and background noise characteristics at the location.
- 11.3.19 Criticisms have been made by CUM and others of the data used to calculate prevailing background noise levels, and the accuracy of the noise impact predictions have been questioned. NWP's noise consultant has responded in detail to these matters and carried out fresh predictions taking account of the points raised. Whilst a comprehensive acoustic assessment might be costly, there is no data that demonstrates significant error in the measurements and predictions undertaken. Moreover, the prediction calculations assume a worst-case scenario, for conditions where propagation of noise towards the receptor property would be at its greatest. In the light of these factors, I consider that the noise impact predictions produced form a sufficient basis on which to consider the acceptability of the proposal in these terms.
- 11.3.20 Background noise measurements for a range of conditions were obtained from 8 properties and used as the basis for assessing turbine noise impact at a total of 27 dwellings around the site. This includes all dwellings within 2km of any proposed turbine position. With the exception of Bryngwyn (about 300m from the nearest turbine position), which is the subject of an agreement between its owners and NWP, the closest dwelling would be about 550m away.
- 11.3.21 The results of the noise assessments indicate that, for most of the 27 dwelling locations assessed, noise from the wind turbines might be just audible outside the dwelling, when the location is downwind of the turbines, for wind speeds between around 5m/s up to about 12 m/s. In the majority of these cases it is predicted that turbine noise levels would be below the calculated lowest prevailing background noise level; however, turbine noise could still be audible under these conditions, because of its different character. Although the assessments indicate that for about 6 properties there would be a more audible level of turbine noise, with the exception of Bryngwyn these levels would be within the lower quiet daytime absolute criteria proposed by the DTI NWG (background level +5dB, subject to an absolute lower level of 35dB where this would be a higher value). So far as likelihood of sleep disturbance is concerned, with the exception of Bryngwyn the internal noise level within any nearby dwelling (assuming a single-glazed, undraught-proofed window open for ventilation) would be below the WHO guideline of internal noise levels not exceeding 35 dB LAeq and, in nearly all cases, less than the additional preferred level of 30 dB LAeq.

- 11.3.22 Although the DTI NWG standard has no formal status in planning policy terms, the Council's Environmental Health Officer, having scrutinised the noise assessment, does not object to the proposal. Whilst the evidence indicates that the turbines would, in certain circumstances, be audible at dwellings near the site, the level of audibility would in most cases be low, and unlikely to be apparent indoors. Notwithstanding criticisms that the DTI NWG threshold for determining acceptable noise levels has been selected by the wind power industry itself and designed to enable wind farm developments to proceed rather than providing an impartial measure of acceptability, the assessment nevertheless provides a reliable picture of the extent to which individual locations are likely to be affected in noise terms. On the basis of all of the evidence I consider that the likely noise impacts identified in respect of neighbouring dwellings (apart from Bryngwyn) would not result in noise levels so high and frequent that significant harm to living conditions would result.
- 11.3.23 I conclude that the noise from the proposed turbines would not be such as to cause unacceptable noise disturbance to occupants of neighbouring dwellings. The conditions proposed would provide an effective safeguard against noise levels exceeding the anticipated levels. Nonetheless, in what is generally a quiet rural environment, apart from the nearby quarrying activities, there is a possibility that turbine noise below the DTI NWG threshold would, because of its different character to other noises in the countryside, be perceived by some as distracting and intrusive. For such people it would be the case that audible noise from the turbines could constitute a negative impact.

Traffic and access [7.7.21 – 7.7.27]

- 11.3.24 Construction of the proposal would involve up to 30 HGV and 40 personnel vehicle 2-way movements daily over an estimated 9 month period. HGVs travelling to and from the site would traverse approximately 5km of C class road from the junction with the A470(T) at Carno. The affected stretch of C Class road is lightly trafficked and does not pass through any towns or villages. HGV movements along it would be significantly reduced by the availability of stone for access track construction and concrete for the turbine bases from Tan-y-Foel Quarry, even though sand and cement is imported to the quarry concrete batching plant. The quarry operator has indicated his ability to supply these materials.
- 11.3.25 The road between Carno and the site presents some difficulties. It is of variable width; there are a number of sections where forward visibility is restricted. However, there is broad agreement between the highway authority and NWP's highway engineering consultants as to the location and nature of highway improvements necessary to provide a satisfactory means of access for construction traffic. These mainly comprise sections of road widening or passing bay provision, improvements to forward visibility and removal of road humps. In addition, there may be a need for culvert reinforcements and improvements to the bridge at Rhyd, to accommodate the size and weight of vehicles requiring access. Although the road between Rhyd bridge and the site involves two steep sections with gradients around 20%, an additional tractor unit would be available to assist heavier loads if needed. Potential hazards arising from use of the Carno rail crossing by abnormally large loads could be avoided by careful attention to operational procedures.
- 11.3.26 I consider that the highway improvements envisaged, coupled with appropriate traffic management measures to minimise disruption to other road users when turbine sections are being transported from the A470(T) to the site, would satisfactorily address issues of

access, highway safety and conflict with other traffic. With due attention to the design details of the highway improvements, there is no reason why these need harm the essentially rural character of the road. The wind farm access points are proposed in locations where there is satisfactory highway visibility. The County Council make no adverse comment on their position or proposed layout. Although of substantial dimensions in order to accommodate the turning sweep of long vehicles, their impact on the character of the minor upland road could be reduced by sensitive design detailing, as put forward at the Inquiry by NWP.

- 11.3.27 In summary, whilst the road between Carno and the site is unsatisfactory in its existing state to accommodate the scale and nature of traffic associated with construction of the windfarm, there is scope for highway improvement measures that would meet the concerns of the highway authority. These measures do not form part of the application proposals; nor does any agreement under Section 278 of the Highways Act 1980 to carry out such works exist at present. However, the highway authority appears satisfied that the necessary improvements can be accommodated on land within the highway boundary; and the Council and NWP consider that the prior agreement of such works and their implementation before the construction phase of development commences can be secured by a planning condition. A similar procedure was used to secure the necessary road improvements associated with the construction of Trannon wind farm.
- 11.3.28 It would have been preferable for an agreed, detailed schedule of highway improvement works and traffic management measures to have been finalised at this stage. However, I am satisfied that there is scope for sufficient highway improvement and traffic management measures, based on the range of matters identified by the highway consultants, to render the proposed development acceptable in traffic and access terms. Subject to the imposition and implementation of conditions in the terms put forward at the inquiry and agreed by the County Council as acceptable, I consider that the proposal would not conflict with policies contained in the development plan pertaining to highway matters, namely Structure Plan Policies EC20, T11 and T12.
- 11.3.29 Although the owner of Llanerch has given notice of her intention to refuse permission to permit works to part of the existing access track to the proposed substation site claimed to be in her ownership [1.6.1], this is a private matter independent of the planning merits of the proposal. Consequently, it is not a material planning consideration. Equally, however, the grant of planning permission for the access track arrangement proposed would not affect the private legal rights of landowners.

Archaeology [7.8.1 – 7.8.13]

- 11.3.30 There was some criticism by CUM of the manner of the archaeological survey work undertaken at the appeal site which concentrated on those areas likely to be affected by turbine positions and tracks. I consider that the survey was undertaken in accordance with normal practice and construction work would be carried out with an archaeologist available to undertake a ‘watching brief’ to safeguard both the identified remains and any others which might be discovered during the works. I am satisfied that there would be no unacceptable direct effects on the archaeology of the site, given the ‘watching brief’ and the fact that the layout allows for preservation in-situ. As such the proposal meets the requirements of PSP policy EC16 and MLP policies ENV19 and 20 in those respects.

- 11.3.31 A particular concern of CUM was that no account seemed to have been taken of the setting of the archaeological sites. They quoted paragraph 10 of WOC 60/96, but the applicant's case was that individual remains and their setting must be considered as a whole and the setting could not be separated from it. Also, only remains within the site could be considered, not close to the boundary. It is clear to me that since a monument and its setting must be considered, then even where the deposit itself is not directly affected, the setting must be included in the assessment. The intrusion of development into the setting of visible remains can seriously impair the understanding of their function, location and context. For example, paragraph 17 of WOC 60/96 refers to a presumption against proposals which would have a significant impact on the setting of visible remains of national importance. However, in general, I do not consider the effects of the turbines on the setting of most of the remains at CL are a significant concern, having regard to their lack of national status and limited degree of prominence above ground.
- 11.3.32 There is an exception to the foregoing conclusion. The ES itself acknowledges there would be a visual impact on the "situation" of the prehistoric monuments to the south of the site, including the scheduled Capel stone circle, and I concur with this. [CL Doc 3, Vol 2, 8.6.1.5] I consider that the various post-medieval remains around Pistyll-du and the cluster of prehistoric remains nearby which extend to include the Cefn Brith barrow do have a relationship with their surroundings. Although I accept that the landscape may have changed over the centuries, it still retains a broadly similar topography and character use to that at the time of the construction of the monuments. The quiet, open countryside would be disturbed by the intrusion of a new large scale element in the visual envelope which has no relationship with the archaeological setting. The turbines would dominate the small heritage features leaving them insignificant and fragmented in the overall scene. In particular, the remoter locality on the south side of Mynydd Rhosfach, where the above remains are located together with the nearby stone circle, forms a C-shaped bowl with Esgair Cwmowen which has a strong 'sense of place'. This would be disrupted by the sight of the turbines stationed over the northern slope rising away from the stone circle.

Tourism, recreation and rights of way. [7.9.1 – 7.9.22]

- 11.3.33 Claims that the proposed development would harm tourism in the area are difficult to prove. No detailed evidence has been provided of the specific nature and scale of the aspects of tourism that might be affected. Equally, however, absence of conclusive evidence that wind farms have a harmful effect on tourism does not demonstrate that harmful effects may not result. I consider that it is self-evident that, in areas where a primary attraction for tourists is enjoyment of unspoilt countryside and wide open spaces, developments which significantly harm that character would reduce the attractiveness of the area to many visitors. Evidence exists of the value of tourism related to recreational walking to the rural economy of mid-Wales [CL Doc. 39], and the current stance of WTB on wind turbine proposals [CL Doc. 35(1)] indicates the tourism industry's growing concern about the potentially damaging effects of further wind farms.
- 11.3.34 I appreciate that renewable energy centres such as CAT and at Delabole in Cornwall attract considerable visitor numbers. However, these clearly offer the tourist much more than a wind farm. Although Trannon wind farm is advertised as a visitor attraction, there are no figures for visits by tourists. Moreover, it does not follow that because a single wind farm in an area is seen as a feature of interest by some, additional wind

- farms will increase an area's attractiveness to visitors. Whilst the development of an interpretative centre at Carno would be likely to be of some interest to visitors, the size and scope of such a centre is unclear at present.
- 11.3.35 With regard to the use of the rights of way within the site by tourists and local people, I accept that there is little evidence that they are greatly used at present. However, this may well change in the future and the development plan policies anticipate this, for example in modified paragraphs 4.99 – 4.100 of the MLP. In terms of general recreational enjoyment of the area, the proposal would substantially alter its sense of openness and solitude which are qualities likely to be highly valued by those who do use the rights of way. A general criticism of the CL scheme is that many of the turbines are quite close to the paths, sometimes less than 100m away. Consequently the use of the paths and views around would be dominated by the overbearing presence and noise of the turbines. This not only affects the area within the site, but has an adverse effect on the value of the paths as part of a wider network. This network includes a link across to Garreg-hir and the lakes to the south, a route to the north over Waun Fawr, and a route past the adjacent common to the east towards Cefn Coch.
- 11.3.36 The amended site layout plan [CL Plan B and CL Doc 29] shows the proposed turbine positions relative to footpaths and bridleways as shown on the definitive map. The County Council's guidelines [CL Doc 31(3)] recommend a separation distance equivalent to at least the turbine tower height in relation to public footpaths. In relation to bridleways and RUPPs it recommends a separation distance of 200m but also, recognising that upland sites in Powys capable of achieving this may be difficult to find, stipulates an absolute minimum distance of 75m or twice the turbine tower height, if greater. These guidelines have no statutory weight, and there is no national planning guidance specifying minimum separation distances. However, the County Council's preferred separation distance of 200m is consistent with that advocated by the British Horse Society. Evidence to the Inquiry regarding the effect of wind turbines on horse behaviour was anecdotal, and indicates that susceptibility to turbine noise or blade movement varies according to the temperament of individual horses.
- 11.3.37 The amended turbine layout details indicate a minimum distance approaching 75m between any turbine base and an adjacent bridleway, with suggested conditions relating to separation distances and micro-siting of turbines to ensure a separation distance of twice the turbine tower height. Notwithstanding that this would meet the absolute minimum in the Council's guidelines, about 12 turbines would be within 100m of a bridleway or RUPP. This is less than half the County Council's preferred separation distance and that advocated by the British Horse Society. At close range the turbines would be dominating features, their presence accentuated by the movement and sound of sweeping blades, particularly in an open, exposed situation with considerable variation in levels. I consider that the scheme as proposed, even allowing for small variations in siting as suggested, would have an adverse effect for riders using the bridleway extending roughly east – west through the southern part of the site from Fuches-goch, the RUPP to Bryngwyn, or the private track to Carreg y Big.

The sub-station application.

- 11.3.38 The sub-station would be sited away from the wind farm adjacent to a public footpath. The ES suggests that this was done because of its visual impact where it was originally envisaged to be sited within the main site. The application has now been amended to an 'outline' proposal, but I consider it is reasonable to assume it would consist of a

compound with transformers and a control building similar to that shown on the now illustrative plans [7.2.8 – 7.2.10]. Such a development would have to involve excavation of the hillside to provide a platform and possibly retaining works also. I appreciate that its siting may be considered preferable to that within the main wind farm area as its visual influence would be confined to a smaller area due to the screening by nearby vegetation and topography. However, users of the adjacent footpath would pass directly by it and it would have some adverse impact on its immediate surroundings which includes the attractive gully just to the south in which the Nant Garth falls towards the Afon Cwm-Llwyd. My conclusion is that the siting of a compound, transformers and building in this isolated location would detract from the character and appearance of the countryside.

Application amendments, Conditions and Agreements.

- 11.3.39 If the wind farm application M97/814 is approved, the decision should note that it has been dealt with in accordance with the amendments set out in paragraph 7.2.5 of this report, particularly the revised layout plan 2B.
- 11.3.40 In respect of conditions which could be imposed if the wind farm is approved, broad agreement was reached between the main parties on a list of 26 conditions [CL Doc. 56] and I refer to those by number. Condition 1 is the standard time limit commencement condition. Condition 2 is for a period proposed by the applicant and to avoid dereliction at the end of the wind farm's useful life. This may be acceptable under paragraph 110 of WOC 35/95. A temporary period would not prevent the site being used again and would allow for account to be taken of technological changes in renewable energy projects. It would provide for restoration of the site if the wind farm became obsolete which is important in such an attractive rural setting.
- 11.3.41 Conditions 3 – 5, 7 and 12 are required in the interests of visual amenity and to avoid the possibility of dereliction on the site. They are in accordance with the advice in TAN8, particularly paragraph 6 on decommissioning, and paragraphs A50, A51, A52 and A58 on size, design, colour and blade rotation. Condition 5 follows paragraphs A16, A45 and A58 of TAN8 and allows some flexibility in the siting of the turbines, but also provides a control which is necessary in the interests of visual amenity. It may be felt that condition 7 impinges on advertisement control and contradicts the advice in paragraph 21 of WOC 35/95, but I consider the condition covers a wider field and is essential as a control in the SLA context.
- 11.3.42 Condition 6 may be justified on a similar basis to that in paragraph A26 of TAN8 to set a minimum safety distance. It is important for the character and appearance of the landscape to ensure that the site is not cluttered with ancillary above ground cables and services, so I regard condition 8 as essential. Condition 9 (b) – (g) cover matters of drainage, access, land restoration and siting of temporary structures and storage areas. This is necessary on landscape and visual amenity grounds and to ensure that the site hydrology and habitats are not unbalanced or contaminated by site works. Condition 9(a) relates to safeguarding and recording the archaeological interest of the site. It follows the recommendation of CPAT and the advice in paragraph 81 of WOC 35/95.
- 11.3.43 Conditions 10 and 11 deal with highway improvements on the county road leading to the site and traffic management. Taking account of the advice in Annex D of TAN18, I consider that a negative condition along the lines proposed for condition 10 is appropriate in the interests of safety and free flow of traffic. Since a scheme has to be

agreed under the condition, there is no reason why this should not take the form of a section 278 Agreement. Condition 11 would enable equipment to be delivered to the site with the minimum of inconvenience to local people and in interests of safety.

