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Dear Mr Packer

Planning Application Reference: M2007 0931

Introduction

Conservation of Upland Powys was formed by people living within the county, our members range from families that have farmed the same land for generations to those who have more recently chosen the tranquillity, beauty and quality of mid-Wales life for their home. Our diverse membership, from all ages and all walks of life, shares the commitment to preserve the unspoilt uplands of Powys from inappropriate development for the benefit and enjoyment of everyone. We have inherited the timeless beauty of these landscapes from our forebears and we recognise our duty to hand these pristine landscapes and environments on to future generations in the same, or better condition as we received them. The proliferation of wind turbines is a serious current and long-term threat to upland wildlife, landscapes and the ways of life that they support. We base our statements and conclusions on real world evidence and find none to support the contention that wind farms will provide secure, reliable electricity or reduce carbon dioxide levels.

To begin we refer you to **The Economics of Ecosystems and Biodiversity (TEEB) study** which is a major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation, and to draw together expertise from the fields of science, economics and policy to enable practical actions moving forward.
<http://www.teebweb.org/>

“Humankind still has a lot to learn about the nature of Value and the value of Nature”

The access to information in the EIA is grossly inadequate and not in keeping with Equal Opportunities or Social Inclusion legislation.

CADEIRYDD CHAIRMAN

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The fragmentation of information throughout numerous volumes and chapters of the application makes the assimilation of information time consuming and arduous. We question whether the information provided by the developers complies with DDA regulations and whether it is reasonable to expect local people to pay to be able to study the information; or alternatively travel to the nearest large town to view the ES for a short period. This and the other similar applications do not comply with Equal Opportunities or Social Inclusion objectives identified by Westminster and The National Assembly For Wales. With the best will in the world it would be almost impossible for any member of the public to study the documents in the Powys County Council Offices; the documents are difficult to navigate. We also point out that in the hardcopy some pages are not numbered and in the DVD copy the index/contents page does not work electronically: such simple matters left undone, but an example of the standard of this piece of work.

We conclude from information assimilated so far that this application is disproportionate, causing severe degradation of the landscape and social and economic dislocation for only a marginal, or even illusory, benefit. The layout is in conflict with the area and even with other applications. The LANDMAP description of Esgair Cwm Owen Uplands uses positive adjectives (harmonious, attractive) in contrast to adjacent upland areas where wind farms are sited.

Wind farms are not carbon friendly

We point out at this stage, that wind farm applications are being received as a response to Government policy to reduce our carbon footprint. Wind farms are suggested as a way forward, but as BERR stated: "*it is unlikely that wind farm development will proceed should it not be proven to be carbon friendly.*"

(Ref: Personal communication BERR Ref: 08/0377 Julie Farrow Renewables Dept).

We calculate that current available figures conclude that during its lifetime, one wind turbine, on a peat site, will "save" 6,356 tonnes of carbon and "cost" somewhere between 27,213 and 40,773 tonnes of carbon; this figure, and the underlying calculations, are currently being scrutinized by BERR (DECC), the Carbon Trust and the WAG Sustainability Committee. To date they have been unable to disagree with these figures, and we still await further response.

National Governments have already made huge mistakes with biofuels. Failure to do a proper carbon equation on biofuels before they were developed has resulted in massive global carbon losses and worsening of the very situation they were intended to improve. We now know that in some cases biofuels generate more carbon than they save. Let us not make the same mistake with wind-generated power. A proper, fully costed carbon equation before proceeding with any development is essential. Furthermore we await responses from the WAG with respect to the carbon cost of highways upgrading necessary to transport turbine parts to the wind farm site and also from the National Grid with respect to the carbon cost of grid connection. These additional figures have yet to be included in the carbon cost of wind farms. We note that the Welsh Assembly Government encourages all farming enterprises to undertake whole life cycle carbon foot-printing; as wind farms are purported to be farming enterprises we expect this to be undertaken for all wind farm applications.



Wind farms do not improve security of energy supply

The cold weather of December/January 2009/10 illustrated this problem. When our electricity requirements were greatest, wind energy did not supply. With high pressure and a lack of wind only 0.2% of a possible 5% of the UK's energy was generated by wind turbines during this time. Jeremy Nicholson, director of the Energy Intensive Users Group (EIUG), gave warning that this could turn into a crisis when the UK is reliant on 6,400 turbines accounting for a quarter of all UK electricity demand over the next 10 years.

He said the shortfall in power generated by wind during cold snaps seriously undermined the Government's pledge to build nine major new wind 'super farms' by 2020.

"If we had this 30 gigawatts of wind power, it wouldn't have contributed anything of any significance this winter," he said. *"The current cold snap is a warning that our power generation and gas supplies are under strain and it is getting worse."*

What this means in practice is that as more wind farms come on line they require a greater proportion of back up by reliable generation; 90% according to E.ON Netz. E.ON said that it could take 50 gigawatts of renewable electricity generation to meet the EU target. But it would require up to 90% of this amount as back up from coal and gas plants to ensure supply when intermittent renewable supplies were not available. That would push Britain's installed power base from the existing 76 gigawatts to 120 gigawatts.

The EU directive on renewable energy, Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001, on the promotion of electricity produced from renewable energy sources in the internal electricity market (OJ 2001 L 283, p. 33) states (2) *"The promotion of electricity produced from renewable energy sources for reasons of security and diversification of energy supply, of environmental protection and of social and economic cohesion."*

It is apparent that this application cannot provide secure electricity supply when we look at the evidence gleaned so far: in Germany their 20,000MW of wind energy require 90% back-up from conventional sources; indeed Rupert Steele of Scottish Power/Iberdrola stated on 22.4.09 that the 30GW of wind proposed for the UK would require 25GW of back up. What source will this back up come from and where it will be sited?

It is clear that this application cannot offer either secure, reliable electricity supply, or contribute to a reduction in CO₂ emissions. It may give a few uninformed people a good feeling that as the turbines are so big, they must be achieving something; however, we have absolutely no evidence, from anywhere, that windfarms support or encourage social cohesion. Why a scheme that is about vast amounts of money for the few; a few crumbs of 'community grants' to the naïve; and degrades the homes and livelihoods of the majority in the locality, could ever be considered to be cohesive is completely beyond most reasonable people.

The cost, environmental degradation, noise disturbance, habitat loss which will accompany this wind farm development is not proportionate to the objective to be attained, ie energy security and carbon footprint reduction.

Article 3 of the directive provides that steps to increase use of electricity from renewable sources *"must be in proportion to the objective to be attained"*. This 'principle of proportionality' is an important principle of Community law which pervades the caselaw of the Court of Justice.

We contend that this wind farm proposal contravenes this basic principle.



Article 4 2 (d) “*promote the use of renewable energy sources in an effective way, and be simple and, at the same time, as efficient as possible, particularly in terms of cost*”. This application does not meet these criteria.

£700,000,000 per annum is currently added to electricity bills and used to support renewable energy. This has almost entirely been used to support the wind industry. “*The existing renewables subsidy is both wasteful and unjustifiably expensive, costing the consumer about £1 billion a year by 2010*” (House of Commons Public Accounts Committee 2005). Government renewable energy support policies ensure that we now pay between two and three times more for wind power than conventional electricity. Spending the same money on subsidising home energy conservation would give ordinary people the money and would also help them reduce their energy consumption and thus the CO₂ emitted in producing that energy.

Carbon accounting: The Welsh Assembly Government is now encouraging all farms in Wales to undertake whole life cycle carbon footprinting for produce; surely the same standard should be applied to wind farms not least of all because this is their very *raison d’etre!*

We seen no evidence that any such attempt has been made in this ES.

Wind turbine syndrome is a scientifically proven, medically substantiated complication for people living near wind farms.

“... Wind turbine noise, as experienced by many turbine neighbours, is easily within the decibel levels to disturb sleep. Effects of noise-induced sleep disturbance include fatigue, depressed mood or well-being, decreased performance, and increased use of sedatives or sleeping pills. Measured physiologic effects of noise during sleep are increased blood pressure and heart rate, changes in breathing pattern, and cardiac arrhythmias. Certain types of night-time noise are especially bothersome, the authors note, including those which combine noise with vibration, those with low-frequency components, and sources in environments with low background noise.¹¹ All three of these special considerations apply to industrial wind turbines in rural NY State. Children, the elderly, and people with preexisting illnesses, especially depression, are especially vulnerable to sleep disturbance.

“Noise has an adverse effect on performance over and above its effects on speech comprehension. The most strongly affected cognitive areas are reading, attention, problem solving, and memory. Children in school are adversely affected by noise, and it is the uncontrollability of noise, rather than its intensity, which is most critical. The effort to tune out the noise comes at the price of increased levels of stress hormones and elevation of resting blood pressure. The adverse effects are larger in children with lower school achievement.

“What is commonly referred to as noise ‘annoyance’ is in fact a range of negative emotions, documented in people exposed to community noise, including anger, disappointment, dissatisfaction, withdrawal, helplessness, depression, anxiety, distraction, agitation, and exhaustion. Numerous reports from neighbors of new industrial wind turbine installations document these symptoms. The percentage of highly annoyed people in a population starts to increase at 42 dB, and the percentage of moderately annoyed at 37 dB.”

(Ref: Health effects of wind turbine noise (3.2.06) Pierpont)

Peat on the site is a significant resource for climate change mitigation in its own right. By now, in the UN ‘Year of Biodiversity’ this should well accepted; where is the detail of the fieldwork done to measure the depth of the peat? Where is the data from hand held GPS with the peat areas plotted?



At Whinnash, similar to many sites in Wales, a carbon equation was drawn up by Dr Mike Hall of the Renewable Energy Foundation. Compared with many sites in Wales and Scotland, Whinnash (between the Lake District and Yorkshire Dales National Parks) has a shallow peat covering and patchy areas of blanket bog; the carbon payback time is calculated at 2.35 years; however we point out that this was site specific and did not undertake whole life cycle account of CO₂ cost / benefit. There appears to be no evidence of a carbon payback equation having been made in Environmental Statement for peat, despite the Scottish Government having made an algorithm to calculate this.

(Ref: The Scottish Government Calculating carbon savings from wind farms on Scottish peat lands – A New Approach <http://www.scotland.gov.uk/Publications/2008/06/25114657/9>)

There is no attempt to calculate the carbon equation with respect to peat in this application.

A full carbon equation should take account of the carbon cost of:

- Building and construction
- Grid connection
- Running a turbine
- Clean coal, gas, nuclear power stations running less efficiently, developing and maintaining the back up power stations
- Upgrading highways
- Peat displacement
- Forestry clearance
- Subsidy
- The result of power losses in transmission of electricity between wind farms and the National Grid
- The Capacity Credit, ie the percentage of wind generated energy which actually displaces conventionally generated energy

Habitats: Scientists have found that birds, including buzzards, golden plovers, curlews and red grouse, are abandoning countryside around wind farms because the turbines act as giant scarecrows, frightening them away. The impact is not huge now because there are still some areas without wind farms but researchers warn that, with hundreds more planned, plus an increase in the size of turbines, the effect could become much worse. *“We found evidence for localised reductions in bird breeding density around upland wind farms. Importantly, for the first time, we have quantified such effects across a wide range of species,”* said James Pearce-Higgins, an ecologist with the Royal Society for the Protection of Birds in Scotland. His research was conducted with scientists from Scottish Natural Heritage and the Scottish Government’s Environment Research Directorate. It is one of the first scientific analyses of how the wind farm construction programme might affect wildlife.

The UK has 259 onshore wind farms, of which 108 are in England, 91 in Scotland, 33 in Wales and 27 in Northern Ireland. Planning permission has been granted for a further 222 and there are plans for another 270 after that. In the study, Pearce-Higgins surveyed the populations of 12 bird species around a dozen upland wind farms in Scotland and northern England. These were compared with a similar number of control sites that had no turbines, but which had similar topography and vegetation. Upland areas were chosen because they have the strongest winds and so are preferred by wind-farm developers. They are also favoured, however, by some of Britain’s most vulnerable bird species.



Writing in the Journal of Applied Ecology, Pearce-Higgins and his colleagues said birds tended to stop nesting within half a mile of any turbine. Since the effect extends around each machine, up to two square miles could be affected by one turbine. Pearce-Higgins said: *“Our results highlight significant avoidance of otherwise apparently suitable habitat close to turbines in at least seven of the 12 species studied, with equivocal evidence for avoidance in a further two species.”*

The developers understate the significance of the impact on birds, particularly ground nesting birds.

