ECOCAS Wind Farm

(Esgair Cwmowen Central and South)

Volume 1

Non-Technical Summary

Independent Power Systems Limited (IPS)

Canada House, 272 Field End Road, Eastcote, Ruislip HA4 9NA

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Prepared for:

Mr John Eurfyl Roberts-Watkins

Craigfryn
Newtown
Powys
SY17 5JY

Mr John Edward Jones

Tanffridd
Penstrowed
Newtown
Powys
SY16 4JY

Introduction

Independent Power Systems Ltd (IPS) has applied for planning permission on behalf of Greenspan Renewables Limited, a company controlled by Messrs Eurfyl Watkins and John Jones, for a 17 wind turbine wind farm to be known as ECOCAS (Esgair Cwmowen Central and South) on land at Esgair Cwmowen, three miles north east of the village of Carno, five miles from the town of Newtown, Mid Wales (see Figure 1). The intention of the two sponsors, both local farmers, is to provide renewable energy for use through the National Grid. The two project sponsors are wholly independent of any organisation or company, making the project a totally locally funded planning application for a wind farm development. No external funds have been sought or used by the sponsors in the development of their proposals. Both of them have spent all of their lives in and around Newtown and Carno and, with their families, farm the hills above Carno, mainly sheep rearing, with some supporting livestock together with growing and harvesting crops for animal feed.

Consultation with the Department of Energy and Climate Change (DECC) confirmed that the development would be subject to a formal Environmental Impact Assessment under Section 36 of the Electricity Act 1989. IPS have produced an Environmental Statement to report the findings of the assessments carried out to support the application of the ECOCAS Wind Farm. A summary of these are detailed in this non-technical summary.

Climate Change

There is evidence that global warming and climate change is a real problem and has the potential to cause effects on sea levels. One of the main causes of global warming is the increased burning of fossil fuels such as oil, gas and coal. There is a need for a clean alternative source of energy not just because of the climate but also to help reduce carbon levels and to provide a sustainable energy supply that is continuous and secure for the future.

The Stern Review: The Economics of Climate Change (2006) suggests that early investment in energy efficiency and carbon-free forms of energy generation will be of significant financial benefit if the full cost of climate change is to be avoided. The suggested solution to tackling climate change is a mixture of a reduction in energy consumption combined with a significant switch from a carbon-based economy to a more sustainable economy based on renewable energy.