- 11.3.44 Condition 13 follows the advice in paragraphs A39 – 41 of TAN8. CCW and the applicant agreed that condition 14 to impose a bird monitoring scheme for the site was desirable as this could improve knowledge of the effects of turbines on bird life. However, I believe this would have been better implemented through a voluntary Agreement as I do not regard it as a mitigation measure or directly related to the development itself, and it is difficult to see what means are available to secure compliance with such a condition. Accordingly, although I accept that a monitoring scheme would be desirable, I feel it does not meet the normal tests for imposing a condition. If the National Assembly consider such a condition is necessary then I consider the wording suggested is appropriate.
- 11.3.45 Objectors suggested a further condition to protect birds during the breeding season was necessary and this would accord with paragraph 118 of WOC 35/95. The applicant did not consider it was necessary. Given the ornithological interest of the site, I disagree and would impose such a condition, but using the amended wording suggested by the applicant set out in item (h) of my Notes appended to CL Doc. 56.
- 11.3.46 Conditions 15 – 26 relate to noise and take account of the advice in paragraphs A10 and A29 – A38 of TAN8. They have been the subject of discussion and agreement with the Powys CC Environmental Health Department. I consider they are necessary and reasonable to safeguard the amenity of residents in the area.
- 11.3.47 There are other matters concerning legal Agreements [CL Doc. 57]. The applicants have executed an Agreement to make a financial contribution to a tourist information facility at Carno. I do not consider this has a direct bearing on the application before me, but I draw it to the attention of the Assembly. The second Agreement is that relating to land management and ecology which was submitted in draft to the inquiry. If that Agreement has now been completed in accordance with the draft then I consider it overcomes the objection raised on grounds of impact on habitats. Otherwise, I believe the objection must stand and would form an additional reason to reject the wind farm proposal.
- 11.3.48 With regard to the conditions for the sub-station application M99/0117, condition 1 is standard and condition 2 is necessary for the same reason as that with the same number for the main wind farm and they both form part of a single comprehensive scheme. I suggest that now the proposal is in outline, conditions 1, 2 and 3 are deleted and replaced by the model outline conditions 2, 4 and 5 in Appendix A of WOC 35/95. Conditions 4, 5 and 6 are necessary in the interests of visual amenity, to conserve the physical integrity and appearance of the hillside where the sub-station and track would be sited. There would also be a need to safeguard the amenity of users of the right of way during the works. Condition 7 is required to prevent excavation works being started on the hillside before it is known if they are necessary, so avoiding any undue visual impact.

Overall conclusion.

- 11.3.49 I acknowledge the energy and pollution benefits of the proposal, together with its contribution to the local economy and supplementing the income of a number of farming families. However, my overall conclusion is that these benefits are outweighed by the

adverse effects in respect of the wind farm's impact on the character and visual enjoyment of the site, its setting and wider countryside. In particular, I find the proposal would have an unacceptable impact on a scenic route, rights of way and viewpoints. As a consequence it would conflict with PSP policy EC20 A and E, and MLP policies ENV2 and ENV24. There are other adverse effects on recreational use of the locality, adjacent common land, views from Glyndwr's Way, residential amenity, birds, and archaeology which are significant, but not unacceptable in themselves. However, they do carry some weight in the balance against the proposal. Accordingly, I shall recommend that the wind farm proposal is refused.

- 11.3.50 In respect of the sub-station, I consider that the need for the proposal as an essential part of the overall wind farm project is sufficient to outweigh its visual harm, but if the wind farm itself is refused then that need disappears and the sub-station should also be refused as an unnecessary, isolated and inappropriate development in the open countryside.

11.4. PROPOSED NANT CARFAN WIND FARM

Energy supply and local effects [8.3.1 – 8.3.30]

- 11.4.1 The scheme's 16 turbines would provide 20.8MW of installed capacity and generate some 60,000MWh per annum, equivalent to the domestic electricity consumption of around 14,500 households. Although CPRW considers this an overestimate of output, it is broadly consistent with the equivalent figures given in respect of the MC and CL proposals. Notwithstanding that the output from wind farms is intermittent and variable, since it depends on wind conditions at the site, this would be a significant contribution to overall energy needs. It would increase the amount of wind energy production in Powys to the equivalent of 48% of the county's electricity needs. The scheme would clearly make a proportionally much smaller contribution to Wales or UK energy requirements, but this is not a reason to claim it is not worthwhile.
- 11.4.2 The scheme would provide significant savings of atmospheric pollutant emissions, compared to more conventional power station sources. Notwithstanding that there are life-cycle emissions of SO₂ associated with the construction of turbines, and that advances in power station technologies are resulting in reduced greenhouse gas emissions, wind power is nonetheless a relatively clean and sustainable means of energy production. Government and National Assembly policies and statements confirm that onshore wind power has a significant role to play in energy production from renewable sources. The proposed development would contribute to the attainment of Government targets concerning greenhouse gas emissions during its lifetime of around 25 years. This is a significant consideration in view of the relatively slow progress to date in progressing renewable energy schemes to implementation.
- 11.4.3 Although some objectors have suggested that other renewable energy technologies and energy conservation measures may have the potential to make a bigger contribution to combating global warming, this does not negate the benefits that would accrue from the scheme. At the same time, the relative scale of benefit in terms of "clean" energy production is clearly relevant when balancing the benefits of the scheme against any harm identified.
- 11.4.4 As regards local socio-economic effects, the scheme would be worth an estimated £3m to the local and regional economies in the form of goods and services during the

construction period. Powergen has a policy of supporting local community schemes and initiatives in localities where it has an operational presence, including donations to sports clubs, schools and children's play areas.

- 11.4.5 Potential negative economic effects are harder to demonstrate or quantify. Objectors at the Inquiry with experience of holiday activity and accommodation provision in the area say that some holidaymakers would not wish to return if the NC scheme went ahead. However, it is not known if such views are so commonly held by visitors that the viability of local holiday cottage and trekking businesses would be threatened. In areas where enjoyment of attractive, unspoilt, countryside is a primary reason why people visit, development which detracts significantly from those qualities may deter them from coming

Landscape and amenity. [8.4.1 – 8.4.93]

- 11.4.6 The area of visual influence of NC would be largely confined to high ground already influenced by existing wind farms, including local areas west and east of the site. In views beyond 7km from the site, the impact of the proposal would often be seen with the nearby Cemmaes wind farm and fragmented by intervening topography and vegetation. Up to 15km away it covers parts of the hill slopes above the Dovey Valley extending towards Cadair Idris to the west; to the north beyond Mallwyd and the A458; and over fragmented areas to the south-west in an arc between the Dovey Valley and the B4518 road south of Llanbrynmair. It might also be seen on the high slopes south of Carno. The main new areas of influence created by the NC scheme alone would include additional areas to the south above the west side of the B4518 road; land north of Cwm Llwyd towards Llanerfyl some 10km away, and to the north-east of Pont Llogel in the region of 20km away. I do not find the proposal would be unduly intrusive in views from the trunk roads, with the most significant view being from a short section of the A470 through Llanbrynmair. On other roads there would also be no significant effects, apart from the B4518 which I refer to below.
- 11.4.7 In considering the effect of NC, I regard it as important to remember 2 basic points. First, that it is located at the far edge of the Western Uplands SLA which is closely related to the remote upland peaks and wild hills of Snowdonia and the Dyfi Forest; the Cambrian Mountains ESA; and Llyn Clywedog and the Hafren Forest. The NC site is 3.5km from the National Park boundary. The scenic beauty and value for open air recreation of these areas is well known. Second, the NC site itself is a distinctive local physical feature. It is made up of a relatively narrow flat topped, moorland area with steep margins on the end of a promontory of large upland plateau. It is prominent in certain views and the turbines would be very high, being some 76m to blade tip and would often be seen silhouetted against the sky.
- 11.4.8 The applicant has argued that the presence of the nearby Cemmaes wind farm is beneficial as it has already established a character sub-type of 'upland plateau with wind farm', so the proposal would not be a new element in the landscape but merely reinforce an existing situation. I do not accept that assertion. Cemmaes is extensive in scale, being strung out along a plateau in a linear pattern, whereas NC would be in the form of a loose cluster and of greater height, with the turbines some 2.5km apart across a valley which severs the 2 plateau ridges. Although the 2 wind farms would be seen together in some views they would not be perceived as a single visually determinate overall form which might be the case with an extension to a site, but as a segregated, uneven and disruptive feature in the landscape.

- 11.4.9 Some parts of the Pandy hamlet, which was at the heart of the Council's objections and lies between Cemmaes and the NC site, would have views of both sets of turbines at NC and Cemmaes to the east and west. However, I consider the evidence shows that it is unlikely that many dwellings would see much of the NC turbines. From the north along the Pandy road the few properties under the plateau on the east side of the road would not be affected until the vicinity of the The Old Post Office and Pandy Cottage when 1 or 2 blades might come into view. On the opposite side of that road properties such as Dol-fawr would see upper parts of a few turbines increasing to around 8 blade tips further down the road at Bryn-aire-uchaf. At the far end of the side road to Clegyrnant those properties closest to the base of the plateau such as Hendre fach or Blaen-y-cwm would see nothing or a blade tip. Further east, Clegyrnant would have a view of several tips and blades, whereas Rhyd-y-meirch would view only a few tips. Taking account of the general lack of full views of the turbines and their remoteness in terms of distance and elevation from local dwellings, I do not find that the degree of adverse impact on the visual amenity of local residents would be unacceptable.
- 11.4.10 There is no public access to the site itself or to the common to the north, although I believe there would be some adverse effect on the open nature of that adjacent common, contrary to PSP policy EC3. Despite its current inaccessibility to the public, I consider it is reasonable to note that the turbines and access ways would detract from the character and wild atmosphere of the site itself which has special SLA features. These include attractive moorland vegetation, the Nant Carfan, the rock outcrops and incised gorge of Craig Fawr, and the tumbling Nant-rhyd-y-car at the periphery of the site. Much of the plateau has already been adversely affected by forestry and the appeal site and the adjacent common form an important remnant of the SLA character deemed important in the MLP.
- 11.4.11 My main concerns, however, centre on the proposal's visual impact on 3 areas – the National Park, the local rights of way and Glyndwr's Way, and the linear area stretching from the confluence of narrow valleys at Llanbrynmair south to Clywedog. In respect of Snowdonia National Park and the objections raised by the National Park Authority, great weight must be attached to its protection because of its national status and I believe that this should include consideration of the effects on the enjoyment of its special qualities arising from nearby development outside the park. The possible need to consider such development is recognised in paragraph A49 of TAN8 and paragraph 21 of WOC 13/99. It follows that the views of wind farms out from the Park should be taken into account as they could impact on the enjoyment of walking over the high peaks and hills where the vistas to be obtained greatly enhance the experience.
- 11.4.12 In such views, especially those from the more distant peaks such as Aran Fawddwy and Cadair Idris, I accept that the wide panorama obtained would not be overwhelmed by the presence of NC and existing wind farms. However, as unnatural features they would detract to some extent from the generally wild, open and natural landscape vista which is expected by the viewer. From closer viewpoints such as Foel Dinas west of Dinas Mawddwy at about 8km or Foel Dugoed at 4.5km, where the turbines would be on the skyline, the impact would be greater, as NC would become more dominant in the view although these viewpoints do not appear to be on public rights of way. It is my conclusion that there would be some significant adverse effects on the enjoyment of the National Park. In other views I believe the impact of the wind farm would be substantial in terms of dominance to 5km away and still considerable at greater distances where NC might be seen with both the Cemmaes and Carno wind farms. When seen with turbines

of different wind farms on the skyline in distant views, the horizontal emphasis of the landscape and the beauty of its horizons would be marred.

- 11.4.13 Turning to the effect on rights of way, the high points on Glyndwr's Way to the south-west of NC are only just over 2km away. All the NC turbines would be seen atop the ridge from the national trail and the footpaths above Pentre-celyn. To the south-east on Cerrig y Tan some 2.6km away, there is a fine view from the national trail to the west and north-west over the plateaux at NC and Cemmaes, with the high peaks of Snowdonia in the distance. Although Cemmaes wind farm can also be seen, as I have already indicated, the turbines of both sites would not appear as an entity but as a confused array of different heights and distance. There are further distant views to the east and south-east which include other wind farms. From the footpath at Nant-hir about 1km away from the nearest turbine on the north-west corner of the site varying amounts of blade tips would be seen marching along parts of the ridge. Parts of turbines would also be seen from the footpath near Clegyrnant a similar distance to the east of the site. I consider that the turbines would dominate the aforementioned views and the proposal would have a substantial adverse impact on the appreciation of the landscape and visual amenity in these elevated locations around the Pandy locality. I find the effect on Glyndwr's Way is particularly regrettable, given its national status and I comment further on this below.
- 11.4.14 The effect on Glyndwr's Way also features in consideration of the area from Llanbrynmair to Clywedog. From the B4518 south of Llanbrynmair there are some views of NC from within the village itself and part of the Cemmaes wind farm is visible at about 3km. The NC turbines would be seen behind and below the plateau edge. The distance from Llanbrynmair to Staylittle along the B4518 is about 12km and NC appears in the middle of views at various points as far as Llan (3km) and Bontdolgadfan, and again in the Pennant area (6km), framed by the V – shape of the valley sides.
- 11.4.15 Turning west onto the Dylife mountain road the NC turbines would be seen from the superb designated viewpoint at Dylife Gorge (and Ffrwd Fawr) which is a special feature in the landscape, some 13km from the site; and from some of the high ground around Llyn Clywedog which is also a special feature of the narrow valleys character area. It would also be seen in the vast panorama from the Wynford Vaughan Thomas Memorial further to the west where I was able to see the Cemmaes turbines moving in conditions of good visibility during one of my site visits. Although these views are distant and extensive, they are of outstanding quality and easily accessed by the public, so I consider that there would be an adverse effect of some significance where the NC proposal in combination with Cemmaes would form an intrusive feature.
- 11.4.16 Overall, I find that the combined effects of the NC proposal on open plateau character, the narrow Twymyn valley and plateau margins, scenic routes and viewpoints of the area amount to a major objection to the proposal, bearing in mind that these are defining features of the Western Uplands SLA . Taking account of the extensive overlap with the visual influence of the Cemmaes wind farm, I consider the proposal would conflict with MLP policy ENV25.

Ecology and ornithology [8.5.1 – 8.5.14]

- 11.4.17 Although there would be some minor loss of habitat, the applicant proposes to offset this and positively enhance the ecological value of the site by means of a Land Management Scheme. This would reduce stocking levels and remove winter grazing, restore and

expand bog areas, conserve heather moorland and protect the area close to a black grouse territory. The layout also allows for a buffer zone around a peregrine nesting site. There could be some initial displacement of other bird populations during construction, but I accept that the overall improvement in habitat value proposed would provide long term feeding and nesting benefits for birds. CCW and the RSPB withdrew their objections as a result of the agreed management scheme and Powys CC are a party to the resultant legal Agreement. I conclude that the wind farm proposal would cause no harm to ecological and ornithological interests.

Noise [8.6.1 – 8.6.56]

- 11.4.18 I appreciate that Government guidance does not state that the DTI NWG criteria should be adopted as the standard by which the acceptability of turbine generated noise is judged. However, TAN 8 refers to it as a source of detailed information on wind turbine noise. The methodology developed by the DTI NWG to assess the potential noise impact of wind farm proposals reflects detailed research into the various aspects of wind turbine noise propagation. As I have previously indicated, I regard the guidance as an appropriate tool to assess noise at sensitive properties.
- 11.4.19 Although the reliability of prevailing background noise measurements at the sample properties near NC and the accuracy of the noise impact predictions have been questioned, Powergen's noise consultant has responded in detail to these matters and carried out fresh predictions taking account of the points raised. No empirical data has been produced by the main objectors that demonstrates significant error in the measurements and predictions undertaken. Moreover, the prediction calculations provide a worst-case scenario, assuming wind conditions where propagation of noise towards the receptor property would be at its greatest and incorporating allowances for error where uncertainty exists.
- 11.4.20 I consider this approach is consistent with the advice in TAN 8 that, where there is concern about whether BS4142 is appropriate as a means of determining potential or actual perceived noise nuisance, the combined effect of the wind turbines should be determined by reference to the particular character and sensitivity of the area. I find that the properties selected for background measurement purposes and the range of dwellings for which noise predictions have been undertaken provide a satisfactory basis for assessing the extent to which properties in the vicinity of the site would be affected by noise. In the light of these factors, I consider that the noise impact predictions produced form a reliable basis on which to consider the acceptability of the proposal in these terms.
- 11.4.21 The nearest property to any of the proposed turbines would be Nant Carfan farmhouse, at a distance of about 500m. However, this property is owned by one of the parties to the proposal. The next closest is Blaen-y-cwm at about 800m. There a further 15 or so properties at distances up to 2km, and about 10 more at between 2 – 3km. Noise from the wind turbines would probably be audible to varying degrees at about 15 different dwellings in certain wind conditions. In some cases the level of audibility and frequency of occurrence would be very small; in others the effects experienced would be greater. However, with the exception of Nant Carfan farmhouse, the maximum levels of noise likely to be experienced would be within the DTI NWG's adopted criterion of acceptability for quiet daytime periods (within 5dB(A) above prevailing background noise level when predicted noise level would exceed 35 dB LA90). The predictions for

internal noise levels when windows are open for ventilation indicate that sleep disturbance is unlikely to occur at any neighbouring dwelling.