Bats: Since 2004, when the 2,095 bat deaths reported at West Virginia’s Mountaineer Project sent alarms ringing, wind farm developers, scientists and conservationists have been working together to pinpoint and prevent fatalities. This summer, one such partnership, between TransAlta Wind and the University of Calgary, debunked one of the popular beliefs about bat deaths and will help steer future work in this area. TransAlta has about 189 MW of wind farms operating in southern Alberta and another 162 MW under construction. By analyzing specimens found on one of TransAlta’s farms, Robert Barclay, a biological sciences professor at the university, discovered that the vast majority of bats died not as a result of colliding into the turbines, but as a result of a sudden drop in air pressure in the airspace around the turbines – which destroys their lungs.

The results were staggering. Ninety percent of the bats found around TransAlta’s Summerview wind farm near Pincher Creek, Alberta, died from internal injuries to their respiratory systems.

Called barotraumas, this type of fatality is similar to a human condition called the bends – when divers’ lungs fill with fluid because they surface from a dive too quickly. Bats’ balloon-like lungs are made up of two-way airflows ending in thin, flexible sacs surrounded by capillaries. When outside pressure drops, the sacs can over expand, bursting the capillaries around them.

Study leader Erin Baerwald says the results show that bats – not birds – should be the top ecological concern for wind developers.

“Given that bats are more susceptible to barotrauma than birds and that bat fatalities at wind turbines far outnumber bird fatalities at most sites, wildlife fatalities at wind turbines are now a bat issue, not a bird issue,” Baerwald says. Because bats are mammals, their lungs are totally different from the more robust respiratory system of birds, which is designed to hold out in sudden drops in air pressure.

The developers have very little understanding of the impact of the wind farm upon bats; indeed the survey work was not completed when the application was submitted and the conclusions already reached.

Mrs E Hart AM made enquiries and has advised that wind turbine developers have no exemptions under the Wildlife and Countryside Act 1981. Where wind farms are proposed, their development should not contravene the protective measures that apply to Schedule 1 birds, Schedule 5 animals and Schedule 8 plants.

(Personal email 9.12.08 to Councillor Ioan Richard)



Effect on council tax bills: A family who say their home has been blighted by noise from a wind farm have won a 20% reduction in council tax because the house's value has dropped. Julian and Jane Davis moved into a house on Mr Davis' farm in 2001 and planned to extend the property. In 2006, eight 100m (328ft) wind turbines were put up 930m (3,051ft) from the house in Spalding. A council tax tribunal panel ruled the wind farm had reduced the value of the house and changed it from Band B to A. *"This has completely blighted our lives,"* said Mrs Davis. *"By September 2006 (three months after the turbines were installed), we were forced to sleep on people's floors just so we could get a night's sleep. By December we decided to rent another house so we would have somewhere to sleep."*

Effect on house prices: An extensive survey of its members by Royal Institute of Chartered Surveyors RICS (2004) concluded that *"60% of the sample suggested that wind farms decrease the value of residential properties where the development is within view..."*. This is now reflected in the fact that a council tax discount may be given for *"Property affected by the proximity of an electricity generating wind turbine"*. (Hansard, May 13, 2008).

Tan 8 Annex D study was finalised in 16/01/2006. It describes areas to be considered for development into wind farms. A reasonable person would have expected construction routes and grid connections to have been identified to enable the proposed undertakings to be practical.

It is a generally held planning principle that there is no 'right to a view' that would protect private views from development that would adversely affect them. However, the public interest may legitimately come into play where a proposal would have such a severe adverse impact on the outlook from a property that it would make it a significantly less attractive place to live, and for future as well as current occupiers. Safeguarding living conditions can then become a legitimate and material planning consideration... Nor is the scale of harm to living conditions necessarily directly related in some utilitarian way to the number of properties concerned so that if relatively few properties are affected it can be concluded that the harm is acceptable.

Appeal Decision APP/M0933/A/09/2099304

CUP questions how Strategic Search Areas, the refined areas identified in the IDCG and the associated infrastructure and impact on highways have not appeared in local property searches undertaken by solicitors?

The planning authority is aware that there are very strong feelings regarding living anywhere near to a wind farm; a major factor for siting them away from areas of urbanisation. For most, buying their home is the biggest commitment that they will ever make. What steps has PCC undertaken over the past four years to ensure that these development areas were officially published due to their effect on quality of life and welfare? We accept that this would usually only apply to a full planning application; however we require this information, in light of the fact that *'development on this scale has never been seen before in Wales, or most of England'*.

Many properties in Powys have been purchased over the past years where 'previous knowledge' on the part of the Authorities as to the location of wind farm potential applications and likely construction routes would clearly have made a very significant and decisive difference to the purchase of the property. Evidence of this was presented at the previous Public Inquiry for this site. We also refer to informal conversations with potential property purchasers who have changed their property search from areas where there is possibility of wind farm development.



The 'Corporate Improvement Plan 2007-2010' for Powys County Council 'Vision Statement' describes how the Council will '*strive continuously to improve the quality of life for every Powys resident*' and that the Council wants to ensure the people of Powys enjoy a '*real sense of well being*'. We have now reached 2010 and await evidence of the vision becoming a reality for the hundreds of families whose lives have been seriously affected by the existing and proposed wind farms and associated works.

The above issues consider Wildlife and Countryside Act 1981, Health and safety, economic and social resilience and cohesion. None of these matters are satisfactorily addressed in the ES.

Yours sincerely,

Alison Davies, Chairman
Carreg y Bîg, Cefn Coch
Welshpool, Powys, SY21 0AW



CUP Response to Developer's Statement

CUP presents further points in the order they are in the ES; some of these may have been dealt with, and our comments are made in light of the exceptionally weak Environmental Statement that we understand has been supplemented by a series of communications. CUP questions the legitimacy of using the planning process as a 'developmental tool' for an application surely this is unfair, inefficient and completely at odds with planning procedure. An application should be submitted when it is ready for consideration and considered on the information therein. Local democracy has been sold short by allowing substantial information to be added and / or changed from that in the original document.

Below we provide detailed comments on the information supplied by the developers. We make no comment on the huge number of grammatical and spelling errors but have found that considerable guesswork is required to ensure that the intended meaning is gleaned; there is a world of difference between 'formally' and 'formerly', or 'effect' and 'affect'! CUP requests responses to the questions we pose:

PA 1.2.2 Tirgwynt has been established by a group of 13 farmers local to Carno and Cefn Coch... Not only will there be a benefit package for the community, but because the farmers themselves will also be beneficiaries, so shall the communities in which they live, shop and pass their leisure time benefit.

There are 32 properties shown on the maps as being within 1.5Km of the application site and of these only 5 are inhabited by the any of the 13 farmers; in fact to describe them as a 'group of local farmers', when 3 of the landowners live in excess of 15km from the application is misleading.

PA 1.4.3 Awel Newydd has been developing this proposal for some years now and, being members of the community, it has been in their interest to be open and 'up front' about their intentions.

The landowners have certainly been involved for some years; this application bears very close similarities to the Mynydd yr Hendre submission of the early 1990's when Manweb Generation Holdings put in an application with Kenetech; following the demise of MGH and Kenetech the application was revived by National Windpower and this application was refused in line with the conclusion of the Planning Inspectors' Report (2 PIs) some nine years ago. Despite yet another name change this is practically same site, with the same issues that led to recommendation to refuse.

We refer you to our previous communication 8.11.07.

PA 1.4.5 Refers to the questionnaires. We would be pleased to know whether the Planning Authority has evidence of who responded (the developers will have this information to enable them to communicate, and as a record of the event)? We see it as particularly important to know what proportion of those who responded have a pecuniary interest in wind farms or are related to those with such interests.

We see this as a very surprising result as we have been approached and are supported by such a large proportion of local civil society.



PA 2.2.2 The wind turbines have been positioned to capture the maximum available energy within defined environmental and technical constraints. This is achieved through the use of wind flow modelling software, wind speed data and many years of wind farm design experience. Constraints have been determined by visual, noise, ecological, archaeological, engineering and other consultations and assessments undertaken as part of the planning and design process.

We note that various revisions have taken place – have there been further changes/ revisions of which we should be aware, since the original submission? How much confidence are we to have that these positions are final, and should they change when will the noise assessments and ZVIs be revised in line with the changes?

The implication is that the siting of turbines, roads etc has undergone robust consideration prior to submission; however, evidence shows this not to be the case.

PA 2.3.3 ... When the wind speed sensors of a turbine determine there is a sufficient wind speed for operation, ...the control system of the turbine will feather the turbine blades to capture a minimum amount of wind energy and then apply the mechanical brakes. This process will stop the rotation of the rotor and shut down the turbine. When the wind speed drops below the maximum limit, control systems will signal the turbine to start up again. The turbine control system is programmed to measure a sustainable wind condition before starting a turbine to prevent undue start-up and shut down of the turbine...

What power is used to undertake these processes? Where does it come from? Does this require a secure, reliable source of power or will an intermittent, variable source suffice?

PA 2.3.4 ... The turbines are designed to work within a climatic range of minus 20 to plus 40 degrees centigrade and would be fitted with preheating and de-icing systems to prevent the accumulation of ice.

Electricity is required in the day-to-day maintenance of the wind farm; this is sourced from the National Grid, when the wind farm is not generating.

Construction issues

PA & ES 1.1.4, 4.2.1, 4.6.14

Stone

The issue of stone sourcing is important; the ES for Tirgwynt gives a choice between stone from borrow pits or outsourced. Whilst lorry movements are important for impact on traffic systems, this is not the whole story.

However the stone is sourced it has an environmental impact, stone extraction has a carbon cost through the emissions of the plant and machinery used. The extraction emissions should be the largely the same regardless of source. The choice of stone source shifts the environmental impact of stone extraction from an industrial site to an unspoilt site. However, the emissions from plant and machinery are not confined to CO₂ all diesel engines emit other pollutants, local extraction will further increase on site pollution, the measure of this is not given in the ES. The impact of quarrying is not provided to weigh the option, would blasting be required? What impact on pristine habitat will this have?



The use of borrow pits is permanent, the stone will not be put back, the extraction of 82,000 tonnes of stone must have an environmental impact, stone sourcing is not a detached planning issue.

Concrete

The use of ready mixed concrete for substations and turbine bases creates a 'time to use' issue, necessitating local supply. Whilst HGV movements are given, their environmental impact is not given in terms of carbon cost and emissions. Ready mixed concrete has a carbon cost at source. There are limited options for the supply of the high spec concrete required, again a range of travel distance should be supplied and this would generate a carbon cost.

On site emissions, use of plant and machinery.

The on site plant and machinery includes 850 and 500 tonne cranes. Such cranes do not run on fresh air. There is no mention of the emissions from plant and machinery. Furthermore, there would be a need for delivery and storage of fuel for plant and machinery, what amount of other emissions (e.g. particulates)?

CUP contends that without this information the Planning Authority cannot make an informed decision on the acceptability of this proposal.

Transport

The Capita Symonds report October 2008, Powys Wind Farms Access Routes study states that:

“significant delay and disruption to other road users will result when these deliveries take place as the components take up most of the available road width for a significant proportion of the rural highway network.”

This will impact on many issues that have not been addressed in the ES and are of concern to local people namely:

1. What provisions for emergency services will be in place with respect to ambulance, fire and police access?
2. How will local businesses be compensated when customers and deliveries are inevitably delayed.
3. Will there be windows of time during holidays, weekends, nights, market days, school runs when people can expect to get to their destinations unhindered?
4. At what intervals will full technical surveys of all buildings and other structures along the route be carried out? We require initial baseline data and then knowledge of the time and activity intervals between further surveys.

PA 3.4.1 Along with the recreational use of the area it must be noted that the farm business at Carreg y Bîg requires access to and from the property at all times, for themselves and any person or vehicle with whom they wish to have connection.

PA 3.4.2 It is worth observing that no member of the public has ever been injured by wind turbines.

It would certainly be worth mentioning, if it was true! Regrettably many people have been injured on wind farm sites for example the 131st record we have of an accident connected with a wind farm was: 09/10/2001 when a BBC film crew member was airlifted to a Cardiff hospital after being hit by part of a wind turbine at the Brithdir Mawr eco-commune near Newport. The man, a sound recorder, was working on a series of



educational programmes called 'Made in Wales'. The turbine was being dismantled for inspection after the blades had stopped turning. The cameraman and the sound recorder were both under the turbine as it was lowered. The entire head of the turbine fell and hit the sound recorder on the back. The incident has been blamed on a sheared drive shaft. The injured man was taken to Withybush Hospital under police escort, and was later confirmed to have spinal injuries. In June 2007, it was confirmed that the man is now wheelchair bound. He was awarded damages from the BBC. This is just one accident; a full record to Dec 2009 is in the appendix.