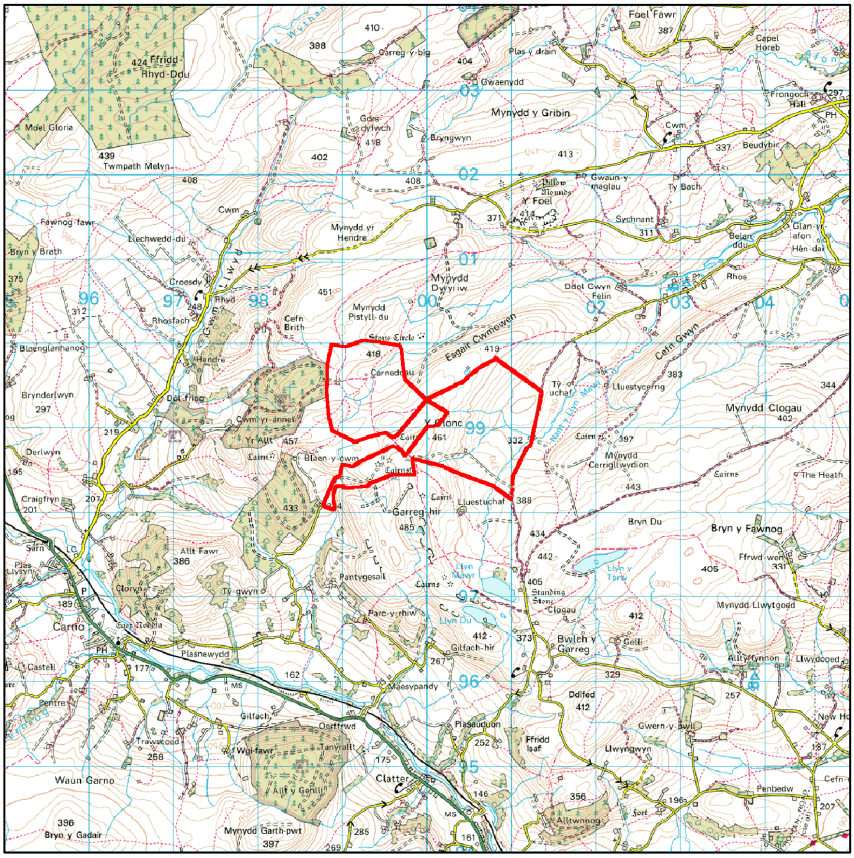

Figure 1. ECOCAS Wind Farm Location

Renewable Energy

There are many types of renewable energy including solar, tidal, bio-gas and wind. The UK Government is committed to developing these renewable energies and in particular wind which will be important for reaching targets of an 80% cut in greenhouse gas emissions by 2050, and at least a 34% cut by 2020, based on the 1990 baseline. The Welsh Assembly Government has a target of 4 Terawatt hours of electricity to be generated from renewable sources by 2010. This will require 800 MW of additional installed capacity from onshore wind resources, and 200 MW of additional capacity from offshore and other renewables.

To meet these targets for onshore wind power, wind developments have been concentrated in specific areas defined as Strategic Search Areas (SSAs). There has been much extensive technical work commissioned by the Welsh Assembly Government which has led to the conclusion that developments should be actively steered by the land use planning systems to

those areas deemed to be the most appropriate for large scale (over 25 MW) developments. These areas are set out in Technical Advice Note 8 (TAN 8) Renewable Energy. The SSA B, Carno North, which the ECOCAS Wind Farm lies within, has a capacity of 290 MW by 2010 and is one of the largest SSAs in Wales. For the Welsh Assembly Government's targets to be met and to move to a more renewable energy source, developments such as the ECOCAS Wind Farm are essential for the future.

ECOCAS Wind Farm

The ECOCAS Wind Farm will consist of 17 wind turbines each of 3 MW capacity with a maximum hub height of 80 m and a maximum blade radius of 45 m, giving an overall maximum height to the blade tip of 125 m. With each wind turbine being capable of electrical generation of up to a maximum of 3 MW, the total output from the wind farm will be up to 51 MW, depending on the prevailing wind conditions. The design and layout of the ECOCAS Wind Farm has been carried out to achieve the optimal configuration of the turbines whilst taking into account the surrounding environmental features, resulting in a controlled and balanced layout. The site plan can be seen in Figure 2.