- 11.4.22 The Council's Environmental Health Officer, having scrutinised the noise assessment, does not object to the proposal. On the basis of all of the evidence I consider that the likely noise impacts identified in respect of neighbouring dwellings would not be such as to result in noise levels so high and frequent that persistent disturbance would result. For this reason I consider that noise impact is not an overriding objection in this case.
- 11.4.23 However, I also consider that in very quiet rural environments there is a possibility that audible turbine noise within the DTI NWG threshold, whilst not of a level that would be regarded as harmful to living conditions or a nuisance, would because of its unusual character different to other noises in the countryside be perceived by some as irritating and intrusive. The occupants of about 15 dwellings would be likely to be able to hear the turbines, to a varying extent under certain conditions. For these occupants I consider that noise from the turbines, because of its foreign character in a quiet rural environment, would constitute an adverse impact.
- 11.4.24 Objectors cite noise from the Cemmaes A turbines in connection with their concern that the NC scheme will have an unacceptable noise impact. However, the noise characteristics of the Cemmaes A turbines, which are a much earlier design with 2 blades and a teeter hub mechanism, are very different, particularly as regards tonal noise. The level and type of noise output from Cemmaes A is thus not a reliable indicator of noise output from the proposed turbines. The conditions proposed in relation to the NC scheme have been agreed by the Council as providing adequate protection from noise nuisance. They would provide a maximum permitted noise level at each of the locations assessed, and include a procedure for addressing any tonal noise that might arise. Expressing the maximum permitted level in terms of an absolute level at each site would eliminate the potential for higher cumulative noise levels arising from the combined operation of the NC and Mynydd y Cemmaes turbines.
- 11.4.25 As regards noise impact on recreational users of rights of way, the noise assessment included a location on the nearest right of way to the proposed turbines. At this point, about 1km from the site, predicted noise levels, whilst audible, would be significantly below the annoyance threshold adopted by the DTI NWG. In my opinion the issue of turbine noise for users of rights of way in the area would, because of the distance of footpaths and bridleways from the turbines, be secondary to the issue of visual impact. Although implementation of the CROW Act may bring about public rights of access to the site of the turbines and adjacent land in the future, there is no public access at present. I therefore conclude that the proposal would have only a minor adverse effect in noise terms for recreational users in the locality.

Traffic and access [8.7.1 – 8.7.9]

- 11.4.26 Significant vehicular movements to and from the site would be confined to a 10 month construction period. Access to the site would be directly from the A458(T) by means of improved forestry roads; and no use of minor roads by construction traffic would be necessary. Heavy goods traffic during the construction period would be kept to a modest level by obtaining hardcore for access road and site track construction from necessary access upgrading works or borrow pits. A detailed survey and assessment of the proposed route has confirmed the feasibility of this approach.

- 11.4.27 The proposed access junction with the A458(T) [NC Plan G] would permit access by large vehicles from either direction. The Highways Agency considers the proposed access onto the trunk road acceptable [NC Doc. 22]. The proposed access location onto the A458(T) is at a point affording satisfactory visibility and where there are no significant hazards or complicating factors for drivers. The County Council, having included the highway implications of the scheme in its consideration of the proposal and being aware of the Highways Agency's view as the relevant statutory authority, did not consider it necessary to submit evidence on this matter. One local person has stated that the trunk road in this area is unsuitable for intensive use by heavy vehicles and refers to the occurrence of fatal accidents. However, this view is not supported by details of such accidents or evidence that traffic movements arising from the proposal would aggravate any known risk.
- 11.4.28 The scale and short duration of significant traffic movements, the proposed access arrangement with the A458(T) and the absence of use of highways other than principal roads to gain access to the site lead me to the view that there are no sustainable objections in highway terms. As such, the proposal would comply with prevailing policies relating to the traffic and access implications of development. I conclude that the proposal would be acceptable in this respect.

Archaeology [8.8.1 – 8.8.10]

- 11.4.29 The construction activities for the wind farm could affect 4 sites of interest, namely a hut settlement considered to be worthy of scheduling, a field system of regional importance, and some clearance cairns and a peat drying platform of local interest. Only the field system would be directly affected by works and I am satisfied that the proposal to mark and fence off the other remains, together with the maintenance of a 'watching brief' over the site as a whole by an archaeologist, would provide sufficient safeguard.
- 11.4.30 The field system would be affected by a link road and possibly other roads and turbine 4. It is proposed to excavate and record the part which might be destroyed. I consider this is in accord with the requirements of PSP policy EC16 and MLP policy ENV19, but the loss of part of the field system and the encroachment of access tracks does form a negative effect of the wind farm proposal. I also note that no archaeological assessment has been done for the access route to the site, but I do not consider this is appropriate for the sections of forestry track which already exist. In respect of new sections to extend the track into the wind farm site, I consider that as this has been treated as part of the overall site it can be covered by an appropriate condition requiring a 'watching brief'.
- 11.4.31 With regard to the objection by CUM on the issue of the setting of the remains, they are not generally enclosed by the turbines but set towards the periphery of the site. Their overall setting and the quiet 'sense of place' which it currently provides will undoubtedly be affected by the visual dominance and noise of the large-scale turbines, but the existing function and broad character of their immediate surroundings will remain. This is particularly so with the main cluster of remains north of Craig Fawr which will not be directly disrupted by tracks or other works. It is also the case that the extent of visible remains above ground is limited and generally inconspicuous, also bearing in mind there is currently no right of public access to the land. It is my conclusion that although there is an adverse effect on the setting of the visible remains, it does not constitute a substantial objection to this particular wind farm scheme.

Tourism, recreation and rights of way [8.9.1 – 8.9.25]

- 11.4.32 It was not disputed at the inquiry that the opportunity to enjoy unspoilt, peaceful countryside is one of the primary attractions of the area for visitors and for many residents. The evidence of local people with experience of holiday businesses indicates that this is true for those actively seeking to enjoy countryside activities such as walking and horse riding/trekking and for those staying in holiday accommodation in the area. I consider that it is likely to be true also for those visitors who experience the area primarily by car and from roadside locations.
- 11.4.33 There are no public footpaths or bridleways crossing or adjacent to the site of the proposed turbines. Although it is possible that public rights of access may be established in the future as a result of the CROW Act, this is not certain at present. In any event it is questionable whether this location, which is not easily accessible from adjacent uplands or from the valley floor, would attract significant public use. The same applies to the likelihood of future public use of the common land to the north of the site.
- 11.4.34 However, there are a number of footpaths and bridleways that traverse or climb the hillsides and ridges to the east, west and south of the site. As already described above, from these elevated locations there are views of highly attractive countryside, in which the NC site would be a prominent feature, seen across the intervening valley. I consider that the siting of the proposed turbines on the prominent hilltop would significantly adversely affect the use and enjoyment of these bridleways and footpaths, and I do not accept the contention of the applicant that wind farms do not detract from the recreational experience.
- 11.4.35 Of particular significance in this regard is the effect on the route of Glyndwr's Way. Two sections of the route, as revised in conjunction with its upgrading to National Trail status, would be affected, as the trail climbs to higher ground either side of Llanbrynmair. From these sections there would be substantial views of the turbines on the hilltop just across the valley. At various elevated points on its route through Montgomeryshire there are inevitably views of wind farms and if it is accepted that a primary purpose of the trail is to enjoy natural unspoilt beauty then it must be adversely affected by the regular presence of these man-made vertical features. I realise that when seen at a considerable distance in extensive vistas it can be argued that their impact is tolerable, but when the trail also passes close to wind farms at several important locations I consider the combined effect is extremely harmful. This already occurs near Llandinam wind farm before descending down towards Llanidloes; in the beautiful area around Clywedog and Staylitttle which is one of the main tourist areas and where the influence of the Carno and Llandinam wind farms are already felt; and when the route reaches Cemmaes and Llanbrynmair. In some of the western and southern parts of the route between 2 – 4 wind farms can be seen and the influence of 1 or 2 sites continues in the area towards Llanbrynmair.
- 11.4.36 To add the NC scheme within a few kilometres of the National Trail would be a substantial adverse effect and subvert the objective of MLP policy LD16. The presence of the wind farm in such a context would detract significantly from the original aim of the route to reflect the "*grandest, wildest and most beautiful landscapes the nation had to offer*" [8.9.16], and would run counter to the development of the route as an important strand in Powys' tourism strategy.

- 11.4.37 I have already described the visual impact of the wind farm on the B4518 scenic route between Llanbrynmair and Staylitttle and the tourist area around Clywedog. The adverse impact could have implications for tourism in that area. Also, the minor road north from Llanbrynmair through Pandy is a scenic route linking the A470(T) and A458(T), used by recreational motorists. Although the steep bulk of Mynydd Rhiw-Saeson would limit views of the turbines from the south along this route, some of them would appear in view on top of the ridge above the road at a number of points along the valley, as would turbines on Cemmaes.
- 11.4.38 From the foregoing I conclude that the proposed development would have an adverse impact on the particular tourist and recreational experience enjoyed in the area. I consider users of the area, whether resident in the locality or tourists, would find the presence of the proposed turbines in views significantly damaging to their enjoyment of the scenic qualities of the area. In my opinion the proposal would result in substantial harm to an important recreational and tourism resource.

Application amendments, Conditions and Agreement.

- 11.4.39 If the appeal is allowed and application M00/0220 is approved, the decision should note the minor amendments set out in paragraph 8.2.5 of this report, including the revised layout plan.
- 11.4.40 In respect of conditions, broad agreement was reached between the main parties on a list of 28 conditions for the wind farm [NC Dec. 55] and I refer to those by number. Condition 1 is the standard time limit commencement condition. Condition 2 is for a period proposed by the applicant and to avoid dereliction at the end of the wind farm's useful life. This may be acceptable under paragraph 110 of WOC 35/95. A temporary period would not prevent the site being used again and would allow for account to be taken of technological changes in renewable energy projects. It would provide for restoration of the site in the interests of visual amenity if the wind farm became obsolete.
- 11.4.41 Conditions 3 – 6, 8 and 17 are required in the interests of visual amenity and to avoid the possibility of dereliction on the site. They are in accordance with the advice in TAN8, particularly paragraph 6 on decommissioning, and paragraphs A50, A51, A52 and A58 on size, design, colour and blade rotation. Condition 17 follows paragraphs A16, A45 and A58 of TAN8 and allows some flexibility in the siting of the turbines, but also provides a control which is necessary in the interests of visual amenity. It may be felt that condition 6 impinges on advertisement control and contradicts the advice in paragraph 21 of WOC 35/95, but I consider the condition covers a wider field and is essential as a control in the SLA context.
- 11.4.42 It is important for the character and appearance of the landscape to ensure that the site is not cluttered with ancillary above ground cables and services, so I regard condition 7 as essential. Condition 9 – 12 and 15 cover matters of drainage, access, land restoration and siting of temporary structures and storage areas. This is necessary on landscape and visual amenity grounds and to ensure that the site hydrology and habitats are not unbalanced or contaminated by site works. Condition 12 is also necessary due to the ecological and ornithological sensitivity of the site. Conditions 13 and 14 relate to safeguarding and recording the archaeological interest of the site. It follows the recommendations of CPAT and the advice in paragraph 81 of WOC 35/95.

- 11.4.43 Condition 16 deals with safeguarding the display period for black grouse and would also protect the early nesting period for other species. Condition 18 is necessary to ensure the main access is constructed in a safe and proper manner as agreed with the trunk road authority.
- 11.4.44 Conditions 19 – 28 relate to noise and take account of the advice in paragraphs A10 and A29 – A38 of TAN8. They have been the subject of discussion and agreement with the Powys CC Environmental Health Department. I consider they are necessary and reasonable to safeguard the amenity of residents in the area.
- 11.4.45 There is one other matter of a legal Agreement for habitat and bird protection [NC Doc. 54]. As I have indicated, I consider this overcomes the relevant objections and it meets the criteria in WOC 13/97, particularly paragraph B11.

Overall conclusion

- 11.4.46 I appreciate that the proposal would contribute energy benefits and emission savings, particularly at a regional and national level. It would also make a significant economic contribution, although there is no guarantee to what extent this would accrue locally. I have found that there are no unacceptable adverse effects arising from the proposal in respect of traffic, noise, residential amenity, ecology, ornithology or archaeology.
- 11.4.47 However, I do believe that the turbines would have a substantial adverse effect on the intrinsic character of the Western Uplands, particularly the plateau and narrow valleys; together with the enjoyment of rights of way and the national trail, certain viewpoints, scenic routes and other features which MLP policy ENV2 seeks to safeguard. This finding includes the effects arising in combination with the existing Cemmaes wind farm. Individually, these adverse effects do not represent overriding objections to the proposal, but taken as a whole I believe that they would unacceptably compromise the environmental quality of the area, contrary to MLP policy ENV24. On balance, I believe that this outweighs the benefits of the proposal and I shall recommend that the appeal is dismissed.

11.5 CUMULATIVE EFFECTS OF POTENTIAL WIND FARM COMBINATIONS [9.1.1 – 9.9.8]

- 11.5.1 The cumulative effects inquiry session dealt almost entirely on landscape and visual amenity and my conclusions concentrate on those issues. However, it is appropriate in the first instance to briefly refer to other matters which were raised.
- 11.5.2 The possible cumulative benefits of the wind farms to the regional economy must be acknowledged. The construction costs of the 3 proposals would approach £10,750,000 of which a proportion could accrue locally or in Wales generally. About 50 households in Powys are directly associated with wind farms at present and the proposed schemes would provide benefits to local businesses, land owners and employees. In total the 3 proposals could provide about 62MW of installed capacity compared to the existing installed capacity in Powys of 82MW. [9.4.33 – 9.4.34]. Taken together it is claimed the proposals would contribute to an annual reduction of at least 146,358 tonnes of CO₂, 1,920 tonnes of SO₂ and 473 tonnes of Nox emissions. These figures are disputed by objectors to the proposals who also maintain that alternative sources of renewable energy could be just as beneficial without the same harm to landscape and amenity.

However, I consider there are undoubted benefits of the kind summarised above which are a factor which underpins current Government policy towards onshore wind energy.