No other moving machinery, certainly none that is suspended 400 feet above the ground with blade tips travelling at over 100 mph is allowed to remain unguarded while people of all ages are free to walk unprotected beneath while it is in operation. Residents may suffer other effects as detailed previously. CUP requires evidence that the planning authority has done 'all that is reasonably practicable' to protect these people. Potential legal repercussions can be avoided by undertaking independent, suitable and sufficient risk assessment.

The Management of Health and Safety at Work Regulations 1999 states in section 7; 'health and safety assistance':

(3) The employer shall ensure that the number of persons appointed under paragraph (1), the time available for them to fulfil their functions and the means at their disposal are adequate having regard to the size of his undertaking, the risks to which his employees are exposed and the distribution of those risks throughout the under taking.

The PCC and WAG must provide sufficient time and resources to complete this work.

PA 3.4.3 To ensure the safety of members of the public during the construction of the wind farm, appropriate access control measures would be taken along with the implementation of statutory health and safety procedures for construction sites. In the interests of ensuring safety as practicably possible, via the placement of onsite notices, visiting members of the public would be advised to limit their level of movement within the bounds of the onsite access tracks. In addition, signs would also provide details of emergency contacts. This information would also be provided to the local police station and the electricity company.

This is a matter of great concern; previously we are informed that wind farms are benign and yet access onto the site is clearly dangerous.

What confidence can the residents and local farming business have, that Powys County Council is addressing its responsibility to protect civil society from avoidable risk?

PA 3.10.2 We note that Awel Newydd has a policy to encourage the use of local contractors for construction, operation and maintenance work wherever possible. We request a copy of this policy.

PA 3.10.3 We point out that 'up to 100 personnel' could be 5 part-timers!

PA 3.10.4. Despite the best attempts of the wind industry to entice visitors to their developments an inescapable fact is that the Delabole visitor centre closed some years ago due to lack of visitors. Paying groups of people to visit, providing 'educational' trips for councillors all increases 'visitor' numbers; so it remains essential that as many councillors, school children etc are dragged or enticed to visit a wind farm. At events to inform local people of the latest proposal near them, residents are offered a trip to visit



another wind farm – these people are immediately added to the ‘visitor’ figures that are presented every time the public interest in wind farms is questioned.

PA 3.10.9 There is thus no conclusive evidence that wind farms, and the proposal at Tirgwynt in particular, will have a negative effect on tourism in the area, rather it will have a neutral or positive effect.

This statement is extraordinary! The proposal will patently have a negative effect, the question to be addressed by the planning authority is: ‘How negative?’
To suggest that the proposal will have a positive effect on anything other than the bank balance of the developers, and to a lesser extent the 13 farmers, is incredible.

PA 3.10.10 In reality the majority of people have no opinion, just as the majority don’t bother to vote. The planning system is such that there is a presumption in favour of development so unless one feels strongly enough to object one is hardly likely to bother to voice an opinion; unless of course one has a pecuniary interest.

PA 3.10.11 61% may find it acceptable to *live 5km from a wind farm*; this application shows 33 properties within 1.5km!
We are aware of complaints due to noise from the recently commissioned wind farm at Carno and question how many of those are from people within 5km of the turbines.

PA 3.10.14 CUP is concerned about the discussion of community benefit within the consideration of a planning application and request clarification of the weighting given to the discussion, by the Planning Officers and by the Planning Committee, we also request some evidence of how this matter is evaluated.

PA 3.11.8 There is much evidence of people leaving their properties due to wind farms and we include some of this in our appendix; however, this evidence is often difficult to obtain as any payouts by developers generally include a confidentiality clause.

PA 4.2.8 As well as tackling climate change, the Government’s other main energy goal is security of energy supply.

This is exactly the point that CUP has been making for many years! The two questions:

- a) will wind farms help prevent climate change?
 - b) will wind farms provide secure reliable electricity?
- a) We refer you to the appendices; we have looked for ‘real world’ evidence and cannot find any indication that wind farms are significantly ameliorating climate; indeed we find much evidence to the contrary.
 - b) Again we refer you to the appendices where we provide evidence from nationally and internationally known generating and distribution companies that state clearly that wind power does not provide secure reliable electricity.
 - c) Of course the third point should be the cost, but this has been omitted, we therefore enclose information on the cost of the current renewables policy to civil society.

PA 4.4.1 Its aim is to establish the degree to which the landscape character of the site and surrounding area is able to accommodate change without significant effects on its character or overall change of the landscape character type. It is then a matter for the planning decision maker to weigh these impacts against the scale of environmental benefits that the scheme would generate.



We refer you to the statement made in the Planning Inspectors' Report dated 23rd May 2002, "...my overall conclusion is that these benefits (energy, pollution, economy and farming families) are outweighed by the adverse effects in respect of the wind farm's wider impact on the character and visual enjoyment of the site, its setting in the wider countryside. In particular, I find the proposal would have an unacceptable impact on a scenic route, rights of way and viewpoints. ...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."

We also refer you to statements by S White (Arrup White) "what you are creating here (IDCG in response to TAN8) is a wind farm landscape; development on this scale has not been seen before in Wales – or most of England". Jeremy Patterson stated Powys will have a wind farm landscape and can become the wind farm capital of Europe. To any reasonable person it is clear that the area would undergo significant change and there would be significant effects upon the landscape character and type. As is supported by: 4.4.3 All twenty-two turbines are located within the LANDMAP Visual and Sensory (VS) Aspect Area 733 (Esgair Cwmowen Uplands). The character of the landscape in this unit would be significantly changed within an area up to 4.5km from the nearest turbine.

It is apparent from fig 8b that this proposal sites WTGs 1,2,3,7,8,16 on blanket bog. It seems extraordinary that the developers even consider this to be acceptable enough to submit the application to the planning authority.

Is it entirely cynical of us to see this as yet another ploy to gain 'wiggle room' for the application? Initially submit something with issues, so that when the developers comply with some of the Authority's demands they can be seen as being cooperative, rather than what this actually demonstrates – a badly planned application on a site that has already been rejected.

Fig 10 shows 32 dwellings and Fig15 shows 31 within (both have omitted at least one property) within 1.5km of the site.

Of these properties only five are lived in by landowners who hope to benefit from this application; all of the other 28 properties and at least 60 residents will suffer impacts on their health and well being, and on their businesses as well as the reduction in value of their greatest investment – their homes.

Fig13b shows that all of the area is SLA

Fig 14a WTGs 1,2,3 & 8 all in CROW access land

Fig 17h the key is wrong – viewpoints should be red

PA 4.4.4 Snowdonia National Park, which lies at a distance of 12.5km from the nearest turbine, and the proposed development would not significantly affect the special characteristics or purposes of this national designation. ...There would also not be a significant effect on the purposes of the Western Uplands Special Landscape Area...

It should be noted that Fig 12 – 'Visual and Sensory Aspect Areas' is shocking, even to those of us who have reviewed dozens of these applications; it shows a large area where there would be a high level of visual impact; in contrast to other maps it shows only the area within the 10km boundary, not identifying 15km radius – is this because part of the national park would then be shown as suffering significant impact from the proposal?



CUP's view is that ZVI for the 20 km area should also be considered. We know that the Cefn Croes wind farm can be seen clearly from the Tirgwynt project site and therefore find any suggestion that the proposal will only be an intrusion up to 10km to be spurious.

We draw attention the Planning Authority's legal obligation to protect the countryside (Countryside Act 1968)

PA 4.5.3 The statement does not include Carreg y Bîg where noise monitoring had not been carried out for this application, and does not take into account current work and court cases that demonstrate the inadequacy of the ETSU guidelines. It is the legal responsibility of the local authority to consider the welfare of the residents of Powys in all its activities and decisions.

PA 4.5.7 There are likely to be direct impacts on only six out of the seventy-four identified sites. The overall significance of the impact on these six sites is judged to be relatively low owing to the small number over a large area, and their being of no more than local interest, with the exception of Cefn Brith barrow which is unscheduled but of national interest.

PA 4.5.8 Seven statutorily designated archaeological or historic sites lie within a one kilometre zone of the application site boundary, all SAMS. The overall significance of the indirect visual impact on these SAMS is judged to be moderate to high.

It should be taken into account that in September 2009 the Minister for Heritage and Culture emphasised the importance of embracing our unique heritage and taking every opportunity to increase its economic value to tourism. This requires sensitivity and 'sense of place', not just the noting of sites to be preserved as archive.

'We need to help people appreciate the historic environment and 'read the landscape' – not just the obvious elements such as castles and chapels, but also the pattern of quarries, ancient trackways, field systems and cairns. The rewards are not simply personal satisfaction for individuals. The historic environment creates our 'sense of place' and therefore our sense of shared belonging and of roots. Nurturing a living sense of what it is to be a citizen of Wales is a key priority for the Assembly Government, and citizenship cannot be a theoretical concept. It is about emotional ties and imagined community, as much with previous generations as with ones to come.'
(© Crown Copyright 2009. <http://wales.gov.uk/docs/drah/publications/090807heritageambitionenglish.pdf>)

PA 4.6.12 For each wind turbine foundation there will be two lorry loads of steel reinforcing, ducting and foundation bolts. The concrete (approximately 300 m3 per foundation) would be delivered from local batching plants in the "ready-mixed" form, each turbine base requiring approximately 50 lorry loads (1,050 in total). For technical reasons it will be necessary to pour all the concrete in each individual base on the same day.

What measures will the planning authority put in place to ensure that the business, residents and visitors to Carreg y Bîg that have the legal right to use the unclassified road and track unimpeded at any time? What impact is considered acceptable on local residents? Where is the concrete travelling from, and is there evidence that the supplier can meet the required quantity and timescale along with other contractual commitments? What measures are in place should more concrete be required, as was the case at Mynydd Clogau, where the turbine bases took far more than the stated 50 loads? Evidence that in principle agreements are in place with contractors to ensure that supply issues are addressed in full, should be provided at the planning stage.



ES 4.6.20 *The only entrance to the site will be via the Cefn Coch/Carno road, utilising an existing unclassified road. Whilst the existing visibility is good, there may need to be some amendment to this junction to facilitate large vehicles turning left or right into the site.*

This is the entrance to Carreg y Bîg and Bryn Gwyn, Carreg y Bîg is a farm business and access to and from the property is required at all hours; proposed works would impede this. Any changes to the single track unclassified road will irrevocably alter the character of the area as is now the case at the entrance to Mynydd Clogau, where the narrow, unmetalled track has been replaced with a wide metalled road, completely out of character with every other entrance to this single track lane.

PA 2.5.8 ... *A 1m wide gravel path would then be laid down around the tower base. The tracks would be suitably cambered to allow rainwater to be shed where gradients are present, lateral drains will intercept flow along the road. Where tracks cross existing drainage, these will be culverted to prevent any interference with land drainage.*

ES 4.5.11 & PA2.5.11 *The access tracks will be left in place after completion of the wind farm construction, as they will provide, where practicable:*

- *Access for wind farm site maintenance and repairs;*
- *Improved access for existing land users;*

The footprint for each WTG will therefore be 7m diameter. The 12.5km access tracks which will be 5m wide and suitable for road going vehicles and the drainage works will be left in place should the wind farm be dismantled or 'repowered'. We note that there is no information as to how wide the access tracks will be on bends, turning circles etc. there does not appear to be information regarding the hard-standing for cranes which should be adjacent to each turbine tower.

The total ground area with concrete, aggregate or other man made intrusions is not clear (the figure provided seems to exclude various factors).

This data is required to assess the medium to long term impact on drainage, flora, fauna etc.

PA 2.10.1 *A secure temporary storage compound will be required during the construction period. The proposed location of the compound will be located near to the end of the public highway, as shown on Figures 3a and 3b. The compound will be approximately 60 metres by 100 metres.*

Location of this compound is inappropriate; the map shows it on the road to Carreg y Bîg. Maintenance of the road and daily use is essential to allow normal living and farming activity to take place; this road is not suitable for four or more vehicles and will impinge on the lives of the residents and impact on their business, health and well-being.