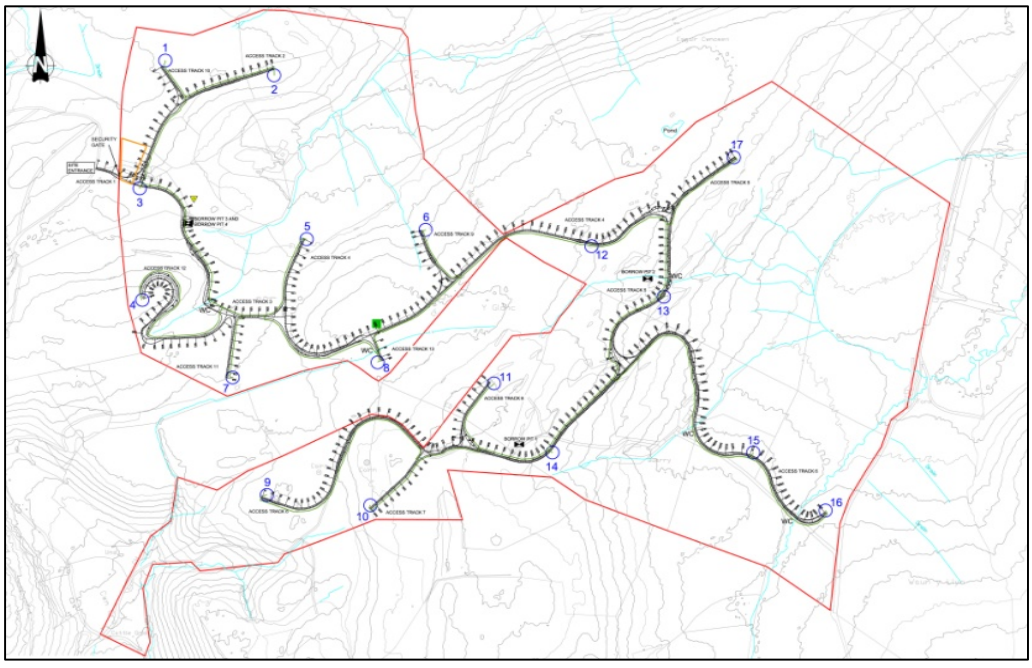

Figure 2. ECOCAS Wind Farm Layout

Planning Policy

Planning policy in the UK has recently begun to approach wind farm applications in a more positive light with an emphasis on quicker processes towards planning applications. Guidance for planning policy in Wales is set out in Planning Policy Wales (PPW) (2002) which outlines how the Welsh Assembly Government intends to "encourage the development of the renewables sector and promote energy efficiency and conservation in an economic, environmentally sound and socially acceptable way". PPW also encourages the generation and use of energy from renewable sources, especially as a means of reducing the effects of climate change.

The ECOCAS Wind Farm has followed local and national guidance during the Environmental Impact Assessment (EIA) process and these policies are detailed further in a separate Planning, Design and Access Statement.

Site Access and Transport

The construction delivery route options for the ECOCAS development were determined by detailed map evaluation and route inspections. The initial appraisals embraced every possible entry to the proposed Site, including the possibility of bringing all wind turbine equipment in by rail to Carno. The discussions and evaluations that took place resulted in the rail option being rejected due to the track, road and bridge modifications required making this option not feasible.

As a result of the rejection of the rail option, road delivery was determined as the only feasible option and detailed evaluation was undertaken comprised of three studies:

- Port of delivery (Ellsmere Port or Newport Docks) to Carno (including alternative routes and pinch point analysis)
- Carno to Site (including options and pinch point analysis)
- Mitigation of traffic flow (laybys and passing places)

Three routes to site were evaluated and route 1, which is considered to be the most suitable to carry both the blades and the nacelle, was agreed as being the 'preferred route'. There is also a possibility of delivering the blades via route 2 while the nacelle is transported along route 1 which may ease traffic flows.

The effects on traffic movement during construction of the development have also been assessed.

Ecology

Surveys undertaken on the site resulted in no rare or scarce plants, or plant species noted as priority species in the Powys or UK Biodiversity Action Plans, being found on the Site.

Following the assessment it was considered that there will be a minimal impact on the habitat and that the ECOCAS development provides an acceptable level of mitigation to protect important areas of habitat.

The Site does offer some suitable foraging and lying-up sites for brown hare in particular and are expected to still use the Site for breeding. The extent of permanent habitat loss due to the proposed development would be limited to the bases of the turbines, access tracks and other infrastructure, which would be unlikely to have an impact on the density or distribution of hares in the future.

A precautionary approach has been recommended when carrying out site works to ensure that all species are conserved. Following the assessment it was considered that the ECOCAS Wind Farm will have a minimal impact on mammals and reptiles.

Bats

The proposed ECOCAS Wind Farm may have a negative impact upon bats through the following:

- Loss of habitat during construction of the turbines
- The presence of rotating turbine blades could disrupt bat flight and cause injury to the bats
- By indirect impact through ultrasound emissions, altered air pressures and/or air flows in the vicinity of the turbines

Surveys on the Site determined that the bat species foraging on the Site appear to be the smaller more agile species, which are likely to forage closer to the ground, that is below 5 m. During construction there will be some disturbance due to habitat loss although the negative impact on those species foraging on the Site is deemed to be low. Noctule bats were also recorded commuting across the Site, and were regularly recorded using the valley on the eastern edge of the Site in the vicinity of proposed turbine 16. These bats fly and forage at heights of greater than 10 m, and therefore the proposed turbines may disrupt their flight paths or commuting routes. The larger Nyctalus and Eptesicus species can

commute long distances between summer and hibernation roosts, which could have an effect on the population if the Wind Farm Site is on a traditional migratory route. Since these bats forage over a wide area, displacement would have a minor negative impact on those individuals resident near the Site.