- 11.5.3 With regard to noise the only possibility of a cumulative effect arises with NC and the Cemmaes wind farm, as the other existing and proposed schemes are too far apart to give rise to any such impact. In the case of NC and Cemmaes, I am satisfied that the evidence shows that there would not be an unacceptable cumulative effect even though levels would be higher than with a single wind farm.
- 11.5.4 In the case of archaeological interests, I accept that if more wind farms are approved in addition to those existing there is likely to be an increasing impact on the setting of visible remains within and around the sites. This is an adverse effect in terms of the appreciation of certain locations, but does not generally directly harm the remains themselves and there is some benefit in that archaeological surveys are undertaken which might not otherwise occur. I do not consider the stage has been reached where the overall historic landscape is unacceptably harmed.
- 11.5.5 In respect of wildlife and habitats, I appreciate the argument that the wind farm proposals could add to a gradual erosion of habitats and populations. However, I consider the evidence to date does not suggest that the totality of wind farms would have an adverse effect in the long term. This is especially so as 2 of the proposals would endeavour to provide a net gain in habitat value through land management agreements.
- 11.5.6 I consider that the significance of cumulative effects on tourism, recreation and rights of way is related to the impact on the attraction of the uplands to users arising from their perception of the type of landscape and visual experience expected. It follows that the increase in the extent and intensity of the visual influence of wind farms on landscape and amenity arising from the proposals in combination would exacerbate any adverse effects.
- 11.5.7 Turning to these landscape and amenity effects, I have already taken account of certain specific cumulative effects, where appropriate, under the previous headings in my conclusions. This section considers the situation if any 2 or all 3 of the wind farm proposals are approved and any probable effects of the various combinations of those proposals together with the existing wind farms. Such effects would be additional to those applying to each of the proposals individually, which are not repeated here but must be taken into account.
- 11.5.8 There has been general agreement by the parties on the extent of the potential visual influence of the combinations and I do not consider there has been significant cumulative loss of the fabric of the landscape. I have concentrated on the possible changes in the appearance and perceived character of the landscape and its visual amenity, including likely effects on the values and experiences associated with the uplands. The cumulative impact studies have dealt with the following combinations :- MC + NC, CL + NC, MC + CL, and MC + CL + NC, all including existing wind farms.
- 11.5.9 The main ZVI study area used by the parties was defined by a 20km radius around the wind farm proposals, estimated at around 198,500ha in area. The existing wind farms of Carno, Cemmaes and Llandinam, and the single CAT turbine, lie within the study area and 3 other wind farms just outside [9.1.1 – 9.1.4]. Powys CC estimate that it may be possible to see existing turbines over 36.5% of the study area as a ‘worst case scenario’. They say it is not possible to see all 7 existing developments together from within the

- study area, and 5 may only be seen from a few high places such as Plynlimon. 4 may be seen from some small fragmented areas of high ground north-east of Talerddig, south-east of Carno, east and west of the B4518 road, Trannon Moor and south of Llyn Clywedog. 3 are seen over more extensive tracts of the same areas and also further afield above Llanidloes and the Wye Valley and in the west around the Dyfi Forest. The visibility influence of 1 or 2 existing wind farms may be seen from elevated localities scattered throughout the study area, although there are no effects on the landscape east of Llangadfan to the north of the A458 trunk road [9.2.8 – 9.2.9].
- 11.5.10 The combination of MC + NC would involve 2 sites which are about 15km apart, with intervening high ground. Consequently, there are very few areas where they would potentially be seen together. These are localised areas close to the sites themselves and distant views from the hills to the north of the Banwy valley which would be a new area of influence and a few locations south of Carno. The additional effect on viewpoints and roads would also be limited. Powys CC consider this combination has the least significant cumulative effects and CCW indicate it is the lowest area from which the greatest number of turbines are seen and from which 2 or more wind farms may be visible. I have already indicated that I find the effect of NC and Cemmaes to be unacceptable, but the addition of MC in itself would not be significant. It follows that if the Assembly are minded to approve both the individual MC and NC proposals then this combination raises no additional cumulative concerns.
- 11.5.11 The combination of CL + NC would have more extensive effects than MC + NC, but still only covering scattered and widespread areas. Particular locations would be a few areas on the western side of the Dovey Valley, the Cemmaes plateau, a few high locations in the National Park and extending round to the hills north of Llangadfan and Dolanog, and valley and plateau slopes on the west side of the B4518 road and towards Plynlimon. Local effects near to CL would be concentrated north-west and south of Carno, around Garreg-hir and the Mynydd yr Hendre plateau. Views from Glyndwr's Way, some minor roads and the trunk road around Carno would be affected. Powys CC consider this combination has the most significant effects, mainly due to visibility from high summits and both sides of the Carno Valley and the effects of existing wind farms. The evidence of NWP suggests they feel this combination would have the most significant landscape effects. I find that that there would be significant adverse visual effects, including those on Glyndwr's Way and Garreg-hir, and the fact that turbines of 3 or 4 existing wind farms would be seen in several of the views. Although these effects are scattered over a wide area, I do consider they are substantially adverse.
- 11.5.12 The CL + MC combination would have significant effects in medium views within 10km to the north, north-west and north-east. This would include the plateau areas around the sites themselves and over Mynydd Waun Fawr. There would be an area of mainly new influence extending eastward towards Pant-y-ffridd, including the Cefn Coch, Adfa and New Mills areas. In medium to long views beyond 15km they would be seen from slopes above Newtown and Llandinam and Llanidloes; and also in some distant views to the north-west above Pontrobert. There would be quite an intense effect on minor roads, commons and the outlook of residents. A considerable number of viewpoints would experience moderate or major effects due to the close proximity of the sites and intervisibility, including substantial effects on Garreg-hir and the Carno – Cefn Coch road. CCW say this combination has the most extensive additional areas where blades are seen. I consider that the intensive overlap of the visual influence of these 2 schemes would be unacceptable.

- 11.5.13 The combination of all 3 proposals, MC + CL + NC, would be seen from areas of high ground within 10km of all the sites, including the immediate surroundings of the sites themselves. Further away there would be elevated views to the north beyond the A458 trunk road, and to the south-west of the study area. Although the areas affected would be limited, they would combine with views of 3 or 4 existing wind farms in certain sensitive locations. These would include land to the south-east of Carno and further west around Dolfach, around Llyn Clywedog and the Dylife scenic route, and just to the north-east of Llanbrynmair including part of Glyndwr's Way.
- 11.5.14 I am especially concerned about the overall cumulative effect of all 3 proposals and existing wind farms on the central swathe of the study area. In broad terms this is the area comprising the high ground on either side of the A470 extending for about 20km between Clatter to the east and Commins Coch to the west. It extends some 6 – 8 km to the south of the road and to the north it comes within about 3km of the A458 trunk road. This area has many footpaths and a number of viewpoints including Garreg-hir and parts of Glyndwr's Way, together with some views from stretches of the A470 itself. In many of the viewpoints parts of turbines from between 1 and 4 existing and 1 – 3 of the proposed wind farms might be seen. The 3 new proposals, together with Cemmaes and Carno wind farms, would often feature in various views in which they would appear as a dominant, intrusive and sometimes disturbing features depending on the position of the receptor.
- 11.5.15 In terms of the study area as a whole, I do not consider the cumulative effects of any of the combinations added to those of existing wind farms would give the impression of a wind farm landscape when seen from the main road system or from settlements in the area. The overall variety of the SLA landscape and its topography means that views of turbines are usually intermittent and often distant from those areas. However, I believe that cumulative effects must also be considered in terms of the impact on different receptors within the overall scene which have a visual capacity of their own.
- 11.5.16 If all 3 proposals were approved, therefore, I consider that a serious adverse effect would arise in the following respect. The open character of the plateaux in the Western Uplands SLA has already been affected by afforestation and existing wind farms. A recognised major feature of the upland plateau areas and other upland areas is the visual experience to be gained using the rights of way network, including the Glyndwr's Way National Trail, scenic routes and visiting important viewpoints. The plateau areas offer extensive vistas and fine horizons in an open and tranquil setting, largely devoid of man made structures. I am in no doubt that if the 3 proposals were approved a threshold would be exceeded where the particular recreational and visual experience of visiting these upland areas would be unacceptably harmed, with wind farms sited on 4 of the 5 plateau areas in the Western Uplands SLA. It is my conclusion that the combination of all 3 proposals and existing wind farms would be unacceptable.
- 11.5.17 My overall conclusions on the various combinations are that the MC + NC combination would cause the least cumulative harm; and the CL + NC combination would cause substantial harm. The MC + CL combination would be unacceptable and the approval of all 3 proposals (MC + CL + NC) would also be unacceptable due to the cumulative harm to the character and special qualities of the SLA I have indicated.

12. RECOMMENDATIONS

I recommend that :-

(1) PINS ref: APP/T6850/X/00/513765.

Application for 17 wind turbines, access tracks, meteorological mast, and sub-station at Mynydd Clogau, Adfa.

Permission be given, subject to the conditions referred to in paragraphs 11.2 36 – 11 2.42.

(2) PINS ref: APP/T6850/X/00/513824.

(a) Application for 42 wind turbines, access tracks, compound and ancillary development at Cwm Llwyd/Mynydd Rhosfach, Cefn Coch.

Permission be refused.

(b) Application for 132/33kV sub-station compound, control building and ancillary development, near Cefn Brith, Carno.

Permission be refused.

(3) PINS ref: APP/T6850/X/00/1050744.

Application for 16 wind turbines and associated access tracks, control building, monitoring mast and temporary compound, Nant Carfan, near Llanbrynmair.

The appeal be dismissed and planning permission refused.



Inspector

MC APPENDIX A - APPEARANCES

For the Applicants (Renewable Energy Systems Ltd)

Mr M Challis, Solicitor	of Norton Rose, Solicitors, Kempson House, Camomile Street, London EC3A 7AN.
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He called:

Mr C N B Shears BSc	Project Manager for RES Ltd.
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Mr D I Stewart MA DipTP MRTPI	Principal of David Stewart Associates, Planning Consultants.
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Mr G Soltys BSc(Hons) DipLA MIHort MLI	Partner in Soltys:Brewster, Environmental Consultants.
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For Powys County Council

Mr C Edwards	Shire Solicitor with the County Council.
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He called:

Mr G Lee BSc DipEM MRTPI	Head of Development Control for Montgomeryshire Division.
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Mr C Lloyd HND(Eng) AMIHIE	Highways Development Control Officer.
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For Countryside Council for Wales

Mr B Smith, Solicitor	of Browne Jacobson, Solicitors, 44 Castle Gate, Nottingham NG1 7BJ.
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He called:

Mr R G Woods BSc	CCW Area Officer (East Wales).
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For Campaign for the Protection of Rural Wales

Mr G A Sinclair	Principal of Environment Information Services and Consultant to CPRW.
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He gave evidence himself and called:

Mr M Williams BA	Director of CPRW.
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Mr C Humphrey MSc CEng MIM FCMC	CPRW member of Pantmaenog, Cwmbelan.
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Mr C Faulkner BSc MSc	Conservation Officer, Montgomeryshire Wildlife Trust.
Mr S Martin	Branch Chairman, Shropshire CPRE.
Mr P Fenton	Owner of Llwyn Celyn Holiday Home Park, Adfa.

For Conservation of Upland Montgomeryshire

Mr H Benbow	Chairman of CUM.
Mrs A Davies	Vice Chair of CUM.
Dr A Cresswell BSc(Hons) PhD PGCE	Llanerch, Carno.
Dr L R Mytton BSc(Hons) PhD	Llanerch, Carno.
Mr L Smith DipAD FRSA	Gwerfyda, Llanllugan.
Mrs M Watkin	Licensee of Cefn Coch Inn, Cefn Coch.

Interested persons

Mr M J Westwood	Hen Dai, Adfa.
Mr J I Evans	Belan-yr-argae, Cefn Coch.
Mr H Benbow	Dolyfardyn, Cefn Coch.
Mr R E Benbow BSc(Hons)	Dolyfardyn, Cefn Coch.
Mrs P Madge	Castell-isaf, Adfa.
Mr T Richardson	The Heath, Tregynon.
Mrs C Westwood	Hen Dai, Adfa.
Dr A Cresswell	rep. Mrs J Anderson of Ty Cerrig, Adfa.
Mr Des Oliver	Cefn Coch Caravan Park, Cefn Coch.
Mr W D Cooke	Berriew Community Councillor.
Mr David Oliver	6 Brynllugan, Cefn Coch.
Mrs H Smith	Gwernfyda, Llanllugan (also rep. Mrs T Jones, Cae Bryn, Cefn Coch).
Mrs J Hill	Rhos, Carmel, Cefn Coch.

MC APPENDIX B – DOCUMENTS, PLANS, PHOTOGRAPHS & VISUALISATIONS.

DOCUMENTS

- Document 1 RES Environmental Statement Volume I – non-technical summary.
- Document 2 RES Environmental Statement Volume II – environmental statement (1988).
- Document 3 RES Environmental Statement Volume III – figures & photomontages (1988).
- Document 4 RES Environmental Statement Addendum – traffic & access (Sept. 1998).
- Document 5 A. RES Additional Environmental Information for Inquiry (Oct. 1999).
B. Planning Guidance (Wales): Planning Policy (1999).
C. Technical Advice Note 8 (Wales): Renewable Energy (1996).
- Document 6 1996 planning application for 20 turbines.
- Document 7 1998 planning application for 17 turbines subject of call-in (M98/0669).
- Document 8 Powys CC note on application, consultations and objections.
- Document 9 (a) Inquiry notification letter, advert and circulation list.
(b) Pre-inquiry meeting note.
- Document 10 Inquiry attendance lists.
- Document 11 Powys CC list of existing and proposed windfarms (with plan).
- Document 12 Powys CC briefing note on ‘Montgomeryshire Landscape Assessment’ and Special Landscape Area (with Council committee minute).
- Document 13 (a) Powys CC correspondence on highway matters dated 10.8.00.
(b) Letters of 27.1.96 and 14.8.00 from Bowen & Sons re stone supplies from Tanyfoel Quarry.
(c) Powys CC note on Ystrad Bridge and Adfa Chapel.
- Document 14 Observations on windfarm proposal from Environment Agency (Wales) dated 4.9.00.
- Document 15 Letter from Mick Bates (AM) and Lembit Opik (MP) dated 4.8.00.
- Document 16 Documents 1 – 30 submitted by Mr D Stewart (RES/DS3).
1 – 9 Various Government speeches, statements and debates on renewables.
10 Details of NFFO contracts, NFFO 3, 4 and 5 and map of Welsh Wind farms.
11 – 13 Notes on Planning Guidance (Wales); TAN 8; CC ‘Wind Energy in the Landscape’; and CCW ‘Policy for Wind Turbines.’
14 BWEA Best Practice Guidelines.

- 15 – 25 Various wind farm appeal and application decision letters.
 - 26 Powys Structure Plan extracts.
 - 27 Extracts from deposit Montgomeryshire Local Plan and changes.
 - 28 Extracts from Local Plan Inspector's report.
 - 29 Proposed Local Plan modifications.
 - 30 Draft conditions for discussion.
- Document 17 Appendices 1 – 9 submitted by Mr C Shears (RES).
- 1. 'Windicator' (July 2000).
 - 2. Pollution savings and electricity supply for M. Clogau (with Table from 8.1 of suppl. proof).
 - 3. REAG Report 1992.
 - 4. Renewable Energy Bulletin 7 (1997).
 - 5. Original 20 turbine layout plan in 1996.
 - 6. Extracts from The Rating of Noise from Windfarms (ETSU 1996).
 - 7. BWEA guidelines for Health & Safety.
 - 8. Extract from HoL Select Committee report on Renewables (June 1999).
 - 9. Lendrum's Bridge Health & Safety plans.
 - 10. Distance table: MC turbines & nearest neighbours.
- Document 18
- A. Public opinion surveys – Tables in 3.15 of C. Shears proof.
 - B. Public Attitudes towards Windfarms in Scotland – Scottish Executive Central Research Unit (2000).
- Document 19
- (a) RES visibility analysis methodology (G Soltys proof sect. 5.2).
 - (b) Summary table of viewpoints assessment (G Soltys/RES).
 - (c) Powys CC memorandum on public rights of way dated 22.10.98 (RES/2).
- Document 20
- (a) Written statement for RES on ornithology by Dr S Percival (RES/3).
 - (b) Birds and wind turbines in Britain – Dr S Percival (2000).
- Document 21
- (a) South-west Cornwall holiday guide.
 - (b) Western Daily Press cutting of 24.11.99.
- Document 22
- (a) Emissions from renewable energy & conventional electricity generation in UK (RES/8).
 - (b) NFFO overall figures MWdnc (RES/9).
- Document 23
- (a) Letter from Lakefield Caravan Park (RES/16).
 - (b) Westmorland Gazette cutting of 8.12.00 (RES/13).
 - (c) Machynlleth walks leaflet (RES/12).
 - (d) Cambrian News cuttings of 31.8.00 and 7.9.00 (RES/14 & 15).
- Document 24
- Extract from legal case of *NWP v SSETR and Teesdale DC and M E Mann (CA 1998)* re alternative sites.
- Document 25
- CCW Assessment of the visual impact of wind turbines at the Mynydd Clogau development – The Macaulay Land Use Research Institute (2000) [also see Plans L – R].
- Document 26
- Extract from Vol. II of Biodiversity: The UK Steering Group