PA 2.13.3 ... *the Project Ecologist would assist in the micro-siting of the turbine bases, access roads and cable runs. The Project Ecologist would also be involved with the production of the detailed construction method statement.*

We are to understand therefore, that much of the information in the ES is inaccurate and will most certainly change. We question the validity of this process; is the planning authority to consider an application where the siting of the subject of the application is most likely to change should permission be granted? Would this be considered reasonable for a domestic property, or for the building of a new supermarket? Any changes to siting of turbines or access tracks materially changes the noise impact and the visual impact thus it should be considered as a new application.



PA 2.15.1 Areas of the site will be reinstated where possible,... The temporary site office area will be cleared of hardcore and re-graded with soil to a natural profile and restored.

It seems that the developers will reinstate where convenient, not 'possible'; it is always possible, but not always convenient. The 'natural profile' would be no more than superficial works and not restoration

*PA 2.16.1 ...The upper sections of the foundations will be removed to a depth which would permit the continuation of **current** agricultural practices. Unless requested otherwise by the landowner, additional on-site access tracks will be removed and the affected area reinstated. The control building will also be removed from the site and the area reinstated as appropriate. All underground cables will be left in place.*

Regarding sustainability; it is of concern that turbine towers will only be removed to permit current agricultural practices, and what evidence has the Authority on the impact of the underground cabling left in the ground?

We also question leaving redundant cabling and other waste materials on site in light of legislation applying to landowners. What constitutes landfill and what level of waste material not belonging to the landowner can be left / dumped on the land if it does not belong to him and he is receiving financial benefit from the agreement?

Will landowners require waste licences to accept waste metal, concrete and aggregate left on or buried in their land? We see this as an important point to clarify at this stage, rather than in the average 9-12 years when the turbines are being dismantled.

ES 4.6.19 .. It is proposed that the track at Pont Pren-dano will remain in place for the duration of the wind farm, but will be reinstated in parallel with the decommissioning of the wind farm.

This road will therefore become permanent; presumably the developers require this road to remain so that every time the turbines break and need to be returned to the manufacturers (ref Cefn Croes – journeys to Poland for blade replacement <http://www.users.globalnet.co.uk/~hills/cc/recentnews-spring08.htm>) the AILs will need to use the same route. What stipulations are Powys Highways putting on the developers regarding these extra AIL journeys? This is of particular importance when taking into account the tremendous number of wind turbine proposals in the pipeline and the number of known breakdowns/accidents that occur in existing wind farms.

ES 4.11.1 The estimated on-site construction period for the development will be twelve months and this includes a programme to reinstate the working areas. Normal hours of operations for construction purposes will be between 07:00-19:00 Monday to Friday and 08:00-18:00 Saturday to prevent disturbance to local residents.

This will not be twelve consecutive months as access to the site during the ground nesting bird season (February to August inclusive), therefore works will have to be undertaken between September and January, some five months. It therefore seems that this development will take in excess of two years to construct, assuming that the snow in December and January 2009-10 is not repeated during the years of construction.

For the full construction period the whole site will be out of agricultural production. One cannot imagine how the developers think it possible to undertake the most major of construction works in a very quiet environment without causing disturbance; it is completely beyond us to see that this development will do anything other than cause major disturbance and disruption. We refer again to EU legislation requiring the local



authority to protect wildlife, the wellbeing of residents and the law regarding to disruption to existing business activities.

Issues surrounding transport during and after construction

CUP requires assurance that properties along the route and the welfare of any occupants of those properties will be protected from harm due to the actions of the wind farm traffic passing near their property. Powys County Council is the 'Determining Authority' for most planning applications is the most respected and prime advisor to the final decision maker; also PCC and WAG authorise the type of traffic that can travel along the roads of Powys, and are therefore responsible for the roads and have a legal obligation to ensure, so far as is reasonably practicable, the health and safety of those who travel along its routes and those who reside adjacent to it.

Page 1 section 12.8.3 of MIPPS 2005 Planning for Renewable Energy states that the UK Energy White Paper 2003 promotes *'health and safety and the full and proper protection of the local and global environment'*.

We are a part of *the local and global environment!* Suitable and sufficient independent risk assessments would indicate the likelihood of damage to innocent parties and what, if any, suitable actions can be taken to reduce the likelihood to an acceptable level. To our knowledge this does not appear to have been carried out, and we expect this to be done prior to consideration of the application.

We note that as employers conducting business undertakings, the planning authority has a duty of care not only to their employees but also to the general public.

We draw your attention to elements of the following legislation:

1. The Health and Safety at Work etc Act 1974.
2. The Management of Health and Safety at Work Regulations 1999
3. Article 8 of the European Court of Human Rights Act.

The Health and Safety at Work etc Act 1974 Part I makes provisions for protecting persons other than those at work from the risk to health or safety arising out of, or in connection with the activities of persons at work.

Section 3 of the Act places a *'duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected are not thereby exposed to risks to their health or safety.'*

Part (3) of this section clearly states that the employer *must 'give to persons (not being his employees) who may be affected by the way in which he conducts his undertaking' the prescribed information about aspects of the way in which he conducts his undertaking as might affect their health and safety.'*

CUP requires that Powys County Council and Welsh Assembly Government provides information of how each Authority will conduct their undertakings using the highways of Powys for permitted traffic and for potential wind farm construction traffic as might affect health and safety.

One of the relevant statutory provisions is Statutory Instrument 1999 No. 3242. The Management of Health and Safety at Work Regulations 1999 states:



- (3) (1) *Every employer shall make a suitable and sufficient assessment of –*
- (a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; and
 - (b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking,

for the purpose of identifying the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or under the relevant statutory provisions.

With reference to part (b) CUP requests that PCC and WAG provide evidence of a suitable and sufficient assessment of the risks arising out of the use of the highways adjacent to properties for the passage of existing traffic and potential wind farm construction traffic has been made and provide details as to the significant findings of the assessment.

Within the same regulation, under the heading 'Principles of Prevention to be Applied' it states:

"Where an employer implements any preventive and protective measures he shall do so on the basis of the principles specified in Schedule 1 to these regulations."

Schedule 1 describes 'General principles of Prevention' as 'avoiding risk', and replacing the dangerous by the non-dangerous or less dangerous.

What measures will be taken to avoid the risk of injury to the occupants of properties due to the permitted traffic and potential wind farm construction traffic using the roads adjacent to the properties?

Section 7 part (1) 'Health and Safety assistance' describes how an employer can *"appoint one or more competent persons to assist him in undertaking the measures he needs to take to comply with requirements and prohibitions imposed on him by or under the relevant statutory provisions"*.

CUP is concerned that PCC and WAG have asked the wind farm developers to assess the impact of the proposed wind farm developments on the environment and on the welfare of both highways and traffic; we draw your attention to: Part (5) of Statutory Instrument 1999 No. 3242 describes a '*competent person*' suitable for carrying out risk assessment on behalf of an employer as '*where he has sufficient training and experience or knowledge and other qualities to enable him properly to assist in undertaking the measures referred to in paragraph (1)*'.

CUP questions whether any of the wind farm developers have any of the attributes that '*sufficient training, experience and other qualities*' might suggest. Their 'traffic management plans' are already notorious in Mid Wales and the environmental statements consistently lack the objectivity required in planning guidance. CUP has no evidence that developers, or those in their pay, have the objectivity or ability to evaluate individual risks wisely. There is a clear conflict of interest by allowing the developers who are seeking permission from the planning authority to establish a business to conduct their own risk assessment where the outcome of such an assessment is then passed to the decision maker as part of the planning consent evaluation process.



Risk assessments must always be completed by a '*competent person*' who is not '*under duress*' or '*biased*' in any way so that they may be free to make a suitable and sufficient risk assessment.

Section 36 Offences due to the fault of other person states:

- (1) *Where the commission by any person of an offence under any of the relevant statutory provisions is due to the act or default of some other person, that other person shall be guilty of the offence, and a person may be charged with and convicted of the offence by virtue of this subsection whether or not proceedings are taken against the first mentioned person.*

This section ensures that if an employer authorises another person to do something that causes the risk of harm to another, the employer is held to account and does not avoid his obligations.

CUP contends that wind farm developers' pecuniary interest disqualifies them from taking any part or contracting a robust risk assessment; thus the responsibility for assessment of risk and any resulting legal charges brought would remain with the local authority and WAG.

The Health and Safety at Work etc Act Section 40 '*Onus of proving limits of what is practicable etc*' states the following:

'In any proceedings for an offence under any of the relevant statutory provisions consisting of a failure to comply with a duty or requirement to do something so far as is practicable or so far as is reasonably practicable, or to use the best means to do something, it shall be for the accused to prove (as the case may be) that it was not practicable or not reasonably practicable to do more than was in fact done to satisfy the duty or requirement, or that there was no better practicable means than was in fact used to satisfy the duty or requirement.'

Section 33 '*Provisions as to offences*' states:

- (1) *It is an offence for a person—*
 (a) *to fail to discharge a duty to which he is subject by virtue of sections 2 to 7;*

These issues need to be addressed by the relevant highway Authority for each road in order to avoid contravention according to section 33.

When considered in the context of Human Rights Act 1988 Article 8 - Right To Respect for Private and Family Life, The Court of Human Rights has established that the State has a dual responsibility in terms of the right to respect for family life. Article 8 is not just about ensuring that Public Authorities do not arbitrarily interfere with a person's private life. It also imposes positive obligations on those Authorities to take steps to provide the rights and privileges guaranteed by Article 8 and to protect people against the activities of other individuals that prevent the effective enjoyment of these rights.

Damage to property and increased noise is likely to result in harm to the occupants. This will reduce residents' effective enjoyment of a right to respect for home and private life, a violation of Article 8 of the European Court of Human Rights Act.



5.3.4 ...CCW agreed that the cumulative assessment should include the other operational wind farms in the study area, that the cumulative effects with Carno extension should be considered separately and presented in an appendix, and that it was not appropriate to consider cumulative effects with schemes not yet in the public domain.

The information in the appendix shows that CCW required that cumulative assessment should be provided (it had not been). We agree that a jumble of wind farms throughout mid Wales is visually confusing, but this only increases the importance of honest data capture and assessment.

5.3.5 The National Trust noted that they did not own any property within 20km of the proposed wind farm and so were unable to provide any particular knowledge of the study area.

The appendix shows that NT specifically asked the consultants to contact the Cambrian Mountains Society and provided contact details; the consultants chose not to contact this expert source. Why?

5.5.13 & 14 We note that much of the LANDMAP data has not been verified in the field; indeed there are considerable omissions; unlike the MLA which is complete and a thorough field assessment. LANDMAP will be of considerable use once it is complete as a national measurement framework, but to use the data as the only landscape evaluatory tool when it is incomplete is at the least unwise; however, even from the information available the assessment of most of the 10km study area in fig 12 is shown to be of high quality.

5.5.19 & 5.5.23 The majority of the site falls within the Western Uplands Special Landscape Area (SLA), ...As defined by Policy EC3 of the Structure Plan, the purpose of the SLA designation is to protect the landscape character of these areas by requiring development to be appropriate and sensitive to their high quality and capable of being satisfactorily integrated into the landscape.

To quote Institute of Welsh Affairs publication, 'Living with our Landscape' *"There is a case for designating the whole of rural Wales as a Protected Landscape or subject to a Protected Landscape regime or discipline."* Cannock Chase in Staffordshire is an AONB because of its value within a local context. The value of Western Uplands SLA is less local due to its altitude, land mass plateau and significant as a link between the Cambrian Mountains/ Snowdonia ranges and the softer, rolling more intimate countryside nearer to the English Border.

If that link is harmed further it damages the context in which all the locations sit, reduces important habitat, dislocates the breeding and feeding grounds of wildlife, and adversely impacts on 'sense of place' or 'hiraeth'; which is vital to community cohesion and personal and social well-being.

5.5.30-34 notes that there is potential for significant effects on the visual amenity of walkers on access land, walkers, cyclists and horse riders on the National Trail and long distance recreational and cycle routes.

There is an obligation that all public funding must be properly spent and that the capital works must maintained for 25 years. We acknowledge that it is perfectly possible to maintain little used routes etc but question the sustainability and morality of using public funds for projects that are then unable to achieve targets or attract their target market due to less strategic and sustainable development. Despite the best efforts of the developers it cannot be ignored, that people who want peace, solitude wildlife and



heritage will not be attracted to a 'wind farm landscape', although we accept that those who are taken to visit a wind farm will visit the area ...but how many times.

We ask those who are considering this application how many times they can imagine taking their family for a walk through a wind farm?