- Report – Skylark (CCW/W1).
- Document 27 (a) Status and distribution of breeding Black Headed Gulls in Montgomeryshire – CCW (1998) (CCW/W2).
(b) Extract from New Atlas of Breeding Birds 1988-91 on Black Headed Gulls (CCW/W3).
- Document 28 Letter of objection to Powys CC from CCW dated 11.11.98 (CCW/W4).
- Document 29 Montgomeryshire Landscape Assessment – Montgomeryshire DC (1992) (CCW/L2).
- Document 30 (a) Energy: Policy & perspectives for the Welsh countryside – CCW (1992) (CCW/L3).
(b) CCW policy on wind turbines (CCW/L4).
- Document 31 Letter to CCW from Mid Wales Tourism dated 30.6.98 (CCW/L5), with note on status of the company.
- Document 32 (a) Trannon Moor ornithological survey – RSPB (1998), with appendix on Curlews (CCW/W5).
(b) BWP note on the Skylark (CCW/W6).
(c) Extract from The Effects of a Windfarm on the Upland Breeding Bird Communities of Bryn Titli 1993-4 – J Phillips (CCW/W7).
- Document 33 CPRW 2000 policies on wind power installations – extract from proof of Mr M Williams.
- Document 34 Sinclair/Thomas approach to visual impact (Sinclair/CPRW App. A).
- Document 35 (a) Windpower Stations in the UK (Sinclair/CPRW App. B).
(b) Windpower Stations in Wales (Sinclair summary p.10).
(c) Wind farm IC in Montgomeryshire (Sinclair proof 5.13).
- Document 36 Letters to PINS from CPRW dated 18.8.00 and from CCW dated 23.8.00 (Sinclair/CPRW Apps. C and D).
- Document 37 Wind energy projects in Mid-Wales (Sinclair/CPRW App. E).
- Document 38 Report to Countryside Agency on Renewables – G Sinclair (1999) (Sinclair/CPRW App. F).
- Document 39 Report on off-shore wind energy – BWEA 2000 (Sinclair/CPRW App.G).
- Document 40 (a) Llwyn Celyn Caravan Park brochure (Fenton A).
(b) Valuation of Llwyn Celyn and revaluation (Fenton B & E).
(c) Instructions for Llwyn Celyn site survey (Fenton C).
(d) Extract from 'Do you value your holiday caravan parks' - I Butler 1997 (Fenton G).
- Document 41 Llwyn Celyn newsletter (CPRW/7), with bundle of objection letters

- from caravan occupiers (Fenton D).
- Document 42 Extract from 'Tourism 2000' (WTB), with letter on policy review dated 9.8.00 (Fenton F).
- Document 43 Inquiry proof re noise from Easington and Hollym windfarm Inquiry (Fenton H).
- Document 44 Letters from Bryn Tawel, Adfa; Gwernydd Hall Holiday Home Park; and Salop Caravans Ltd, put in by Mr Fenton/CPRW.
- Document 45 Statement of Mrs A Roberts (British Horse Society), with Appendices A and B, put in by CPRW.
- Document 46 Statement by Ms M Robinson (Ramblers Association), put in by CPRW.
- Document 47 Press cuttings from County Times & Western Mail (CPRW/1).
- Document 48 Copy of petition of objection to transmission line (with plan) from Bwlch-y-garreg residents (CPRW 2 & 3).
- Document 49 Letter from The Mill pony trekking centre, Aberhafesp (CPRW/5).
- Document 50 CPRW comment on RES viewpoint analysis (CPRW/8).
- Document 51 Conservation of Upland Montgomeryshire (CUM) brochure.
- Document 52 (a) Critique & objection to planning application (CUM App. 1).
(b) Addendum to critique (CUM App. 2).
- Document 53 (a) Extract from Dr L Mytton (CUM) proof re windpower alternatives.
(b) UK wind resource in relation to Europe (CUM).
- Document 54 Supplementary 'red' statement of Mr L Smith (CUM) [pages 1 – 16].
- Document 55 Sound levels (Dr A Cresswell/CUM).
- Document 56 (a) Letter re effect of wind farm in Ceredigion (CUM/1).
(b) CUM/3 letter re installation of noise measuring device at Ty Uchaf.
(c) Note by Mrs A Davies on use of bridleway to site.
- Document 57 Note by J Hansen on global warming (CUM/4).
- Document 58 Comparison of original and current turbine size/swept area (CUM).
- Document 59 Comment on RES public questionnaire survey (CUM).
- Document 60 Community survey for former Mynydd yr Hendre scheme (CUM).

- Document 61 Petition from Cefn Coch residents, put in by Mr David Oliver.
- Document 62 (a) Objection letters handed in at inquiry from Mr A Winstanley, Cwm, Adfa and Mr D Anderson, Ty Cerrig, Adfa.
(b) Letter from Uckfield Riding Club re Ty Cerrig.
- Document 63 Annex to letter from National Assembly to RES requesting further EIA information (now in Doc. 5A).
- Document 64 Bundle of documents put in with written submission of Country Guardian.
- Document 65 Powys CC note on status of Montgomeryshire Local Plan.
- Document 66 Joint RES/Powys CC response on route through Berriew and use of Bridleway 26 dated 19.10.00.
- Document 67 A. Draft list of conditions revised 15.02.01.
B. RES suggested conditions RES 19 and 20 on birds and highways handed in at cumulative inquiry session.
C. Letter from applicants to PINS re conditions dated 05.01.01.
- Document 68 A. Letter from Powys CC dated 8 March 2001 re outstanding highways issues.
B. Statement RES18 on Highways Agreement, with draft Agreement.
- Document 69 Letters dated 8 August 2000 and 2 March 2001 from Brynfawnog GA re CL 39 and from Common CL 41 Grazing Committee.

PLANS

[Note: The following list does not include the ES Vol. III plans and figures contained in Doc. 3]

- Plan A Location plan (1:25000).
- Plan B Site and turbines layout plan.
- Plan C Possible amendment to site layout with turbine 7 re-located (RES/11).
- Plan D RES traffic plans:
(1) Berriew centre.
(2) Swept path diagram.
(3) Wheel tracks through Berriew.
- Plan E Public rights of way (PCC 14).
- Plan F (1) CCW 1:50000 location plan of common land.
(2) Extract from Commons Registration Map.
- Plan G (1) Powys CC 1:25000 plan of SLA boundary.
(2) Local Plan SLA boundary enlargement showing turbine

locations (RES/4).

Plan H	Existing & proposed windfarms within 30 kms (Soltys Fig. 17).
Plan I	(1) Visible windfarms within 30 kms minus Mynydd Clogau (Soltys Fig. 18). (2) Visible windfarms within 30 kms with Mynydd Clogau (Soltys Fig. 19).
Plan J	Visible nacelles within 30 kms (Soltys Fig. 20).
Plan K	Visible blade tips within 30 kms (Soltys Fig. 21).
Plan L	Extent of visibility of existing & agreed wind turbines and Mynydd Clogau (top of rotor arc) plus 15 kms radius of view (CCW Fig. 1).
Plan M	Visibility distribution of existing & agreed wind turbines and Mynydd Clogau (CCW Fig. 2).
Plan N	(1) Extent of turbine visibility within 7 kms (CCW Fig. 3). (2) Visible turbine distribution within 15 kms (CCW Fig. 4).
Plan O	Extension of turbine visibility due to Mynydd Clogau within 15 kms (CCW Fig. 5).
Plan P	Visibility of Mynydd Clogau within 7 kms radius: (1) top of rotor arc (CCW Fig. 6) (2) nacelle (CCW Fig. 7) (3) bottom of rotor arc (CCW Fig. 8) (4) ground level (CCW Fig. 9).
Plan Q	Land above 300m with 15 kms radius of view (CCW Fig. 10).
Plan R	Visibility of turbines from road network (CCW Fig. 11).

PHOTOGRAPHS AND VISUALISATIONS

*[Note: The following list does **not** include the ES Vol. III photographs/wireframes contained in Doc. 3]*

Photo 1	Appendices to proof of Mr G Soltys (RES):
	Fig. 1 Panoramic view above Severn Valley.
	2 Location of viewpoints.
	3 Viewpoint 1 – Garreg Hir.
	4 Viewpoint 4 – near Tanyfoel Quarry.
	5 Viewpoint 3 – rear of Cefn Coch Inn.
	6 Viewpoint 17 – Llanllugan.
	7 Viewpoint 2 – Adfa.
	8 Viewpoint 5 – Waun y pant.

- 9 Viewpoint 15 – south of Tregynon.
- 10 Viewpoint 10 – north-west of Aberhafesp.
- 11 Viewpoint 12 – A483 south of Newtown.
- 12 Viewpoint 14 – bridleway east of Llandinam.
- 13 Viewpoint 7 – bridge at Caersws.
- 14 View from Carno valley looking east.
- 15 Viewpoint D addendum – view from bridleway 26.
- 16 Viewpoint B addendum – view from Ty Hir.

Photo 2 Views from Cefn Coch Caravan Park (Mr D Oliver).

Photo 3 Views from Llwyn Celyn Caravan Park (Mr P Fenton).

CL APPENDIX A – APPEARANCES

For the Applicants (Powergen Renewables)

Mr M Trinick, Solicitor Partner, Bond Pearce Solicitors, Ballard House,
West Hoe Road, Plymouth PL1 3AE.

He called:

Mr P Hinson CEng MICE Development Manager, NWP.

Mr S B Salt BSc(Hons) DipTP MRTPI FIQ Planning Manager, West Coast Energy.

Ms K F Hawkins BSc(Hons) BLD MLI Director, E4 Environmental Consultancy.

Mr S Lowther BA(Hons) MSc MIEEM Director, Casella Science & Environment.

Mr M D Hayes BSc MIOA Partner, Hayes McKenzie Acoustics Consultants.

For Powys County Council

Mr C Edwards Shire Solicitor with the County Council.

He called:

Mr D Boyington BA(Hons) HNC Highways Strategy & Programmes Officer.

For Countryside Council for Wales

Mr B Smith, Solicitor of Browne Jacobson, Solicitors, 44 Castle
Gate, Nottingham NG1 7BJ.

He called:

Mr R G Woods BSc CCW Area Officer (East Wales).

Mr R M Matthews BSc MSc Montgomeryshire District Officer.

For Campaign for the Protection of Rural Wales

Mr G A Sinclair Principal of Environment Information
Services and Consultant to CPRW.

He gave evidence himself and called:

Mr M Williams BA Director of CPRW.

Mr C Faulkner BSc MSc Conservation Officer, MWT.

For Conservation of Upland Montgomeryshire

Mrs A Davies	Chair of CUM.
Dr A Cresswell BSc(Hons) PhD PGCE	Secretary of CUM.
Dr L R Mytton BSc(Hons) PhD	Llanerch, Carno.
Mr L Smith DipAD FRSA	Gwerfyda, Llanllugan.
Mr G E Davies	Carreg-y-Big, Cefn Coch.

Interested Persons

Mr A L Burton	Tyn-yr-eithin, Carno.
Mr A Selvey	Llechwedd- ddu, Cwm Llwyd, Carno.
Mr D H Benbow	Dolyfardyn, Cefn Coch.
Mr R Benbow	Dolyfardyn, Cefn Coch.
Dr A Cresswell	Llanerch, Carno.
Mrs A Davies	Carreg-y-Big, Cefn Coch.
Mrs P Madge	Castell-isaf, Adfa.
Mr G Davies	Carreg-y-Big, Cafn Coch.
Mr P Brachi MA DipTP	Ffrwd Wen, Carno.
Mr G Thomas	Bronhaul, Carno.
Mr M Lloyd	Hendre, Cwm Llwyd, Carno.
Mrs M Lloyd	Hendre, Cwm Llwyd, Carno.

CL APPENDIX B – DOCUMENTS, PLANS, PHOTOGRAPHS & VISUALISATIONS

DOCUMENTS

- Document 1 Core documents file 1 (**CD1**): 1994 Mynydd-yr-Hendre planning application and Environmental Statement (Volumes 1 – 4).
- Document 2 Core documents file 2:
CD2 – 1995 Mynydd-yr-Hendre revised proposals and Addenda to Environmental Statement.
CD3 – Report to Montgomery DC Planning Committee of 23 Nov. 1995.
CD4 – Cwm Llwyd planning application (17 Oct. 1997).
- Document 3 Core documents file 3 (**CD5**): Cwm Llwyd Environmental Statement (with accompanying letter to Powys CC of 21 Dec. 1998).
Volume 1 – Non-Technical Summary.
Volume 2 – Environmental Statement (1998).
Volume 3 – Technical Appendices (1998).
Volume 4 – Figures and Plans (1998).
- Document 4 Core documents file 4 (**CD6 – CD23**).
CD6 – Cwm Llwyd sub-station application dated 21 Dec. 1998.
CD7 – Powys County Structure Plan 1996.
CD8 – Deposit Montgomeryshire Local Plan 1995 (with Proposals Map).
CD9 – Modifications to Local Plan (June 1997).
CD10 – Powys UDP proposed strategy report (April 2000).
CD11 – PPG22: Renewable Energy.
CD12 – Planning Guidance (Wales): Planning Policy (1999).
CD13 – NPPG6: Renewable Energy Developments (2000).
CD14 – TAN5: Nature Conservation.
CD15 – TAN8: Renewable Energy.
CD16 – TAN11: Noise.
CD17 – TAN18: Transport.
CD18 – WOC 60/96 Historic Environment: Archaeology.
CD19 – CM1200 This Common Inheritance [extracts] (1990).
CD20 – CM2426 Sustainable Development: The UK Strategy [extracts] (1994).
CD21 – A Sustainable Wales Learning to Live Differently and Measuring the Difference [extracts] (NAW January and November 2000).
CD22 – Energy Paper 62.
CD23 – New & Renewable Energy-Prospects for the 21st Century (DTI Consultation Paper 1999).
- Document 5 Core documents file 5 (**CD24 – CD44**).
CD24 – Analysis of responses to CD23.
CD25 – Conclusion on Public Responses to CD23 and 24.
CD26 – New & Renewable Energy-Prospects for the 21st Century Renewables Obligation (Preliminary consultation Oct.2000).
CD27 – Best Practice Guidelines for Wind Energy Development (BWEA 1994).

CD28 – Planning for Wind Energy: A guide for Regional Targets (BWEA 2000).
CD29 – Welsh Affairs Committee Second Report on Wind Energy (1994).
CD30 – Montgomeryshire Landscape Assessment (Montgomeryshire DC 1992).
CD31 – Guidelines for Landscape & Visual Assessment (LI/IEA 1995).
CD32 – CCW Vision Statement draft (2000).
CD33 – CCW Policy on Wind Turbines (2000).
CD34 – CCW Policy on Wind Turbines – checklist for development Proposals (2000).
CD35 – *Deleted*.
CD36 – Inquiry PIM note.
CD37 – Extract from Common Land Register and Map.
CD38 – Statement on Planning History of site.
CD39 – Statement on relevant local and national planning policies.
CD40 – Statement on content of planning applications.
CD41 – Statement on site description.
CD42 – Statement on landscape character.
CD43 – Statement on ZVIs and viewpoints.
CD44 – Renewable Energy in Wales (WDA Guide 2000).

- Document 6 Inquiry notification letter and location plan of site notices (PCC 7 and 8).
- Document 7 Pre-inquiry meeting note.
- Document 8 Inquiry attendance lists.
- Document 9 Note on applications M97/814 and 99/117 (PCC 1).
- Document 10 List of existing and proposed wind farms (with plan) (PCC 2).
- Document 11 Montgomeryshire Local Plan status (PCC 12).
- Document 12 Minutes of Planning Committee on 5.3.99 (PCC 14).
- Document 13 Details of Common land (with map) (PCC 17).
- Document 14 (1) Letters from Highways Authority re Class III road C2013 dated 24.11.00 and 18.12.00
(2) Powys CC traffic survey tables (undertaken 2.11 – 7.11.2000).
- Document 15 NWP letter dated 11.1.01 withdrawing screen planting proposal from application M97/814.
- Document 16 NWP letter of amendment to application M99/117 re access track to sub-station dated 13.12.00.
- Document 17 Appendices to proof of Mr Salt (NWP) SBS3/1 – SBS3/26 comprising:
1. “This Common Inheritance” – extract.
2. Michael Meacher speech to BWEA.
3. “Energy: the Changing Climate” and Press Release.

4. Prime Minister's speech on 24.10.00.
5. DETR Press Release 9.3.00.
6. UK Climate Change Programme forward and Press Release.
7. Ministerial statements on energy policy and NFFO 1989 – 97, with implementation details.
8. HoL report extract "Electricity from Renewables", with response.
9. HoC debate January 2000, with Helen Liddell speech.
10. Lord Whitty speech; Press Release and BWEA report on DETR Select Committee report.
11. NAW debate on climate change and renewable energy.
12. NAW debate on "The future role of Renewable Energy".
- 13 – 21. Various wind farm appeal decisions.
22. Environment Agency letter dated 23.4.1999.
23. (Deleted).
24. Letter from CPAT dated 5.2.1999.
25. D Stewart Tourism Survey and note on Tourism.
26. Powys CC rights of way strategy extract.