CUP requests details are provided of the amount of public money (Exchequer, European and Lottery/ HLF) that has been spent on developing and enhancing these routes. We also request the identified outputs and outcomes that were provided in the funding application and in the final reports.

5.7.2 – 18 The ZTVs are provided in Figures 17a – 17g. These have been generated with a computer-based intervisibility package, the Ordnance Survey Landform Panorama data (digital terrain data providing spot heights at 50m intervals) and a model of the wind farm.

Ordnance Survey has stopped supporting the Panorama data. Although elevation doesn't change much, techniques in mapping do, which with the OS supporting the product, would therefore have led to a better dataset overtime. *"The product is a frozen dataset, that is, it has not been updated since withdrawal and will not be in the future."*
<http://www.ordnancesurvey.co.uk/oswebsite/products/landformpanorama/>

We also point out that OS Panorama is based on information from the 1:50,000 scale Landranger series map. They are excellent for the purpose intended, but; *"It is best viewed between 1:20,000 and 1:50,000 scale"*. (OS 1:50,000 User Guide)

At 1:50,000 (although one can view the maps down to 1:20,000 scale, the data hasn't improved beyond 1:50,000) – 5mm on the map translates to 250m on the ground, therefore a 10m feature, eg a building, will only be 0.2mm on the map i.e. not visible. Based on these numbers, most buildings and other 'small' features are simply generalised representations of what is on the ground. With this in mind, all statements about effect on settlements etc need to be clarified about what can be/cannot be seen from ZVI.

We note that the level of (in)accuracy for this work is 50m. This is just about the cheapest technology available and hardly better than plotting on google! Is the planning authority prepared to accept such shoddy assessment? To provide any reasonable level of accuracy the developers should be prepared to invest at least in data capable of giving a realistic representation.

This actually means that the ZVT is less 'theory' than it is guesswork! In reality the visual impact is likely to be far greater than projected.

*"For high sensitivity receptors (eg residents with primary views from their properties in the direction of the site, walkers in the National Park and/or on Glyndwr's Way), in elevated locations, with open views of the turbines (ie not partially screened by topography and intervening vegetation) – **up to around 8km from the nearest turbine** (based on a moderate magnitude of change, such as noted at Viewpoint 9, which would give a major/moderate overall effect and, **therefore, a significant change in the view**). ..."*

We note that despite the previous justification and discussion surrounding people living in the area of wind farms; significant change is expected for those living up to 8km from the nearest turbine. How does this equate with justification that the changes will be acceptable for the residents within 1.5km, or 4.5km? Both of these radii have been discussed, and yet we are led to believe that the impact is likely to be similar. Surely 'significant impact' at 8km would equate to 'intolerable impact' at 1.5km or less.



What evaluation has the planning authority undertaken to assess the accuracy of the ZTVs and other presumptions from Cefn Croes, Mynydd Clogau and the recent wind farm built at Carno? CUP would be pleased to see the results of this work.

5.8.6 ...Pont Pren-dano ...where the temporary offsite access route crosses field boundaries.

CUP questions whether this use of the term 'temporary' can now be taken as accepted in planning terms? Can we assume that 'temporary development' can last up to 25 years; so domestic extensions, dwellings etc need only be considered as temporary?

5.8.12 The addition of a wind energy development into a landscape that is not currently characterised by wind turbines will usually have an appreciable effect on the character of at least a localised area within that landscape.

5.8.13 ...a significant change in landscape character is likely to occur where the Proposal will become one of the defining characteristics of the landscape, and/or where existing key characteristics will be lost or changed.

CUP notes the term 'localised' we refer to the previous section where we are informed that there is significant impact at around 8km from a wind turbine; thus we conclude that 'localised' means within 10km.

5.8.15 ...the spatial extent of that effect and the significance of the change in the character of the landscape unit as a whole will depend on the size of the landscape unit, the scale of the development and the extent of the actual zones of visibility.

This site is part of a large plateau – the Western Uplands – this is a large landscape with vistas over several counties; and thus viewed from a very wide area.

5.8.16Where particular views are an essential characteristic of a landscape unit, the proposal will become a defining characteristic of those views and those views are not already characterised by built development, then a significant change in character may result, ...

CUP contends that this is exactly the case on the Western Uplands; indeed the specific mention of the road from Cefn Coch to Carno as a scenic route and Garreg Hir as a panoramic viewpoint serve to emphasise this fact. Indeed this is clear from the statement:

5.8.25 The proposed development would be located within this large and elevated VS area, whose key characteristics are its exposed large scale, extensive upland landscape, with a patchwork vegetation cover of rough grazing, heather and bracken, irregular field patterns running with the topography and intermittent small blocks of coniferous and mixed woodland. Exposure and wind are dominant features with isolated more intimate areas with small irregular hedged fields in sheltered areas to the edge of the area. Extensive and long distance views from various locations towards surrounding upland areas and from limited locations into the Caersws River Bowl (VS area 865). LANDMAP gives this area a high scenic quality and a high overall evaluation.

2.8.2 The substation building will measure approximately 20 metres by 10 metres by 5.5 metres high and will be constructed and finished using materials that are in keeping with existing buildings in the ...accommodate all of the equipment necessary for automatic remote control and monitoring of the wind farm, together with the electrical switchgear, fault protection and metering equipment ...The adjacent compound will measure approximately 50 metres by 25 metres and will be surrounded by a secure fence.



5.8.20 ..The substation will be designed to appear similar to a typical contemporary farm buildings of the area ...

200sq.m. (66ft x 38ft & 18ft high). This is larger than many agricultural barns and perhaps should be viewed along with a statement by Entec (Mynydd Waun Fawr app), that the barns at Dolyfardyn are out of scale with their surroundings! This particularly large structure is proposed to be constructed of materials in keeping with existing buildings; what existing buildings? We then learn that the intention is to construct a huge zinc shed that would sit exposed on the hill. Where are these other buildings that this will appear similar to? However much the developers attempt to minimise its impact, the reality is that the only thing that will minimise the impact of the huge building are the proposed 16 x 380 ft turbines and associated infrastructure; any pretence that this will 'blend in', is a nonsense!

5.8.21 ...the turbines will introduce tall, moving structures which are not a characteristic of the current site landscape. As a result, the turbines will result in a significant change in the character of the site landscape.

5.8.22 ... it would be impossible to site a wind farm of almost any scale in the UK without significantly affecting the character of at least the site and immediate surroundings.

This is the point that CUP has continued to make over the years and surely an excellent starting point is to undertake a lifecycle carbon foot printing analysis of the whole proposal – this will include all associated activities up to this point and assess the likely accident/breakdown impacts based on the 3 most recent developments in the area – Cefn Croes, Mynydd Clogau and the recent wind farm near Carno. This method excludes Cemmaes A where there were numerous problems, accidents and breakdowns. CUP is unable to undertake a CO₂ equation of the proposal as the data provided is inaccurate and incomplete

5.8.26 The ZTV (Figure 17a) suggests that large parts of large unit of VS 733, up to 4.5km from the turbines, would have potential views of up to 22 turbines. The area is an exposed and relatively flat plateau top with limited vegetation, and most of this area would have open views of the turbines except where views are interrupted by coniferous blocks which occur north of the site. The Mynydd Clogau wind turbines are already located in this VS area and these turbines, plus the existing turbines of Carno A&B, currently form a key characteristic of many views across and out of this character area. The turbines would not be visible from limited parts of this VS area, particularly the area south of Mynydd Clogau and the northwestern slopes of Mynydd Waun Fawr and Mynydd Lluest-y-Graig. However, the analyses of Viewpoints 1, 2 and 6, located 0.9km – 4.4km to the south, northeast and east of the site, demonstrate that the proposed turbines would result in a significant change in views across at least parts of this area. **This is a landscape characterised by its views as well as its component features and the proposed turbines would result in a significant change in the character of this unit of VS 733.**

This statement hardly requires further comment, except to note that **turbines will be visible from most of this VS area.**

5.8.29 Therefore, as with any wind farm development, the proposed turbines would have a significant effect on the character of the landscape.



5.8.45 In summary, the proposed Tirgwynt wind turbines would result in a significant change to the character of the landscapes in the VS area in which they will be situated (VS 733 Esgair Cwmowen Uplands) up to 4.5km from the nearest proposed turbine, but would not result in a significant change to the character of the landscapes in any of the surrounding VS areas.

Having read the document (based on weak 50m software) we cannot understand how anyone other than the developers could have reached this conclusion; it is apparent, even from the inaccurate incomplete data supplied, that the wind farm would result in significant change to the surrounding VS areas.

CUP requires this high quality data to be provided, giving an honest picture.

5.8.52 We learn in the Appendix on page 194 and related pages:

Trannon Moorlands:

VS1: Has the information been verified in the field?

No ! (our exclamation mark!)

VS2: Does this area have a special or functional link with an adjacent area?

Yes

Strong visual link with Trannon Woodlands and created by the windfarm

VS4: Topographic Form? Disturbed

Disturbed through wind farm development

VS31: Principal management recommendation:

Maintain as existing

VS32: Guideline

Medium Term

Limit further wind farm development

VS51: Justification of overall evaluation

Upland moorland that suffers from some degradation due to the extensive forestry adjacent to the south and extensive wind farm development = Moderate.

The key guideline for managing the area is to limit further wind farm development.

Considering the attempt by the developers was to justify their application this seems to rather support our contention that even without visiting the site it is apparent to any reasonable person with a modicum of visual landscape training, that further wind farms are not appropriate... and despite this the planning authority granted permission for the more recent degradation of the area, which has caused such problems with noise and further visual pollution.

We note that the planning officer who recommended approval of the wind farm built in 2009 seems not to have taken into account the LANDMAP guidance and request information as to why this was disregarded.

Mynydd y Cemmaes

VS1: Has the information been verified in the field?

No

VS2: Does this area have a special or functional link with an adjacent area?

Yes

Provides a strong visual focus in the form of the extensive windfarm for the surrounding areas and partner to Mynydd Lluest Fach

VS14: Balance? Discordant



VS24: Perceptual and Other Sensory Qualities

Noisy

Wind turbines dependant on weather conditions...

Exposed

Remote

Other

In some weather conditions the wind turbines are oppressive... in their scale they can also be intrusive.

5.8.53 The Tirgwynt Wind Farm will be located in the Esgair Cwmowen Uplands (VS area 733, scenic quality = high, overall evaluation = high, with the justification being 'Good example of patchwork upland grazing that is characterised by the field patterns and land use emulating the topography', see Appendix 5.4). The proposed development would not affect the field patterns and land use and, on the basis of the evaluations of VS areas 179 and 413, in which operational wind farms are already located, there is no reason to suggest that the proposed development would affect the overall evaluation of this VS area in any future LANDMAP evaluation.

CUP sees the conclusion reached by the developers to be subjective. There is such a difference between the LANDMAP assessment and the paragraph below that we produce the complete assessment with particular parts emphasised:

Esgair Cwm Owen Uplands**VS1: Has the information been verified in the field?**

No

VS2: Does this area have a special or functional link with an adjacent area?

Yes

Extensive views into the Caersws River Bowl and long distance views from various locations within the aspect to upland areas above Lake Vrynwy to the north and upland moorland and woodland above Llangurig to the south

VS3: Summary Description

An extensive area of upland grazing with a patchwork vegetation cover of rough grazing, heather and bracken, irregular field patterns running with the topography and intermittent small blocks of coniferous and mixed woodland... Exposure and wind are dominant features with isolated more intimate areas with small irregular hedged fields in sheltered areas to the edge of the area...

Physical Form and Elements:**VS4: Topographic Form?** Rolling/Undulating**VS5: Landcover Pattern?** Open Land**VS6: Settlement pattern** No settlements**VS7: Boundary type** Fences**Aesthetic Qualities:****VS8: Scale?** Large**VS9: Sense of Enclosure?** Open**VS10: Diversity?** Simple**VS11: Texture?** Coarse

Visual and Sensory Aspect Areas

VS12: Lines? Straight**VS13: Colour?** Moderate Contrasts**VS14: Balance?** Harmonious**VS15: Unity?** Unity**VS16: Pattern?** Random**VS17: Seasonal Interest?** None

Other Factors:**VS18: Level of Human Access?** Occasional**VS19: Night Time Light Pollution?** Negligible

N/A

VS20: Use of Construction Materials?

Generally Appropriate

VS21: What materials? Give Details

N/A

VS22: There are attractive views...