Document 18 ECOTEC Outline Ecological Assessment (SBS3/29).

Document 19 (1) Local Plan Inspector's Report extract re policy ENV3.
(2) "Learning to Live Differently" [NAW 2000].
(3) CL energy capacity & local economy benefits (Hinson CE proof, pages 7 and 9).

Document 20 Appendices of Mr Hinson (NWP) PGH1 – PGH18 comprising:
1. NWP company brochure.
2. DETR Press Release – 6 March 2000.
3. "Climate Change Wales" [NAW March 2000].
4. BWEA "Planning for Wind Energy – A guide for Regional targets"
5. NWP wind turbine leaflet.
6. Health & Safety in the wind energy industry [BWEA].
7. Shadow Flicker Assessment – NWP.
8. Construction vehicle details – WSA
9. Carno wind farm s.278 Agreement.
10. Tourist Information documents.
11. Carno wind farm leaflet.
12. Bryn Titli wind farm leaflet.
13. Public comments information leaflet.
14. Cwm Llwyd wind farm public consultation leaflet.
15. David McClean contracting newsletter.
16. Cambrian Engineering brochure.
17. Correspondence on railway safety.
18. Letter from Tanyfoel Quarry.

Document 21 Appendices of Mr Lowther (NWP) SL2 – SL5 comprising:
SL2. UK Biodiversity Action Plan – list of threatened/declining species.
SL3. The State of UK's Birds 1999 extract (RSPB).
SL4. Haverigg wind farm ornithological monitoring programme.
SL5. Draft ecological constraints & restoration statement for Cwm Llwyd.

- Document 22 (1) Powys CC note on MLA, SLA, Local Plan and UDP.
(2) Mid-Wales Tourism letter to CCW dated 21.12.00 [*identical to Doc. 35(4)*]
- Document 23 Appendices 1 – 8 of Ms Hawkins (NWP) comprising:
1. References.
2. Method of Assessment.
3. Photomontage production.
4. Figure KFH3/1 – 5km ZVI of blade tip height.
5. Figure KFH3/2 – Locations of dwellings and Commons.
6. Summary of local residential survey.
7. Wireframe views from local properties.
8. Summary of public attitude surveys.
- Document 24 Appendices A – G of Mr Hayes (NWP) comprising:
A. Meter specification.
B. Traffic noise levels.
C. Regression analysis using 90% CL.
D. Assessment of incident noise levels.
E. Assessment of incident noise levels using 90%CL.
F. Table of wind directions used for background noise analysis.
G. Rainfall periods in mid-Wales.
- Document 25 The Assessment & Rating of Noise from Wind farms (ETSU 1996).
- Document 26 A Critical Appraisal of Wind Farm Noise Propagation (ETSU 2000).
- Document 27 Wind Turbine Measurements for Noise Source Identification (ETSU 1999).
- Document 28 County Times press article by MWT (12 Jan. 2001).
- Document 29 Amended site layout submitted to the Inquiry on behalf of NWP, with letter dated 23 Jan. 2001, Figure 2B showing amended layout of turbines and access tracks, turbine position co-ordinates, and a note to accompany Figure 2B (ref: SBS30).
- Document 30 Extracts from proof of Ms K Hawkins:
1. Table 2 – Landscape character areas.
2. Summary proof pages 8-13 – Visual and effects assessment.
3. Table 3 – Viewpoints.
4. Table 4 – Viewpoint analysis : Landscape character.
5. Table 5 – Viewpoint analysis : fixed viewpoint receptors.
6. Table 6 – Viewpoint analysis : linear route receptors.
- Document 31 CCW landscape appendices CLL1 – CLL3 comprising:
1. CCW policy on wind turbines.
2. CCW Policy & Perspectives for the Welsh Countryside.
3. A Strategy for Public Rights of Way and Access (Powys CC 1995).
- Document 32 The Assessment of the Visual Impact of Wind Turbines at Cwm Llwyd (including Figures 1 - 11 [CCW/CLL4]. (*Also see Plan N*).

- Document 33 CCW ornithology appendices CLO1 – CLO9 comprising:
1. Biodiversity: UK Steering Group Report – Skylark (1995).
 2. A method for assessing upland breeding waders – Brown and Shepherd (1993).
 3. Powys County Structure Plan (*see Doc. 4/CD7*).
 4. Trannon Moor Ornithological Survey (1995).
 5. Trannon Moor Ornithological Survey (1997).
 6. Trannon Moor Ornithological Survey (1998).
 7. Trannon Moor Ornithological Survey (1999).
 8. Breeding Waders at Nasudden WF (S & T Percival 1998).
 9. MWT Lapwing & Curlew Survey (1995).
- Document 34 UK Biodiversity Group (Vol. VI) – Blanket Bog Habitat Action Plan (CCW/CLL3).
- Document 35
- (1) Wales Tourist Board Wind Farm Policy letter (CCW)
 - (2) Note on approval of Wales Tourist Board Policy (CPRW/6).
 - (3) CCW brochure on Countryside & Rights of Way Act 2000.
 - (4) Mid-Wales Tourism letter to CCW dated 21.12.00.
- Document 36
- (1) CPRW wind farm policies.
 - (2) Extracts from proof of Mr Sinclair (pages 8-12 & 19-23 & 26) on CL capacity/emissions and visual impact analysis.
 - (3) Letter to Carno CC from NWP of 11 Jan. 1999 and letter to Dwyriw CC from Shire Planning Officer dated 14 Jan. 1999 (CPRW/5).
- Document 37 Appendices A – D of Mr Sinclair (CPRW) comprising:
- (A) UK Wind Power stations as at December 2000.
 - (B) Visual impact of turbines in relation to distance.
 - (C) Conversion of verbal gradings to numerical indices.
 - (D) Inspector's report extract – Holderness Inquiry (March 2000).
- Document 38 Press Statement on Lambrigg Wind Farm and community fund (CPRW/4).
- Document 39 The Economic Value of Walking in Wales – P Midmore (CPRW/7).
- Document 40 Letter and financial tables re Carno CC Trust Fund.
- Document 41 Letter of objection to wind farm from Dwyriw Community Council.
- Document 42
- (1) Appendix A of Dr L Mytton (CUM) re income, CO₂ and electricity.
 - (2) Appendix B of Dr L Mytton (CUM) re approval of Montgomeryshire Landscape Assessment.
- Document 43 Appendices 1 – 5 of Mr L Smith (CUM) comprising:
- (1) Cement and CO₂.
 - (2) Loss of flora to development
 - (3) Article on photovoltaics.
 - (4) Use of photovoltaic tiles.
 - (5) Height comparisons with a wind turbine.

- Document 44 Tables from noise proof of Dr A Cresswell (CUM).
- Document 45 (1) Tranquil Areas of England 1960s and 1990s (Cresswell/CUM Figures 1 and 2).
(2) Night pollution (Cresswell/CUM Figure 3).
(3) NWP Figs. 1210/Dir 1 – 10 wind speed and direction data graphs for various properties put in by Dr Cresswell.
- Document 46 Archaeological Figures 1 and 2 of Dr Cresswell (CUM) showing distribution and age of sites.
- Document 47 CUM Traffic Survey for 16 October and 6 November 2000.
- Document 48 Various articles and letters concerning effects of wind farms put in by CUM (paginated 1 – 16).
- Document 49 (1) CUM summary of community survey in December 2000 (Smith/CUM Appendix 7).
(2) Note on landscape model (with photos) and BWEA 'best practice' guideline (Smith/CUM Appendix 8).
- Document 50 Notes on relationship of landscape and sky and on turbine shadow (Smith/CUM Appendix 9 and 10).
- Document 51 (1) Letters to CUM re effect of Mynydd Gorrddu wind farm in Ceredigion.
(2) Note by MAIWAG on turbine noise put in by CUM.
- Document 52 CPAT comments on CUM archaeological statement.
- Document 53 (1) WS Atkins report for NWP on access to Cwm Llwyd site, with plans W5583/SA-CW/001 – 004 (November 1998).
(2) Letter from NWP to Powys CC dated 24 January 2001, with schedule of road works relating to plan W5583/SA-CW/001.
- Document 54 (1) Letter dated 5 March 2001 from West Coast Energy concerning amendments to sub-station (also see Plan J).
(2) Letter from West Coast Energy dated 12 March 2001 to clarify agreed position at Cumulative Inquiry to amend sub-station application to 'outline.'
- Document 55 Correspondence concerning ownership of part of track leading to proposed sub-station site put in by Dr A Cresswell.
- Document 56 List of draft conditions as revised on 15.02.01 and further modified on 08.03.01, with Inspector's notes appended to revised list.
- Document 57 (1) Copy of draft s.106 Agreement concerning land management, grazing controls and ecological constraint areas.
(2) Copy of executed Agreement dated 8 March 2001 to contribute to the cost of a public information facility within Carno community.

Document 58 NAW letter of 31 August 1999 and NWP response of 10 May 2000 re additional environmental information.

PLANS

- Plan A Figures from Volume 4 of Environmental Statement:
Figure 1 - Site location.
Figure 2 - Original application areas and site layout.
Figure 3 - Site access and grid connection routes.
Figure 4 - Typical turbine details.
Figure 5 - Turbine base details.
Figure 6b – Sub-station plan and elevations.
Figure 7 - Site track design and cable layout.
Figure 8 - Landscape designations and character.
Figure 9 - Topography.
Figure 10 – Viewpoint locations 1 – 17 (see Photo 2).
Figures 11a and 11b – Cumulative wind farm visibility.
Figure 12 – Visibility of existing wind farms.
Figure 13 – Combined visibility of existing wind farms.
Figure 14 – Visibility of Cwm Llwyd at hub height.
Figure 15 – Visibility of Cwm Llwyd at blade tip height.
Figure 16 – Cumulative visual impact within Cwm Llwyd visual envelope.
Figure 19 – Habitat map.
Figure 20 – Hydrological features.
Figure 21 – Ecology designated areas.
Figure 22 – Archaeological sites.
Figure 23 – Noise evaluation properties.
Figure 24 – Rights of Way.
- Plan B Amended layout plan Figure 2B submitted by NWP to the inquiry, including access tracks and existing rights of way (see Doc. 29).
- Plan C Trannon Moor Ornithological Survey 1995, 1997 and 1999 showing curlew territories.
- Plan D Local Plan Special Landscape Areas (PCC13).
- Plan E Community Council boundaries (PCC11).
- Plan F Common land around Cwm Llwyd site (CCW map 1).
- Plan G Extract from definitive rights of way map (PCC).
- Plan H CAT turbine tip height visibility at 20 km ZVI (NWP. KFH3/9).
- Plan I Carno turbine tip height visibility at 20 km ZVI (NWP. KFH3/10).
- Plan J Amended sub-station plans put in with NWP letter of 05.03.01 (see Doc. 54).
- Plan K Amended sub-station access route plan attached to West Coast energy letter

of 13.12.00 (see Doc. 16).

- Plan L Other land in control of NWP outside application area.
- Plan M Plan accompanying Land Management Agreement [*see Doc. 57(1)*].
- Plan N ZVIs and Figures put in on behalf of CCW (*see Doc. 32*):
1. Number of turbines visible.
 - 2 – 5. Visibility at 15 km radius at top of rotor arc, nacelle, bottom of rotor arc, and ground level (+ 1m).
 6. Visibility at 10km radius.
 7. Visibility at 7km radius.
 8. Land over 300m and common land.
 9. Land over 300m and common land visible from CL at 15km radius.
 10. Visibility at turbine 5.
 11. Visibility of CL from road network.

PHOTOGRAPHS AND VISUALISATIONS

- Photo 1 Typical overhead line and sub-station (ES Figure 6a).
- Photo 2 Viewpoints 1 – 17 (ES Figures 17a – 17q).
1. Existing and predicted views at Garreg Hir (north, south, east & west).
 2. A470 Carno.
 3. A470 Talerddig.
 4. Cefn Coch.
 5. Glyndwr's Way.
 6. B4835 Llanfair Caereinion.
 7. Cemmaes Wind Farm.
 8. Llandinam Wind Farm.
 9. B4569 Llanidloes.
 10. Clatter.
 11. Llyn Mawr.
 12. Carno – Cefn Coch road.
 13. Carno – Cefn Coch road.
 14. Carreg-y-Big (Fig. 17n i).
 15. Glyndwr's Way.
 16. A495 Glascoed.
 17. Llyn Hir.
- Photo 3 Comparison of NWP proposals 1994 – 98 at viewpoints 1, 2, 12, 13, and 14 (Figs. 18a – 18e).
- Photo 4 Added viewpoints 18, 19 and 20 (NWP. KFH3/11) to assess viewpoints referred as GS18, 19 and 20 in Mr Sinclair/CPRW proof.
- Photo 5 Images used in CUM visual presentation to the Inquiry (Sheets 1 –9).
1. Carno – Cefn Coch.
 2. Carno – Cefn Coch, approaching Rhyd.

3. Carno – Cefn Coch, approaching top of Rhyd.
4. Views to west and north-west from edge of site.
5. Views south towards Shropshire.
6. Views from Tanyfoel and Carreg-y-Big junction.
7. Carno – Cefn Coch road. View north from VP 12 and to the east of that point.
8. Further views to north.
9. Panorama to north. South-west view showing Trannon Moor with and without turbines at Carno wind farm.

Photo 6

Carno – Cwm Llwyd public road access : NWP video of trial run for construction vehicles on 29.11.00.

NC APPENDIX A - APPEARANCES

For the Appellants (Powergen Renewables Ltd)

Mr D Goodman, Solicitor of Hammonds Suddards Edge, Solicitors,
2 Park Lane, Leeds LS3 1ES.

He called:

Mr R C Edwards Project Manager and Director of Dulas Ltd.

Mr P Wood DipTP MRTPI Partner, Peacock & Smith, Planning Consultants.

Mr J Stevenson MA MPhil PGDip MRTPI MLI ARICS MIMgt FRGS Partner, JSA Environmental & Landscape
Planning Consultants.

Dr S Percival BSc PhD MIEEM Senior Lecturer in Environmental Biology,
University of Sunderland.

Mr M D Hayes BSc MIOA Partner, Hayes McKenzie, Acoustics Consultants.

For Powys County Council (Local Planning Authority)

Mr C Edwards, Solicitor Shire Solicitor with Powys County Council.

He called:

Mr G Lee BSc (Econ)(Hons) DipEM MRTPI FRGS Head of Development Control (Montgomeryshire
Division).

For Countryside Council for Wales

Mr B Smith, Solicitor of Browne Jacobson, Solicitors, 44 Castle Gate,
Nottingham NG1 7BJ.

He called:

Mr R G Woods BSc CCW Area Officer (East Wales).

For Campaign for the Protection of Rural Wales

Mr G A Sinclair Principal of Environmental Information Services
and Consultant to CPRW.

He gave evidence himself and called:

Mr M Williams BA Director of CPRW.

For Conservation of Upland Montgomeryshire

Mrs J Macdonnell Vice Chair of CUM.

She gave evidence herself and called:

Dr A Cresswell BSc(Hons) PhD PGCE Secretary of CUM.

Mrs A Davies Chair of CUM.

Interested persons

Mr R Coombs The Lodge, Pandy, Llanbryn-mair.

Mrs L Palshis Fronlwyd Cottage, Bontdolgadfan.

Mr W Marden Yr Efail, Pandy, Llanbryn-mair.

Mrs M Jones Rhyd y Meirch, Llanbryn-mair.

Mrs S Jones MA VetMB MRCVS Clegyrnant, Llanbryn-mair.

Mrs F Margolis Barlings Barn, Llanbryn-mair.

Ms M Rees Dol Einion, Tal-y-llyn, Tywyn, Gwynedd.

Mrs G White Pandy Cottage, Llanbryn-mair.

Mrs H P Jones (rep. by Mrs M Jones) Adwydeg, Llanbryn-mair.

Mrs J Macdonnell Blaen Tafolog, Mallwyd.

Mrs H Hughes (rep. by Mrs S Jones) Bodhyfryd, Pandy, Llanbryn-mair.

Mr E Jones Blaen-y-cwm, Llanbryn-mair.

Mr A Burton Tyn-yr-eithin, Carno.