...both in and out

*To surrounding upland areas and down into lowland adjacent***VS23: There are detractive views...**

...neither in or out

N/A

VS24: Perceptual and Other Sensory Qualities

Attractive

Tranquil

Exposed

Remote

Settled

VS25: What is the sense of place/local distinctiveness

Strong

N/A

VS26: Value:

High

*Good example of upland grazing patchwork of vegetation - rough / poorly drained grazing, bracken, heather... Acts as a significant contrast to the more rolling managed farmland of the hill and scarp and lowland areas...***VS27: Condition:**

Visual and Sensory Aspect Areas

Unassessed

VS28: Trend:

Unassessed

VS29: Existing management

Generally Appropriate

VS30: Existing management remarks:

Upland grazing with patchwork vegetation - rough / poorly drained grazing, bracken

VS31: Principal management recommendation: Maintain as existing**VS32: Guideline**

Medium Term

*Manage bracken to maintain existing balance of agricultural practices***Define the key qualities that should be...****VS33: conserved:** Open aspect with limited/isolated tree cover and extensive farming practices**VS34: enhanced:** N/A**VS35: changed:** N/A**Define the key elements that should be...****VS36: conserved:** Isolated grouped trees marking field/landownership boundaries...**VS37: enhanced:** Maintain the general open aspect and extensive farming practices through use of traditional techniques**VS38: changed:** N/A**VS39: Are there any significant threats to the current integrity and condition of the visual & sensory features of the area?**

Not known



VS40: To what level was this information site-surveyed?

Level 3

VS41: At 1:10,000, how much of the Aspect Area boundary is precise?

All

VS42: What baseline information source was used for Aspect Area boundary mapping?

Other

*OS Data and Aerial Photographs***VS43: If OS Data was used, what was the scale?**

1:10,000 and 1:25,000

VS44: What is the justification for the Aspect Area boundaries?

Significant change in landuse and vegetation type over 300m

Visual and Sensory Aspect Areas

VS45: List the key sources used for this assessment

Montgomeryshire Landscape Assessment (1992)

Evaluation Criteria**VS46: Scenic quality** High**VS47: Integrity** High**VS48: Character** High**VS49: Rarity** Moderate**VS50: Overall Evaluation** High**VS51: Justification of overall evaluation**

Good example of patchwork upland grazing that is characterised by the field patterns and land use emulating the topography = High

VS52: Additional Assessments

N/A

VS53: Additional Comments

N/A

CUP questions how the developers could reach the conclusion that:

5.8.54 ...although this development would significantly change the character of the Esgair Cwmowen Uplands, it could also be described as "a dramatic feature in an otherwise open but dramatic landscape" and would not necessarily "degrade or detract from the aesthetic qualities of the landscape". ... Tirgwynt Wind Farm would be satisfactorily integrated into the landscape of the Western Uplands SLA without significantly affecting the purpose of this local landscape designation.

CUP notes that both of the areas where there are windfarms are described as 'discordant' & 'unbalanced', whereas for Esgair Cwmowen word such as 'tranquil', 'harmonious', 'attractive' are used. The overall evaluation is 'High'; this does not equate with the conclusion of the developers. We also note that in not one of these cases has the assessment been verified in the field.

5.9 ASSESSMENT OF EFFECTS ON VISUAL AMENITY

CUP makes little comment on the effects on visual amenity from the data provided; as we have already demonstrated this data is so weak as to render it useless. We are confident that should an evaluation of the methodology be undertaken by a reputable consultancy with no conflict of interests this conclusion will be affirmed.

5.9.9 Most of these properties are shown on Figure 10. There would not be residents in Bryngwyn and may not be residents in Gwaenydd during the operational life of this development. However, as a result of the proximity of the turbines, residents in Blaen-y-Cwm, Llanerch, Cefn Brith, Rhyd y Biswal, Gwaenydd (if occupied), Gwaun y Maglau, Cwm, Carreg-y-big and Fuches Goch would experience a significant change



in the view from their properties, although the turbines would not be sufficiently close or large to become overbearing in views from these properties.

CUP questions the acceptability of developers coming to financial arrangements that preclude any member of the electorate from taking part in the democratic process. Properties becoming empty is one of the issues that has been of concern to rural authorities where communities have withered, and it is of note that of the ten properties listed only two are owned by farmers who have a financial interest in the scheme; to suggest that the sustainability of rural Montgomeryshire would not be affected (or even that the effect would be positive!) is ridiculous. CUP has plenty of evidence to demonstrate that living in close proximity to the wind farm will have a detrimental effect upon the health and well being of the residents, thus impacting on health and social services; and in many cases is likely to render properties uninhabitable, bringing with it reduced council tax, loss of businesses, reduction of tourism etc.

We provide further evidence in the appendices, but emphasise the point that the Local Authority has a legal duty to protect the well being of civil society and the repercussions from development such as this would be another millstone with which PCC is left as a result of WAG policies.

5.9.10 For the developers to attempt assess the level of visual impact from their totally inadequate ZTVs is a demonstration of the weakness of the ES. With basic commonsense local people can stand on the top of the hill and know from where the wind farm will be seen.

5.9.11 The main visitor attraction in the 20km study area

CUP notes that at this stage the developers chose to use the 20km radius; far more local to the site are caravan parks, bed a breakfast businesses and the Red Ridge Activity Centre that need the local natural environment to attract visitors. As significant employers surely they should have received some mention here? However, as the developer states: *5.9.12 Much of the attraction of the part of the National Park located within the study area is its scenery... (and views!)*

5.9.13 -14 How extraordinary that the developers have omitted the caravan site in Cefn Coch! Could it be that the site owners and caravan owners' opposition is known?

5.11.18 There are nine individual residential properties within 1km of the site, and the residents in seven of these properties would experience a significant effect on their visual amenity ..

This means that 78% of local properties within 1km whose residents would experience a significant effect. Would they still be able to live there? Would they be happy to live there? Would they be able to sell the property?

CUP notes that the properties in the hands of landowners who would benefit from the proposal are removed from the figure; in reality there are 11 properties within 1km of the site.

CUP requests that the planning authority clarifies the position as to their responsibility for these landowners. We are aware that ETSU guidelines mean that the maximum noise levels set do not apply where one has a pecuniary interest; however we would be pleased to receive clarification of how this affects the level of responsibility PPC / tLHB would have for the welfare of the residents.

5.11.41 In conclusion,...Residents in Rhyd, Carno and Cefn Coch and a few local residential properties with open views of the turbines and within approximately 8km of the nearest turbine would experience a significant effect on their visual amenity, as would



users of the Carmel Caravan Site, walkers on Access Land and users of the public rights of way network through and around the site within 4.5km of the turbines, and motorists on the local road through and around the site up to 3km from the nearest turbine.

This statement is very different from the one above where we were told about the 7 properties within 1km. Now it seems that far more people will be affected; we refer to the information on Wind Turbine Syndrome. Does the local authority have a responsibility to inform residents of health risks or can they just wait...and hope?

5.11.42 However, the extent of these significant effects is limited, the proposal would have an obvious and directly functional relationship with the nature of the local landscape and, in landscape and visual terms the proposal would be acceptable in this location.

To produce an Environmental Statement that selectively presents evidence and from the evidence finds conclusions at odds with its own evidence is unhelpful. The effects of the significant impact are over a wide area due to the expansive plateau, contrary to the statement above, the attractive expansive views as detailed in the LANDMAP survey will be interrupted creating a disjointed untidy skyline, as is now seen from a wide area around the recent wind farm north of Trannon.

6.3.5 Phase 1 habitat survey states: *The mosaics had wetter, more species-rich vegetation, particularly in the depressions... and modified mire... the presence of abundant bog-mosses. Many areas of the plateau were covered with peat, most of which was deep... and mire, ...peatland, ...fen. In terms of the conservation value, all of these are priority habitats in the UK Biodiversity Action Plan (BAP), so they are all of significant UK conservation importance. ...and unmodified mire is more significant in conservation value than modified mire. The more species-rich areas, often with cotton-grasses, Bog Asphodel, Cross-leaved Heath and sedges, sometimes with extensive Heather, and occasionally Round-leaved Sundew or Bottle Sedge. In some places there were also sedge-rich flushes, which are probably more base-rich. ...This mire is by far the most important habitat on the site and should be avoided, as it will be vulnerable to changes in hydrology, and from construction work, through the addition of tracks through the mire or turbines.*

It is clear even from the Phase 1 survey that much of the area is of considerable conservation value.

The peat requires accurate measurement and plotting, using handheld GPS. This work is essential so that robust measurement of peat depth and thus its carbon sequestration value is known; this information is necessary to undertake carbon calculations.

Pont Pren Dano survey was undertaken on 3rd January 2007

The hedge comprises the following native woody species: hawthorn (dominant); hazel; holly; bramble; honeysuckle and dog rose Rosa canina.

It is disappointing that in a project that we are told has been planned for so long, it was not possible to undertake surveying at the most useful time of the year, rather than in the middle of winter, when even the most expert botanist would be tested.

CUP require this work to be reassessed at an appropriate time of the year.

6.3.8 *The surveys were undertaken on the 25th and 26th of January 2007. The weather on the first day was cold, dry and frosty with clear skies. The second day was slightly warmer and overcast but the ground was still frozen in places. The preceding weeks had been wet and stormy hence high water levels and lots of vegetation and woody debris on the ground.*



CUP again questions the validity of surveyors undertaking this work in January. Most expert ecologists would consider this to require better conditions and that the visits be at least some weeks apart; it would be impossible to undertake surveys for bats, great crested newts, or water voles in January, indeed most species would be relatively dormant.

Despite this we see that there is considerable otter presence within the project area and badgers are particularly active in the northern section. We note that the only other mammals that were identified were rabbits, fox and field voles. CUP contends that this area is teeming with wildlife,

CUP members see brown hare, weasels, stoat; and just outside the survey area water vole have been seen, as well as many of the more common mammals.

6.4.1 CUP questions what assessment of hydrological impacts has been made.

6.4.5 *Table 6.3: Summary of Habitat Classifications for Each Turbine.*

CUP finds this information to be at odds with the maps provided; either the maps are so inaccurate as to be useless; which is our contention previously, or the table above is incorrect.

CUP requests written clarification of the relationship between the table and the map.

6.5.15 Blanket bog habitat covers approximately 150 ha of the proposed development area and also occurs within mosaics which cumulatively cover 25 ha. Blanket bog has been mapped as covering approximately a third of the survey area. Blanket bog is however a UK BAP priority habitat, and the UK HAP (Habitat Action Plan) for blanket bog covers all blanket bog, whether active or not. The bog pools and areas of standing water provide a valuable resource for invertebrates and spawning amphibians, and drinking water for birds and mammal species.

This appears to be yet another example of developers' ignorance of the significance of peat as a carbon sink, or zealous pursuit of their goal to cover the land with wind farms. We already have the terrible legacy of peat destruction and drainage on Trannon, Cefn Croes and Mynydd Clogau. We require a thorough survey of the whole project site using an auger and hand-held GPS; every area of peat needs plotting, with exact details of its depth and area. When this has been completed the developers could then try to provide evidence that they have made every effort to avoid all peat. This method also provides the data on which a CO₂ calculation for the whole project can be made and this will contribute to the life-cycle carbon footprint that must be undertaken to evaluate the contribution (or otherwise) of this proposal reducing our CO₂ emissions and providing secure reliable electricity.

6.5.46 to Table 6.11: The developers underestimate the level of habitat loss and find no unimproved grassland anywhere works are proposed.

CUP notes that BAP habitat loss is still calculated as of low importance. These statements are incorrect and again demonstrate the lack of objectivity in this piece of work. CUP reiterates the fact that an environmental statement should be an objective assessment not a 'sales job' for the developers!

There is considerable discussion as to the impact of the development on badgers and otters and the points of concern identified by the surveyors have been noted, but in every case we are informed that the developers will overcome the problem and there is no cause for concern.



CUP requests evidence of how similar developments have performed. We accept that it would be highly unlikely that CCW would be informed of injury or death to species unless there was a major incident.

What evidence is available to demonstrate that any or all of these mitigative measures will be undertaken, and that any wildlife 'mishaps' will be reported?

Bats: 6.5.62-3 *The impacts of wind farms on bats in the UK are not fully understood (Harbusch and Bach9, Betts10) although both pipistrelle species have been identified to be potentially at high risk of collision from turbines (reviewed in Betts12). And yet the developers conclude: It is therefore unlikely that there will be any impacts on the conservation status of bats in the development site area resulting from construction or operation of the proposed wind farm, and no significant effects on bats are expected.*

CUP refers to the information on bats earlier in this document; despite this the developers continue to pursue this line. Some of these are, of course the same people involved in the original Mynydd yr Hendre application where we were told that although they didn't know what bats were there, nor how many, they could say with confidence that none would be affected by the wind farm!

6.5.65 *It is likely that these activities may cause temporary disturbance to these species and some species may be displaced from the development area during construction. However, no impacts on the integrity of the habitats used by these species are expected, and it is likely that following completion of construction, these species will return to the development area.*

Despite the developers not knowing precisely what species are living or using the site CUP notes that again their lack of objectivity leads them to the conclusion above. We then see: *It is unlikely that there would be ongoing impacts on these species during wind farm operation. It is therefore unlikely that there will be significant impacts on mammal species during construction or operation of the wind farm.*

The conclusion does not match the data.

6.6.21 *Water quality within this area is of particular importance not only to wildlife but with regard to private domestic drinking water supplies which are present to the east of the main watercourse.*

CUP requests knowledge of the work undertaken by PCC, to ensure that the quality of the drinking water at the property known as Hen Dafarn is not affected in any way.

From the limited work undertaken by the developers it is already evident that this area supports species that are of local, regional and national importance. CUP believes that without evidence from current monitoring on the existing sites it is extremely difficult for the developer to assert with any authority, what level of impact on wildlife could be expected. It is imperative that the planning authority receives collated monitoring data so that it can make authoritative and informed judgement.

7.1.2 We refer to the letter from Christopher Wallbank 7.11.2007 which provides clear evidence of the fact that, the ES fails to fulfil its function and provide a clear objective picture. *The development area is located in an area identified to be of low sensitivity for impacts on birds.*

7.1.3 We refer you to a previous point to which we still await a response: All breeding birds are protected from disturbance during the breeding season by law. With breeding spanning February to August and the distance required to avoid the nests (600 metres



for curlews), CUP requires assurance from the Planning Authority that no work will be undertaken on the site, road widening or in the vicinity of Pont Pren Dano at any time from February to August (inclusive). The developers underplay the significance of the impact on curlew. At Trannon the curlew survey work was carried out by CCW in 1997. The reason that the sample size was small is because not many curlews were there! This study was carried out by experts at a site that is local to this proposal. The demonstrable negative impact is justified by assuming that curlew breeding pairs will successfully move to new sites; where is the evidence to support this? CUP requires evidence of the steps that CCW and CCW are currently undertaking to ensure the protection of the birds listed here and elsewhere that are such an obstacle to development and financial benefit.

7.1.4 Impacts of minor significance are predicted to occur within the development area on Red Kite. 7.1.5 No significant impacts are predicted during construction, operation or decommissioning of the wind farm on any other bird species. 7.1.6 Overall, the development area is located in an area of low bird sensitivity.

CUP contends that if red kites are not displaced from the wind farm areas then it is apparent that they will be at risk of collision with turbines. A relatively high number of collisions have been reported from Germany, with deaths also reported from wind farms in Wales and Scotland. This point should also be noted when considering the existing wind farms, all those with applications submitted and those awaiting submission. Where are these birds to fly and nest if these applications are accepted? Curlew would have been affected by the previous layout and we are now expected to believe that this is no longer the case. Snipe breeding on land identified for both Tirgwynt and Mynydd Waun Fawr wind farms are also of national importance in Wales. We reiterate the point made by C Wallbank, that as the site layout shows turbines to be no more than 1200 metres apart it would therefore be impossible for curlew to be on the site and be 600 metres from a turbine. We also point out that numerous other species are found on the site including golden plover, hen harrier and peregrine falcon, all of which are protected.

Table 7.2: Lists the birds identified and yet this is downgraded in the narrative; for example the skylark is a red data book species and on the amber list in Wales, but is described as of regional importance. It would perhaps, have been helpful if the developers had started by using the bird list given as part of our evidence in the Public Inquiry for Cwm Llwyd in 2000 when the developer's list of less than 48 species was shown to be very poor and details of over 84 species were provided. This current list shows how much more work is needed to be done before the developers would have any idea of the biodiversity of the project site let alone its environs.

7.5.17 Appropriate deterrent measures will also be implemented to discourage birds from foraging near the turbines.

As we suspected the area that will impact on the biodiversity of the area, is, in fact the whole site. Deterrent measures will be used to keep birds from foraging, notices will be erected to keep people away. And yet this is an environmentally benign development!

7.5.21 Red Kite. There is much suitable habitat to support foraging birds within the development site; however there are also large areas of suitable habitat over the broader area.

CUP points out that this broader area is identified by other developers and we already know that red kite that remain on the site are likely to be killed.



Table 7.4: Summary of Impacts on Birds

Yet again we find that the impact on the bird life of this area will not be significant! What utter nonsense! The ornithological survey is incomplete (although a sterling effort for the amount of time the developers were prepared to pay for!) the data is assessed and the conclusion is that required by the developer. Yet again a total lack of objectivity.

7.7.1 Bird surveys ..2005 and 2006 ... Three internationally important raptor, red kite, hen harrier and short-eared owl,. Curlew and snipe skylark, grasshopper warbler, starling, linnet and reed bunting....skylark (up to 56 pairs), linnet (2 pair) and reed bunting (up to 4 pairs) were recorded breeding within the development area. The development area is located in an area considered to be of low sensitivity for impacts on birds.

7.7.2 Mitigation measures, including ensuring any vegetation clearance is completed outwith the bird breeding season to avoid impacts on nesting birds, are proposed to minimise impacts on important bird species.

7.7.5 No significant impacts on breeding waders, in particular curlew, are predicted. Collision risk assessment showed that there would be no significant collision risk to curlew.

7.7.7 Overall, the development area is located in an area of low bird sensitivity, and the selection of this site has ensured that there will be minimal impacts on populations of important or sensitive bird species.

As we know from peer reviewed research red kite aren't displaced because they stay on the sites, and are killed by turbines; and conversely curlew are not killed by turbines because they are displaced. This whole section is subjective in the extreme.

Archaeology: Of the nine sites, the impact on at least three is thought to be of considerable significance. Should there be any doubt about the history of the area and the conclusions already reached at Public Inquiry they are provided here:

8.2.1 The cultural heritage assessment of a large part of the currently proposed Tirgwynt Wind Farm was originally undertaken by the Clwyd-Powys Archaeological Trust in 1993 to provide the basis of the archaeological section of the Environmental Statement submitted for the Mynydd yr Hendre Wind Farm project in 1995 (Hankinson 1993). This report was revised in 1998 by the Field Services Section of the Clwyd-Powys Archaeological Trust (henceforward CPAT) at the request of West Coast Energy Ltd to provide the archaeological assessment of the projected Cwm Llwyd Wind Farm. This involved some further fieldwork and a report was submitted in August 1998. Subsequently, the wind farm proposal was turned down following a public inquiry.

8.2.2 Early in 2005 plans for a new wind farm known as Tirgwynt were initiated. CPAT was invited by West Coast Energy Ltd on behalf of Awel Newydd Cyf in July 2005 to prepare a new assessment of the cultural heritage of the area of the development. This was completed over the winter of 2006/7 and this report submitted in February 2007.

8.9.6 CUP points out that the Minister for Culture values the sense of place and not just the plotting of sites prior to their demise!



9.8.7 *It will be possible for the footprint of the access road to avoid physically intercepting the shallow well/catchpit used as the water supply to Hen Defarn. However, a firm and absolute guarantee that the quantity or quality of the water will not be impacted in any way, either temporarily during construction or on a longer-term basis can be given. It is therefore necessary and precautionary to consider other possible sources of water to the property.*

At this stage we find that the developers shoddy work has let them down completely! Note the quotation underlined above; it is only the sentence following that leads the reader to assume that what is written is the exact opposite of what is intended. Clearly the options that follow are unacceptable to the resident and owner of the property, who has lived there for some thirty years; and as we still live in a democracy and her health and well being is of importance to the local authority we request information as to what view PCC take on this private enterprise attempting to stop, and change the water supply of one of its residents, against their will?

10.8.8 *The dwelling known as Gwaenydd currently appears to be derelict and may require planning permission before it can be used as a dwelling.*

What information do the developers have to support this statement? What communication have the developers had with the owners of the property regarding their business affairs?

11.5.2 *Only properties within 130 degrees either side of north, relative to the turbines can be affected in the UK. Furthermore as a general rule of thumb, residential properties must also be within ten rotor diameters of the turbine to be affected, in the case of Tirgwynt Wind Farm, this being within 800 metres. There are five residential properties within 800 metres (and within the 130 degrees either side of north zone) of any turbine.*

CUP requests information as to effect on the safety of walkers, riders, road users and the residents in the properties. What specific safety issues are the developers considering?

The developers select information which has already been disproved and grossly exaggerate the potential output of the proposal:

3.9.1 *Based on 22 2MW turbines, the Tirgwynt Wind Farm could have an installed capacity of 44MW. Using a standard capacity load factor (% of installed capacity potential energy captured) of 30% which takes into account the intermittent nature of wind frequency and speeds, it is calculated that on average some 115,632MW of electricity will be produced annually.*

Published data shows that most onshore wind farms in Wales do not deliver year-on-year capacity load factors of 30%; it would probably be more prudent to use 25%.

To work out the amount of electricity produced – 25% of 44MW = 11MW x 24hrs x 365 days = 96,360MWh produced annually. To put this in perspective the UK requires an annual supply of around 380,000,000MWh. So 96,360 expressed as a fraction of the total represents just 0.00025 of what we use. A tiny supply puddle in a huge lake of demand.

We have serious reservations about the statements in 3.9.2,3. *Every unit of electricity produced by wind energy could displace a unit of electricity that would otherwise have been produced by a power station burning fossil fuel.*



Firstly, at periods of low demand electricity is largely produced from so-called base-load stations, which are mainly large scale coal fired units and nuclear reactors which cannot be turned on and off rapidly so it's improbable that every unit of unpredictable wind generated electricity replaces a unit of base-load supply. Secondly, replacing a unit of electricity from a fossil fuel station does not necessarily equate to a saving in fossil fuel consumption. Some types of station, such as coal-fired ones may continue to burn fuel even when their electricity output is replaced by that from wind turbines. We do, however, believe it important to state the obvious for public record:

1. Most of UK electricity is not produced by coal fired power stations, and certainly not the dirtiest of these, to which these figures equate.
2. To assume that wind farms last for 25 years is completely unsubstantiated; according to the House of Lords Science and Technology Committee wind farms in the UK last on average for nine to twelve years.
3. The emissions factor identified of 860g CO₂/kWh was refuted some years ago, and finally in December 2008 the BWEA reluctantly withdrew this figure and accepted that they had exaggerated by 100%! The actual figure should have been 430g CO₂/kWh.
4. To calculate that the CO₂ emissions saving identified against the dirtiest coal fired power station can then be multiplied for 25 years is ridiculous. These power stations are being phased out and the alternatives are gas or nuclear; the former has far lower CO₂ emissions and the latter has none.

The small statement in brackets does not justify this appalling lack of objectivity.
(However, it should be noted that future changes in the power generating mix and fuel costs in the UK over the life of the wind farm means this figure may change over time.)

As regards: *This is equivalent to making 46% of the population of Powys self sufficient in clean and sustainable renewable energy.*

Self sufficiency is not to rely on external support; how on earth would intermittent, unreliable electricity make the people of Powys self sufficient? This statement is untrue and again demonstrates bias.

We note the 'promise' of employment and economic benefit; CUP asks the planning authority to provide evidence of the economic benefit to Powys of the existing wind farms. After such length of time we feel confident that Powys County Council will have an economic breakdown of the costs and benefits for each of the sites and a cumulative evaluation. We request this information.



APPENDIX 1

Summary of Wind Turbine Accident data to 31 December 2009

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The summary may be downloaded in printable form by clicking [here](#)

The full accident list may be downloaded by clicking [here](#)

The attached detailed table includes all documented cases of wind turbine related accidents which could be found and confirmed through press reports or official information releases up to 31 December 2009. CWIF believe that this compendium of accident information may be the most comprehensive available anywhere.

Data in the detailed table attached is by no means fully comprehensive – CWIF believe that what is attached may only be the “tip of the iceberg” in terms of numbers of accidents and their frequency. However, the data gives an excellent cross-section of the types of accidents which can and do occur, and their consequences.