NC APPENDIX B – DOCUMENTS, PLANS, PHOTOGRAPHS & VISUALISATIONS

DOCUMENTS

- Document 1 Powergen Nant Carfan Environmental Statement (CD1 and CD2) :
- Volume 1 – Non-Technical Summary (May 1999)
 - Volume 2 – Planning Appraisal (May 1999)
 - Volume 3 – Environmental Statement main text (May 1999)
 - Volume 4 – Figures and visualisations (May 1999)
 - Volume 5 – Addendum (March 2000)
- Document 2 File of Core Documents CD3 – CD14 (pages 4 – 528):
- CD3 – Report to Montgomeryshire Planning Committee (1 December 2000)
 - CD4 – Extracts from 1996 Powys Structure Plan
 - CD5 – Extracts from deposit 1995 Montgomeryshire Local Plan and 1997 Modifications.
 - CD6 – Montgomeryshire Landscape Assessment
 - CD7 – Planning Guidance (Wales): Planning Policy
 - CD8 – TAN 5 : Nature Conservation & Planning
 - CD9 – TAN 8 : Renewable Energy
 - CD10 – TAN11 : Noise
 - CD11 – CM2426 Sustainable Development: The UK Strategy – extracts
 - CD12 – CM1200 This Common Inheritance: Britain’s Environmental Strategy - extracts
 - CD13 – Energy Paper No. 62: New and renewable energy. Future prospects in the UK – extracts
 - CD14 – ETSU report (R-97): The assessment and rating of noise from wind farms – extracts.
- Document 3 Inquiry attendance lists.
- Document 4
- (i) Appendices A – D of proof of Mr G Lee (Powys CC).
 - (ii) Council report to Planning Committee of 5 January 2001.
 - (iii) Minutes of Planning Committee meeting of 5 January 2001.
 - (iv) Council inquiry briefing note on Landscape Assessment; SLA; Local Plan; and UDP.
- Document 5 List of objecting residents (with plan) in Pandy area put in by Council.
- Document 6 Dulas Ltd document : “The proposed Nant Carfan wind farm – site selection process.”
- Document 7 Appendices of proof of Mr Wood (Powergen) PW1 – PW6 comprising extracts from:
- PW1 – Cemmaes A & B decisions.
 - PW2 – Powys Structure Plan.
 - PW3 – Deposit Montgomeryshire Local Plan.
 - PW4 – Powys UDP strategy report.

PW5 – Kirby Moor appeal decision.
PW6 – Kirkheaton and Lowca appeal decisions.

- Document 8 Appendices of supplementary proof of Mr Wood PW(S)1 – PW(S)5 comprising:
PW(S)1 – Extracts from ETSU report on “cumulative effects.”
PW(S)2 – Correspondence on WTB policy on tourism and wind farms.
PW(S)3 – Correspondence on background to WTB policy.
PW(S)4 – Leaflets on walks on Glyndwr’s Way and around Machynlleth.
PW(S)5 – CPAT report on Archaeology in response to CUM evidence.
- Document 9 Appendices II – VI of proof of Mr Edwards (Powergen) comprising:
(II) Chart of cumulative gas emission savings from Powergen wind farms.
(III) “Energy – The Changing Climate” (RCEP report summary).
(IV) Address by Rt Hon Michael Meacher MP to BWEA 1999.
- Document 10 Response of Edwards/Powergen to CPRW re NFFO 4 contracts.
- Document 11 Response of Edwards/Powergen to CPRW re Nant Carfan emission savings.
- Document 12 Response to cross-examination of Mr Edwards by CPRW on Government targets; turbine operating periods; and electricity and energy consumption.
- Document 13 JSA Appendix 1 – Landscape and visual effects terminology.
- Document 14 JSA Appendix 2 – Guidelines: Landscape and Visual Impact Assessment.
- Document 15 Stevenson (Powergen) Table 1 of proof : Summary of agreed viewpoints.
- Document 16 Powergen/DJ Construction – Appraisal of Nant Carfan access route.
- Document 17 JSA Appendix 8 – Bundle of correspondence with CUM, CCW, SNPA (including National Park Committee report), and CPRW.
- Document 18 JSA Appendix 9 – Note on use of 50mm focal distance lens.
- Document 19 JSA Appendix 14 – Local properties viewpoint data (with location plan).
- Document 20 JSA Supplementary proof appendices comprising:
Appendix 1 and 2 – CCW Glyndwr’s Way leaflets.
Appendix 3 – ETSU report on public attitude research in Mid-Wales (with note on research method put in separately).
Appendix 4 – Extract from Hedgecoe’s Photographers Handbook.
Appendix 5 – Extract from appeal decision at St Breock Downs, Cornwall.
- Document 21 Extracts put in by Powergen and CCW from 1990 Countryside Commission assessment “The Cambrian Mountains Landscape.”
- Document 22 Letter from Trunk Road Agency approving A458 access dated 15.12.00.
- Document 23 (1) CCW/NCL1 – CCW policy statement.

- (2) CCW/NCL2 – Energy : Policies and Perspectives for the Welsh Countryside (pages 39-43) – CCW.
 - (3) CCW/NCL3 – The Assessment of the Visual Impact of Wind Turbines at the Nant Carfan Development.
- Document 24 Correspondence with PINS and original proof from the RSPB, including letter of 5 February 2001 withdrawing objection to the application.
- Document 25 Tables 1, 2, 4, 5 and 6 from proof of Dr Percival (Powergen):
1. Breeding birds.
 2. Additional bird populations.
 4. Phase 1 habitats and NVC communities.
 5. Land take from habitats.
 6. Areas within habitat enhancement conservation areas.
- Document 26 Appendices of proof of Dr Percival (Powergen) comprising:
- (1) Habitat enhancement plan.
 - (2) Llanbrynmair Moors SSSI – Cors Mynydd Tal-y-Glannau and Cors Bwlch Trosol descriptions and map.
 - (3) Letter to Powys CC from CCW dated 28 April 2000.
 - (4) Article on Birds and Wind Turbines in British Wildlife (10/2000).
- Document 27 Written evidence of R Matthews (CCW) on Ornithology.
- Document 28
- (1) CCW/NO1 – Note on status of Skylark.
 - (2) CCW/NO2 – Article on upland waders census method from Bird Study (1993. 40).
- Document 29 CCW/NO4 – UK Biodiversity Action Plans (Vol VI) : Black Grouse.
- Document 30 CCW/NO5 – Skylark population estimates (BTO News 218/1998).
- Document 31 CCW/NC/W1 – UK Biodiversity Action Plans : Blanket Bog.
- Document 32 CCW/NC/W2 – Description of Cors Mynydd Tal-y-Glannau and Cors Bwlch Trosol SSSIs with different detail to that in Doc. 26(2).
- Document 33 Leaflets of the revised route of the designated Glyndwr’s Way National Trail.
- Document 34 Extract from Local Plan Inspector’s Report re policy ENV3.
- Document 35 CPRW policies ON1 – 3 and OFF1 – 6 concerning on and off shore wind power proposals.
- Document 36
- (1) Proof of G Sinclair/CPRW, p18 re development plan policies.
 - (2) CPRW estimate of NC emissions savings (Sinclair proof page 7).
 - (3) Sensitivity rankings (G Sinclair proof).
- Document 37 The Economic Value of Walking in Rural Wales – P Midmore.
- Document 38 Appendices A – D of proof of G Sinclair (CPRW) comprising:

- (A) Wind power station construction in UK.
 - (B) Visual impact of turbines in relation to distance.
 - (C) Visual impact gradings – verbal to numerical.
 - (D) Holderness Inquiry report extracts.
 - (E) Comments on VP photographs (Sinclair proof p. 16).
- Document 39 Appendices A – K of noise proof of M Hayes/Powergen comprising:
- (A) Time histories/regression analysis.
 - (B) Planning policy guidance.
 - (C) Correspondence on noise with Powys CC.
 - (D) Turbine noise specification.
 - (E) Summary of noise prediction algorithm.
 - (F) Noise impact assessment for wind farm.
 - (G) Plans of noise survey locations.
 - (H) Letters of objection on noise.
 - (I) Possible noise conditions.
 - (J) Noise level table.
 - (K) Glossary of terms.
- Document 40 (A) Table 1 of M Hayes proof – daytime worst case noise impact .
(B) Other background noise measurements (M Hayes suppl. proof).
- Document 41 Appendices S1 – S7 of M Hayes supplementary proof comprising:
- S1 – Traffic noise (tranquil areas criteria).
 - S2 – Regression analysis (95% confidence level).
 - S3 – Noise assessment with 95% confidence limit.
 - S4 – Wind speed and direction analysis.
 - S5 – Rebuttal submitted to Cemmaes B inquiry.
 - S6 – Prediction algorithm and noise data from Cemmaes and Nant Carfan.
 - S7 – Combined noise levels from existing and permitted wind farms and Nant Carfan.
- Document 42 CUM Appendix 1 on need for the wind farm comprising a bundle of various source documents from press articles and the Internet.
- Document 43 CUM Appendix 2 on Noise with comments of M A Kenyon of MARTEC Environmental Engineering.
- Document 44 CUM Appendix 3 (items A – E and G – I) on visual and landscape assessment comprising:
- (A) Britain's filthiest factories.
 - (B) Llanbrynmair walk extract from Radical Outlook.
 - (C) 5km ZVI radius.
 - (D) Montgomeryshire plateaux areas.
 - (E) National Assembly letter of 27 April 2000.
 - (G) Letter of objection dated 23 November 2000 from the Ramblers Association.
 - (H) Letters from WTB.
 - (I) (i) Letter from Wales Holidays.
(ii) Letter from Nantlais, Dole re noise effect.

- Document 45 (1) Note on Llyn coch-hwyad put in by CUM.
(2) Passage from 'Four Fields, Five Gates' – A Hill (1954).
- Document 46 CUM comments on Mr Wood's supplementary proof and PW(S)5.
- Document 47 (i) CPRW/3 comments on viewpoints 1 – 15 and landscape/visual effects.
(ii) Note to G Sinclair from P Marfleet re offshore lagoons and comparison of output of tidal lagoons with wind turbines in Wales.
- Document 48 A. Damage & annoyance by noise (Cresswell/CUM proof sect. 2.3).
B. CUM comments on M Hayes supplementary noise proof.
- Document 49 Internet search notes and letter from Cefn Pennant, Llanbrynmair put in by Mrs L Palshis re pony trekking and riding.
- Document 50 Enclosures attached to written representations of Mr B Laister:
(1) Visual path area.
(2) Visual path elevation.
(3) Wireframe impression.
(4) Plans of air flows.
(5) O/H line corridor from ES.
- Document 51 Copies of written representations concerning Human Rights.
- Document 52 Letter concerning Osprey sightings from Mrs M Graham.
- Document 53 Table of output comparison and BWEA factsheet 19 put in by Mr R Coombs.
- Document 54 Copy of section 106 Land Management Agreement for Nant Carfan between Landowners, Powergen and Powys CC dated 27 February 2001.
- Document 55 Draft list of conditions as discussed at the inquiry.

PLANS

- Plan A General site location (ES Vol 4, Fig 1).
- Plan B Designated Areas (ES Vol 4, Fig 2).
- Plan C (1) Proposed layout for 35 turbines in 1994.
(2) General 1:25000 site area and land ownerships (ES Vol 4, Fig 3).
- Plan D (1) Detailed site layout (pre-amendment) and Design Constraints (ES Vol 4, Fig 4).
(2) Fig NC1 put in at PIM showing changes in turbine locations between May 1999 application and March 2000 application.
- Plan E Typical turbine (ES Vol 4, Fig 5).

Plan F	Turbine base details (ES Vol 4, Fig 6).
Plan G	(1) Revised site layout plan dated 5.2.01 accepted as amendment to application. (2) General site layout amended to exclude alternative access route. (3) A458(T) junction layout (Drg 56288/OPT/01 rev. p1). (4) Control room building (ES Vol 4, Fig 7). <i>[Note: These plans G(1) – (4) comprise the amended application considered at the inquiry]</i>
Plan H	Landscape Character (ES Vol 4, Fig 8).
Plan I	Habitat Plan (ES Vol 4, Fig 12).
Plan J	Sites of archaeological interest (ES Vol 4, Fig 13).
Plan K	Rights of way and noise monitoring locations (ES Vol 4, Fig 14).
Plan L	ES Figures for Zone of Visual Influence: Fig 9.1 Nant Carfan to tip height. Fig 9.2 Nant Carfan to hub height. Fig 9.3 Cemmaes A & B to tip height. Fig 9.4 Carno to tip height. Fig 9.5 Mynydd Clogau to tip height. Fig 9.6 Cwm Llwyd to tip height.
Plan M	Powergen viewpoint locations 1 – 15 (ES Vol 4, Fig 10) [also see Doc 15].
Plan N	CCW plan of Common land in area around Nant Carfan.
Plan O	Approved route of Glyndwr’s Way National Trail, sections 11 and 12.
Plan P	Local Area with SLA, ESA and SNP boundaries (JSA Appendix 4).
Plan Q	Western Uplands Special Landscape Area (JSA Appendix 5).
Plan R	Wind farms, holiday homes and viewpoints <i>in Photo 4</i> (CUM Appendix F).
Plan S	Nant Carfan site in relation to lakes and water courses (CUM).
Plan T	UK electricity supply system 1999 (put in by Mr Coombs).
Plan U	Tranquil areas of England 1960s and 1990s; Britain night pollution (Cresswell/CUM. Figs 1 – 3).
Plan V	ZVI to tip height for Nant Carfan at 5km (JSA Appendix 11).
Plan W	(1) ZVI to hub height for Nant Carfan at 20 km (JSA App. 10) (2) ZVI to tip height for Nant Carfan at 20km (JSA App. 10).
Plan X	Cambrian Mountains ESA (JSA Appendix 6).
Plan Y	CCW/NCL 3, Appendix 1.4 (A3 plots) : Figures 1 – 11 and Appendix 1.3 comprising: Fig 1 - Visibility and radii of view.

- Fig 2 - Top of rotor arc at 15km.
- Fig 3 - Nacelle at 15km.
- Fig 4 - Bottom of rotor arc at 15km.
- Fig 5 - Ground level + 1m at 15km.
- Fig 6 - Top of rotor arc at 10km.
- Fig 7 - Top of rotor arc at 7km.
- Fig 8 - Land cover above 300m and common land.
- Fig 9 - Land above 300m and common visible from Nant Carfan at 15km.
- Fig 10 - Visibility of turbine 15 at 15km.
- Fig 11 - Visibility of Nant Carfan from road network.
- App. 1.3 Visibility of Nant Carfan, 20km radius, existing wind farms and selected settlements.

PHOTOGRAPHS AND VISUALISATIONS

- Photo 1 ES Vol. 4/JSA Figures 11.1 – 11.15 comprising:
- Fig 11.1 Glyndwr's Way.
 - Fig 11.2 B4518, Bryn-coch.
 - Fig 11.3 Above Glyndwr's Way.
 - Fig 11.4 Nant Hir.
 - Fig 11.5 Foel.
 - Fig 11.6 Garreg Hir.
 - Fig 11.7 Carno.
 - Fig 11.8 Ffryd Fawr.
 - Fig 11.9 Pen yr Allt Uchaf.
 - Fig 11.10 Road between Carno and Llanfair Caereinion.
 - Fig 11.11 Wynford Vaughan Thomas Memorial.
 - Fig 11.12 Carno (Trannon) wind farm.
 - Fig 11.13 South of Llanbrynmair near Pennant.
 - Fig 11.14 Foel Dugoed.
 - Fig 11.15 Foel Dinas (near Craig Maesglase/Bwlch Siglen).
- Photo 2 JSA Appendix 12 Photomontages and wireframes comprising:
- Figures 1 – 15 at the same locations as Figures 11.1 – 11.15 in Photo 1, but amended to take account of turbine 10 relocation. In addition, there are the following Figures 16 – 23 also including turbine 10 relocation.
- Figure 16 Dol-Fawr.
 - Figure 17 Ty Neuadd.
 - Figure 18 Hendre Fach.
 - Figure 19 Blaen Tafalog.
 - Figure 20 Blaen y cwm.
 - Figure 21 Nant Carfan Farm.
 - Figure 22 Clegyrnant.
 - Figure 23 Rhyd y Meirch.
- Photo 3 JSA Appendix 13 Additional wireframes comprising:
- Figure 1 Cader Idris – Penygadair (with replacement Figure).
 - Figure 2 Aran Fawddy (with replacement Figure).
 - Figure 3 Waun Oer (with replacement Figure).
 - Figure 4 Near Pen-cae-du.

- Figure 5 Centre of Pandy.
- Figure 6 South of Pandy.
- Figure 7 Pwll-melyn.
- Figure 8 Bryn-aire-uchaf.