The trend is as expected – as more turbines are built, the more accidents occur. Numbers of recorded accidents reflect this, with an average of **72.1** accidents found per year from 2002 to 2009 inclusive, and only an average of **16.0** accidents found per year in the previous seven years (1995-2001 inclusive). With few exceptions, before about 1997 only data on fatal accidents has been found.

There is a general trend upward in accident numbers over the past 10 years. This is predicted to escalate unless HSE make some significant changes – in particular to protect the public by declaring a minimum safe distance between new turbine developments and occupied housing and buildings (currently 2km in Europe), and declaring “no-go” areas to the public, following the 500m exclusion zone around operational turbines imposed in France.

Data attached is presented chronologically. It can be broken down as follows:

Number of accidents

Total number of accidents: 715

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.	1	8	17	5	9	16	8	33	29	12	63	51	52	55	55	83	112	106

Fatal accidents

Number of fatal accidents: 60

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.	1	8	8		2	4		1	3		1	3	4	3	5	4	9	4

Please note: **There are more fatalities than accidents as some accidents have caused multiple fatalities.**

Of the 66 fatalities:

- 47 were wind industry and direct support workers (maintenance/engineers, etc), or small turbine owner /operators.
- 19 were public fatalities, including workers not directly dependent on the wind industry (e.g. transport workers).

Human injury

A further 38 accidents regarding human injury are documented.

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			2		1		1	1	4	1	2	2	1	2	4	3	8	6

Twenty-nine accidents involved wind industry or construction/maintenance workers, and a further nine involved members of the public. Four of these injuries to members of the public were in the UK.

Blade failure

By far the biggest number of incidents found were due to blade failure. "Blade failure" can arise from a number of possible sources, and results in either whole blades or pieces of blade being thrown from the turbine. A total of 167 separate incidences were found:

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			3	3	3	6	2	18	4	5	15	12	14	10	13	17	18	24

Pieces of blade are documented as travelling up to 1300 meters. In Germany, blade pieces have gone through the roofs and walls of nearby buildings. This is why CWIF believe that there should be a minimum distance of at least 2km between turbines and occupied housing – in line with other European countries - in order to adequately address public safety and other issues including noise and shadow flicker.

Fire

Fire is the second most common accident cause in incidents found. Fire can arise from a number of sources – and some turbine types seem more prone to fire than others. A total of 138 fire incidents were found:

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			1	1		1	1	2	3	1	24	17	15	14	12	20	16	10

The biggest problem with turbine fires is that, because of the turbine height, the fire brigade can do little but watch it burn itself out. While this may be acceptable in reasonably still conditions, in a storm it means burning debris being scattered over a wide area, with obvious consequences. In dry weather there is obviously a wider-area fire risk, especially for those constructed in or close to forest areas and/or close to housing. Two fire accidents have badly burned wind industry workers.

Structural failure

From the data obtained, this is the third most common accident cause, with 84 instances found. "Structural failure" is assumed to be major component failure under conditions which components should be designed to withstand. This mainly concerns storm damage to turbines and tower collapse. However, poor quality control, lack of maintenance and component failure can also be responsible.

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			1				3	6	9	2	8	4	3	7	6	11	9	15

While structural failure is far more damaging (and more expensive) than blade failure, the accident consequences and risks to human health are most likely lower, as risks are confined to within a relatively short distance from the turbine. However, as smaller turbines are now being placed on and around buildings including schools, the accident frequency is expected to rise. There has been a sharp rise in structural failures from the latter part of 2007 continuing through 2008 to present.

Ice throw

27 incidences of ice throw were found. These are listed here unless they have caused human injury, in which case they are included under "human injury" above.

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.					3	3		3			2	1	4	3	2		3	3

Ice throw has been reported to 140m. Some Canadian turbine sites have warning signs posted asking people to stay at least 305m from turbines during icy conditions.

These are indeed only a very small fraction of actual incidences – a report* published in 2003 reported 880 icing events between 1990 and 2003 in Germany alone. 33% of these were in the lowlands and on the coastline.

* (*"A Statistical Evaluation of Icing Failures in Germany's 250 MW Wind Programme – Update 2003, M Durstwitz, BOREAS VI 9-11 April 2003 Pyhäntunturi, Finland.*)

Transport

There have been 45 reported accidents – including a 45m turbine section ramming through a house while being transported, a transporter knocking a utility pole through a restaurant, and a turbine section falling off in a tunnel. One man lost his leg in 2006 following a transport accident off the Scottish coast. Most involve turbine sections falling from transporters, though turbine sections have also been lost at sea, along with a £50M barge. Two turbine sections fell from main roads in Scotland.

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.											4		2	4	3	14	8	10

Environmental damage (including bird deaths)

Only 60 cases of environmental damage have been reported – the majority since 2007. This is perhaps due to a change in legislation or new reporting requirement. All involved damage to the site itself, or reported damage to or death of wildlife. Twenty-seven instances include deaths of protected species of bird.

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			1							1	1	7	1	5	3	8	20	13

Other (miscellaneous)

95 miscellaneous accidents are also present in the data. Component failure has been reported here if there has been no consequential structural damage. Also included are lack of maintenance, electrical failure (not led to fire or electrocution) and planning "accidents" where towers have been installed closer than permitted to housing, etc. Construction accidents are also included, also lightning strikes when a strike has not resulted in blade damage or fire. A separate 1996 report** quotes 393 reports of lightning strikes from 1992 to 1995 in Germany alone, 124 of those direct to the turbine, the rest are to electrical distribution network.

** (Data from WMEP database: taken from report "External Conditions for Wind Turbine Operation – Results from the German '250 MW Wind' Programme", M Durstewitz, et al, European Union Wind Energy Conference, Goeteborg, May 20-24, 1996)

By year:

Year	70s	80s	90-94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No.			1	1		2	1	2	6	2	6	5	8	7	7	6	21	21

APPENDIX 2

Please see the complete article:

SPIEGEL ONLINE, 02/10/2009

Climate Change Paradox: Wind Turbines in Europe Do Nothing for
Emissions-Reduction Goals

Despite Europe's boom in solar and wind energy, CO2 emissions haven't been reduced by even a single gram. Now, even the Green Party is taking a new look at the issue -- as shown in e-mails obtained by SPIEGEL ONLINE.

By Anselm Waldermann

You can download the complete article over the Internet at the following URL:

<http://www.spiegel.de/international/business/0,1518,606763,00.html>

APPENDIX 3

Wind Energy And Public perceptions.

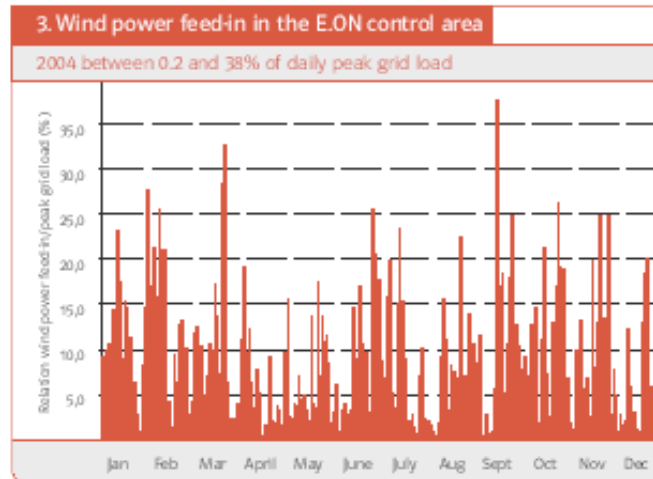
Both Government and developers habitually describe output from wind farms as supplying enough electricity for so many thousand homes. In our view this is either intended to be misleading or is perhaps based on a patronising view that the public cannot understand real data in its proper empirical context. Wind farms are subsidised to a significant extent through the Renewable Obligation system, both government and developers therefore have a duty of honesty to consumers to make it clear as to the true contextual value of wind power and in our view should not be allowed to base claims on the 'household equivalence' measurement which misleads in the following ways:

1. It can be construed easily as implying that turbines supply homes with sufficient electricity to meet their minute-by-minute demands so that they have no dependence on other forms of generation. This is clearly untrue because output from wind farms self-evidently varies from zero to full capacity depending on wind speed.
2. It can also be interpreted as meaning that meeting household needs addresses the major demand for electricity in the UK. In reality, domestic houses typically only use around 30% of national electricity consumption. It would therefore be far more honest and accurate to express the significance of wind in terms of its impact on national consumption, which is around 380000000MWh. Tirgwynt wind farm would yield around 100,000MWh which is just 0.00026 of needs.
3. It implies that current energy policy objectives, which are almost totally dependent on deployment of wind turbines, address the scale of the energy problem that the UK faces. The 2009 UK Renewable Energy Strategy (<http://www.decc.gov.uk>) is designed to meet the EU Renewable Energy Directive, which specifies that that the UK should supply 15% of its Final Energy Consumption (FEC) from renewables by 2020. This covers all sectors, i.e. all forms of energy used to supply electricity, heat, and transport. Shortfalls will be subject to heavy penalties. The UK's current FEC from all fuel sources equates to around 1,745 TWh per year or 1,745,000,000MWh. In this context expressing Tirgwynt's fractional contribution of around 100,000 MWh equates to a 0.000057 of total needs.
4. Household equivalence also fails to set wind farms in the context of the scale to which the landscape will need to be industrialised to meet even modest fractions of FEC. Published data on UK wind farms indicated that, on average, installed capacity per unit area of land is around 2Watts per square metre. So the land-take for 1 GigaWatt of wind power requires 50,000,000 square metres or 5,000ha. To set this in a Welsh context the 1GigaWatt Nuclear power station on Anglesey (Wylfa) occupies around 20 ha. It, of course, generates close to its full design capacity minute-by-minute and day-by-day whilst its impossible to know in advance what a GigaWatt of installed wind power will generate at any particular minute. Interestingly, the wind industry has recently taken to claiming that intermittency is not a problem because the 'wind will always be blowing somewhere'. This claim whilst essentially true is patently misleading in addressing the problem of variability and unpredictability of wind energy. In evidence we present the following information from Germany.

The German power company E.ON Netz GmbH, is responsible for the electricity transport grid of the E.ON Group in Germany. It manages 32,500 kilometres of high-voltage and extra-high voltage lines covering approximately one third of Germany, and is one of the largest electricity grid operators in Europe (in the UK, the E.ON group owns Powergen). Within E.ON Netz's German control area there is at least 6,250 MW of wind power, or about a third of that country's installed capacity, which makes it one of the world's most experienced companies in integrating a stochastic power supply such as wind generated electricity into a grid distribution system that demands both stability and reliability of supply.

E.ON publishes their wind power experience in annual reports that are available on their web site (www.eon-netz.com/EONNETZ_eng.jsp). In their most recent report they reveal the several key **facts** illustrating the considerable problems they have integrating Germany's growing wind energy capacity into the electricity supply system under their control and, as a consequence, the extremely limited value of wind power in mitigating CO₂ emissions and delivering usable power. The italicized sections below are direct quotations from their report.

- 1. Wind energy is only able to replace traditional power stations to a limited extent. Their dependence on the prevailing wind conditions means that wind power has a limited load factor even when technically available. It is not possible to guarantee its use for the continual cover of electricity consumption. Consequently, traditional power stations with capacities equal to 90% of the installed wind power capacity must be **permanently online** in order to guarantee power supply at all times.*
- 2. On very windy days, normal operation of the transmission grid is sometimes no longer possible... There is therefore a risk that even simple grid problems will lead to the sudden failure of over 3,000MW of wind power feed-in. In this case, the reserves maintained in the Integrated European Transmission System, in order to cope with problems, would no longer be adequate to safely tackle such failures. At the present time, it is not known how to confront this risk.*
3. The claim that “**when wind speeds are too low or too high in one location, other wind farms are still operating in other parts of the country**” is clearly refuted by E.ON data presented in the histogram below. In every month of the year the integrated wind power outputs over the whole E.ON wind-carpet area show huge output variations.



This fact creates such major difficulties in supply management that it is specifically emphasized in a speech by E.ON's CEO, Martin Fuchs, who illustrates the huge swings in wind power with a particularly timely example - *Maximum wind power output in our control area was achieved on the morning of 24 December, with an absolute figure of 6,024 MW. However, the supply on Christmas Eve fell to under 2,000 MW within just ten hours. By Boxing Day – on 26 December – the figure had slumped to under 40 MW, a negligible value to all intents and purposes.*

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