Photo 4

Photographs and montages put in by CUM (Figures 1 – 28) with *descriptive index of VPs shown on Plan R* comprising:

- Figs 1, 2, 3 - Views from Nant Carfan site.
- Fig 4 Cwm Tafolog.
- Fig 5 Site from Mynydd Cemmaes bridleway.
- Fig 6 Plynlimon range from the site.
- Fig 7 Cwm Tafolog, Foel Dugoed and Aran Fawddwy.
- Fig 8 View from Clegyrnant and Fig 8a Powergen wireline.
- Fig 9 View north from Wynford Vaughan Thomas Memorial seat.
- Fig 10 View south-west from Clegyrnant towards Plynlimon.
- Fig 11 View of Cwm Tafolog/Mynydd Llest Fach.
- Fig 12 Snowdonia from common adjacent to site.
- Fig 13 Mynydd Llest Fach from common.
- Fig 14 Carno (Trannon) wind farm from 7km.
- Fig 15 Carno wind farm from proposed Cwm Llwyd site.
- Fig 16 Pandy and Mynydd Cemmaes from Glyndwr's Way.
- Fig 17 Towards Nant Crfan from Nant Hir bridleway.
- Fig 18 Towards common land adjacent Nant Carfan from Nant Hir.
- Fig 19 Towards Nant Carfan from Mynydd Cemmaes footpath.
- Fig 20 Towards Snowdonia from common adjacent the site.
- Fig 21 a) – d) Turbines at Liverpool docks.
- Fig 22 View towards Nant Carfan farmhouse from Pandy road.
- Fig 23 Northern end of Pandy road.
- Figs 24 and 26 Panoramic views of Rhiw Saeson ridge and wind farm site from Clegyrnant; and the site and Pandy valley from Glyndwr's Way.
- Fig 25 View of site from Nant Hir farmhouse.
- Fig 27 Viewpoint position for cover of Doc. 44(B).
- Fig 28 ES Figure 11.3 to illustrate that it is derived from same viewpoint as Fig 16.

Photo 5

Seat at viewpoint 24 (CUM App. K)

CE APPENDIX A – APPEARANCES

APPEARANCES

For the Mynydd Clogau Applicant (Renewable Energy Systems)

Mr M Challis, Solicitor	of Norton Rose, Solicitors, Kempson House, Camomile Street, London EC3A 7AN.
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He called:

Mr D I Stewart MA DipTP MRTPI	Principal of David Stewart Associates, Planning Consultants.
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Mr G Soltys BSc(Hons) DipLA MIHort MLI	Partner in Soltys:Brewster, Environmental Consultants.
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For the Cwm Llwyd Applicant (National Wind Power)

Mr M Trinick, Solicitor	Partner, Bond Pearce Solicitors, Ballard House, West Hoe Road, Plymouth PL1 3AE.
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He called:

Mr P Hinson CEng MICE	Development Manager, NWP.
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Mr S B Salt BSc(Hons) DipTP MRTPI FIQ	Planning Manager, West Coast Energy.
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Ms K F Hawkins BSc(Hons) BLD MLI	Director, E4 Environmental Consultancy.
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For the Nant Carfan Appellant (Powergen Renewables)

Mr D Goodman, Solicitor	of Hammonds Suddards Edge, Solicitors, 2 Park Lane, Leeds LS3 1ES.
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He called:

Mr P Wood DipTP MRTPI	Partner, Peacock & Smith, Planning Consultants.
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Mr J Stevenson MA MPhil PGDip MRTPI MLI ARICS MIMgt FRGS	Partner, JSA Environmental & Landscape Planning Consultants.
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For Powys County Council

Mr C Edwards, Solicitor	Shire Solicitor with the County Council.
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He called:

Ms L J Guthrie MA(Hons) MPhil MLI Principal Landscape Architect, Enviros
Aspinwall Consultancy.

For Countryside Council for Wales

Mr B Smith, Solicitor of Browne Jacobson, Solicitors, 44 Castle
Gate, Nottingham NG1 7BJ.

He called:

Mr R G Woods BSc CCW Area Officer (East Wales).

Mr P A Minto MRTPI Planning Officer, CCW.

Mr R I S Edwards DipLA MLI FRSA Partner, Donaldson Edwards, Landscape
Architects.

Dr D Miller BSc PhD Researcher, Macaulay Land Use Research
Institute.

For Campaign for the Protection of Rural Wales

Mr G A Sinclair Principal of Environment Information
Services and Consultant to CPRW.

He gave evidence himself and called:

Mr M Williams BA Director of CPRW.

For Conservation of Upland Montgomeryshire

Dr L R Mytton BSc(Hons) PhD Llanerch, Carno.

Mr L Smith DipAD FRSA Gwerfyda, Llanllugan.

Interested Persons

Mr W Marden, Yr Efail, Pandy, Llanbryn-mair.

Mrs J Hill, Y Rhos, Carmel, Cefn Coch (*also representing Mr & Mrs J Woolon, Plas Helyg,
Carmel and Mr & Mrs J Nichols, Ty Uchaf, Carmel*).

Mrs A Davies, Carreg y Big, Cefn Coch.

Dr A Cresswell, Llanerch, Carno.

Mr P Brachi MA DipTP, Ffryd Wen, Carno.

CE APPENDIX B – DOCUMENTS, PLANS, PHOTOGRAPHS & VISUALISATIONS

DOCUMENTS

- Document 1 Inquiry attendance lists.
- Document 2 Appendices A – F of Mr D Stewart (RES) containing wind farm appeal cases, with location plan.
- Document 3 Extract of proof of Mr G Soltys (RES) (pages 10 – 17) on landscape and visual assessment.
- Document 4 Appendices 1 – 4 of proof of Mr G Soltys: Tables of viewpoints and reference map.
- Document 5 Appendices 1 – 4 of proof of Mr P Hinson (NWP):
1. Wind farms in Wales as at January 2001.
 2. Accessible resource for electricity.
 3. CEWT report on cumulative effects (ETSU 2000) (*Also App. 8 of Mr P Wood*).
 4. Public attitudes to wind farms in Scotland (SECRU RF No 93. 2000).
- Document 6 Extract from proof of Ms K Hawkins (NWP) (pages 3 – 10) setting out scope and approach of evidence and method of landscape and visual assessment.
- Document 7 A. Tables 1 – 7 from proof of Ms K Hawkins (NWP).
B. Linear route receptors (A & B roads) (Hawkins proof).
- Document 8 Appendices 1 – 3 and 5 and 6 of proof of Ms K Hawkins (NWP):
1. References.
 2. Visibility analysis from ES viewpoints.
 3. Viewpoint analysis.
 5. Visibility analysis from local residential properties.
 6. Summary of local residential survey.
- Document 9 Appendix KFH6/9 – Ms Hawkins and Ms Guthrie Figures cross-references.
- Document 10 A. Extract from proof of Mr J Stevenson (Powergen) (pages 13 – 15) on assessment of cumulative effects.
B. Appendices 1 – 5 and 7 of Mr J Stevenson (Powergen) on ES viewpoint assessments:
1. Nant Carfan from which Cwm Llwyd and/or M. Clogau visible.
 2. Cwm Llwyd and M. Clogau from which Nant Carfan visible.
 3. Nant Carfan ES viewpoints.
 4. Cwm Llwyd ES viewpoints.
 5. M. Clogau ES viewpoints (with App. 7 plan attached).
- Document 11 Powys wind farms visibility summary; Areas of visibility calculated; and overlapping plus new areas of visual influence (Tables 3.1, 3.2 and 3.3 of Mr Stevenson supplementary proof).

- Document 12 Appendices 2 – 4 of supplementary proof of Mr Stevenson:
App. 2 – Viewpoints with significant effects registered by Ms Guthrie.
App. 3 – Extract from Cemmaes wind farm proof of R Edwards.
App. 4 – Spring 2001 Newsletter re landscape capacity (Countryside Agency).
- Document 13 A. Enviros Aspinwall report on cumulative impact to Powys CC (December 2000).
B. Report by Shire Planning Officer to Planning Committee on 5 January 2001 (Powergen Appendix PW7).
C. Approved Minutes of Montgomeryshire Planning Committee for 5 January 2001.
- Document 14 A. Appendix 2 of proof of Ms L Guthrie (Powys CC) – Methodology (with Table 2.1: Assessment of effects).
B. Landscape character areas (Guthrie Table 5.1).
C. List of Viewpoints, with numbers (Guthrie Table 8.1).
- Document 15 A. ZVI Analysis of Powys CC (Guthrie proof Chap. 7) (*see Plan A, Figs. 5 – 11*).
B. Explanatory note by Ms Guthrie on her Chapter 7, Figure 11, and total areas of visibility.
D. List of references (Guthrie App. 4).
- Document 16 Guthrie refined Tables 3.1 and 3.2 of *Doc. 13A* and Summary of significant cumulative landscape and visual effects for numbered viewpoints in *Doc. 17*.
- Document 17 Summary of Powys CC viewpoint assessment (Guthrie App. 3).
- Document 18 Appendix 1 of Dr D Miller (CCW) : An Assessment of Cumulative Visual Impact [*with errata corrected in accordance with pages and Tables submitted at inquiry. Figures at larger scale in Plan B*].
- Document 19 Extract from Cambrian Mountains Landscape Assessment (CCW C1/RGW/1).
- Document 20 Quotations in proof of Mr R Edwards (CCW) from (a) ‘The Cambrian Mountains Landscape Study’, (b) MLA, and (c) MLP Inspector’s Report.
- Document 21 A. Consultation response of CCW dated 21 November 2000 to M2000/846 re 17 turbine proposal at Cemmaes.
B. Section 7 of Mr R Woods’s (CCW) proof on plateau landscape character.
- Document 22 Cumbria County Council SPG on wind energy in Cumbria.
- Document 23 Tranquil Areas Wales (Report to CCW by ASH – August 1997, with plan).
- Document 24 How green are our turbine valleys ? (Times article 7 March 2001).
- Document 25 Extract from ‘The Story of Montgomeryshire’ – J. Owen (pages 50/51).
- Document 26 Submission by Countryside Agency to the Environmental Audit Committee.

- Document 27 Agreed statement by applicants on ZVI and viewpoints (with data sheets).
- Document 28 Letters of objection from M F Jennings handed in at inquiry.
- Document 29 Letter of objection from W A Evans handed in at inquiry.
- Document 30 Letter of objection from M Bates AM and L Opik MP dated 8 February 2001 and PINS acknowledgement.
- Document 31 Appendices of Mr M Williams (CPRW):
(A) Forecast windpower capacity.
(B) Energy projects in S W Montgomeryshire.
(C) Western Mail editorial 27 Oct. 1998.
(D) Countryside Agency submission to HC Env. Committee in Jan. 2001.
(E) Poems from proof of Mr Williams, pages 5 and 7.
- Document 32 Appendices A – C of Mr G Sinclair (CPRW):
A. Letter from CPRW to PINS dated 18 August 2000.
B. Letter from CCW to PINS dated 23 August 2000.
C. Wind energy projects in Mid-Wales at January 2001.
- Document 33 CPRW Rural Wales magazine (Spring 2001).
- Document 34 Environment: The Next Steps (Speech by the Prime Minister on 6 March 2001).
- Document 35 A. Extract from proof of Mr L Smith (pages 5 – 8) on cumulative impact.
B. Appendices 1 – 3 of proof of Mr L Smith (CUM):
1. The visual spectrum.
2. Totality and contrast.
3. Audio, visual and mental perspectives.
- Document 36 Visualisations and notes used by Dr L Mytton in CUM powerpoint presentation to the inquiry:
1. On tranquillity and noise.
2. On archaeology.
3. On landscape.
- Document 37 Documents put in by Mrs A Davies of Carreg y Big, Cefn Coch on CEWT report:
A. Statement.
B. CEWT report on public attitude research: summary and full extract as published.
C. Extract from transcript.
- Document 38 Correspondence and submissions on Human Rights.
- Document 39 A. Quotations from books referred to by Mr L Smith/CUM (Sect 3 of proof).
B. Note on ZVI 1km square analysis (*Plan A Fig. 11*) put in by Mr L Smith.
- Document 40 1. Extract from proof of Mr P Hinson (NWP) on renewable capacity for Wales.
2. Extract from proof of Mr P Hinson on Box 2.2 of CEWT report and cumulative aspects of CL wind farm.

Document 41 Note on CROW Act 2000 put in by CCW at cumulative inquiry session.

PLANS

- Plan A Powys County Council (Ms L Guthrie) Figures:
Figure 1 Locations of the wind farms.
Figure 2 Topography.
Figure 3 Landscape character and designations.
Figure 4 Number of visible existing wind farms.
Figure 5 Tip ZVI of baseline + Nant Carfan.
Figure 6 + Cwm Llwyd.
Figure 7 + Mynydd Clogau.
Figure 8 + Nant Carfan + Cwm Llwyd.
Figure 9 + Nant Carfan + Mynydd Clogau.
Figure 10 + Cwm Llwyd + Mynydd Clogau.
Figure 11 + Nant Carfan + Cwm Llwyd + M. Clogau.
Figure 12 ZVI of horizontal angle subtended by existing wind farms.
Figure 13 ZVI of horizontal angle subtended by baseline + Nant Carfan + Cwm Llwyd + Mynydd Clogau.
- Plan B CCW (Dr Miller) Figures:
Figure 1b - Visibility of wind farms.
Figure 2 - Visibility of existing & proposed turbines (15km).
Figure 3 - Visibility of existing & proposed turbines (7km).
Figure 4 (amended) - Combination of visibility (15km).
Figure 5 - Distribution of views of blades at 7km.
Figure 6(a) - Visibility of existing and proposed turbines from common land and open vegetation above 300m.
6(b) - Visibility of proposed turbines from common land and open vegetation above 300m.
6(c) - Visibility of existing turbines from common land and open vegetation above 300m.
Figure 7(a) - Visibility of existing turbines from road network.
7(b) - Visibility of proposed turbines from road network.
- Plan C Appendix 5 extracts of Mr G Soltys (RES):
Figure 1 Existing and proposed wind farms within 30km of M. Clogau.
Figure 2 ZVI for existing and permitted wind farms and M. Clogau.
Figure 3 ZVI for 30km blade tips.
Figure 4 ZVI for 30km nacelles.
Figure 5 Selected viewpoints locations.
- Plan D Maps in Appendices of Mr R Woods (CCW):
1. Trannon plateau improvements/forestry.
1A. Trannon plateau – existing turbines.
2. Mynydd yr Hendre improvements/forestry.
2A. Mynydd yr Hendre – proposed turbines.
3. Cemmaes/Llanbrynmair plateau improvements/forestry.
3A. Cemmaes/Llanbrynmair plateau – proposed turbines.

- Plan E CUM plan of existing/proposed windfarms scaled within M25 orbital motorway (Mytton page 30).
- Plan F CUM plan of landscape scaled within M25 orbital motorway and showing three dimensional relief between Caersws and Cemmaes (Mytton, page 32).
- Plan G CUM landscape relief map showing existing/proposed turbines (Mytton, page 33).
- Plan H Local properties in CL and MC areas (Ms K Hawkins/App. 4).

PHOTOGRAPHS AND VISUALISATIONS

- Photo 1 Appendix 5 extracts of Mr G Soltys (RES):
Figure 6a VP NC6/CL1 Garreg Hir looking east.
Figure 6b VP NC6/CL1 Garreg Hir looking west.
Figure 7 VP MC14 bridleway north of telecom masts.
Figure 8 VP MC Addendum view C Bridleway 26 (eastern end).
- Photo 2 NWP wireframes of local residential properties *listed in Doc. 8, App. 6* (Ms K Hawkins/App. 7).
- Photo 3 Cwm Llwyd viewpoint 17 (revised) (Powergen/JSA suppl. App. 1).
- Photo 4 J Stevenson (Powergen) Appendix 6 – wireframes:
Figure 1 – Nant Carfan wind farm: VP1 Cwm Llwyd.
Figure 2 – Nant Carfan wind farm: VP3 Cwm Llwyd.
Figure 3 – Nant Carfan wind farm: VP8 Cwm Llwyd.
Figure 4 – Nant Carfan wind farm: VP15 Cwm Llwyd.
Figure 5 – Nant Carfan wind farm: VP 4 M. Clogau.
Figure 6 – Nant Carfan wind farm: VP 8 M. Clogau.
Figure 7 – Nant Carfan wind farm: VP 14 M. Clogau.
- Photo 5 Photographic extracts from powerpoint presentation by Dr L Mytton (CUM) on landscape impact – pages 17 – 25 and 27 – 29.