Cumulative Impacts on Bats

At the time of the assessment, four proposed and four operational wind farms were identified. Many of the operational wind farms did not appear to have conducted any bat surveys prior to construction because the effect of wind farms on bats was not fully understood. The surveys undertaken at ECOCAS identified at least four species of bats not recorded by other consultancies. The majority of these calls were identified on the Anabat static recorders not used at any other site. These static recorders also picked up much higher levels of activity than were picked up by the transect surveys. The boundaries of the sites provide much better foraging and roosting opportunities than the exposed uplands. The most risk is for high flying bats such as noctule, but as these were not recorded in other surveys it is difficult to assess the extent of use in the area.

Birds

The ECOCAS Site was surveyed during 2007 and 2009 to assess the impact of the proposed ECOCAS Wind Farm on birds flying over and breeding on the Site. According to the results, birds appeared to be randomly distributed over the Site, with no obvious regular flight lines noted. Vantage point surveys, along with records of over flying birds noted during the walk through surveys, indicated fairly low levels of aerial activity by birds considered to be vulnerable. Therefore, the ECOCAS Wind Farm will not have a significant impact on birds flying across the site. For birds breeding on the Site the majority of species identified are unlikely to be impacted on by the ECOCAS Wind Farm. The Site does have high potential for two nationally important species, Nightjar and Merlin. Targeted surveys in 2007 found no evidence of Nightjar, however during a bat survey on the eastern edge of the Site a nightjar was observed. Nightjar has not been shown to be breeding on Site, although suitable habitat is present. Potentially Nightjar could be at risk from collision with the turbine

blades, although given the location of the turbines in relation to the suitable habitat, this is considered to have a negligible impact. During the targeted surveys in 2007 for Merlin no evidence was observed. However, during the April 2009 surveys one male Merlin was observed. This was the only bird observed and no plucking posts or evidence of nesting was found. Since Merlin have large ranges and fly up to 9 km from the nest it is more likely that the species is not breeding on the Site and therefore the ECOCAS Wind Farm would have a limited impact. Following the assessments it was considered that there would be a minimal impact on the bird species and that the ECOCAS development provides an acceptable level of mitigation to protect those bird species breeding on the Site and flying across it.

Cumulative Impact on Birds

At the time of this assessment eight proposed/operational wind farms within a 20 km radius of the ECOCAS Site were identified. The older wind farms do not appear to have carried out any baseline surveys for birds prior to construction. A collision risk model for Red Kites was run at Mynydd Clogau and Tirgwynt and returned similar results at both sites with approximately one bird killed every 3 years at 98% avoidance or every 6 years at 99% avoidance. A similar figure can be assumed for ECOCAS (due to its location and similarity of size) therefore, it can be estimated that one bird will be killed each year at 98% avoidance or every two years at 99% avoidance, across the three wind farms. At this level of mortality the collision rate in the wider 20 km area can be estimated at 3.6 birds per year. Nightjars were not recorded at any other wind farm site, although specific surveys were not undertaken and they could be present but not recorded. A cumulative assessment could not be undertaken due to the lack of information from other sites.

The issue of displacement or disturbance to bird species appears to have not been addressed at other sites due to the abundance of similar habitat locally. However, given the number of wind farms operational or proposed within 5 km of ECOCAS, there may be insufficient habitat of suitable quality to avoid an impact to some of the bird species.

Hydrology

Studies were undertaken on the Site to determine the potential effects of the proposed Wind Farm on surface waters,

groundwater, drainage, areas of peat, private water abstractions and flood risk. A site visit was carried out on the 20th January 2009 which was attended by representatives of the Environment Agency (EA), Countryside Council for Wales (CCW) and Powys County Council (PCC). The areas on the Site proposed for water crossings were inspected and advice was given on best practice by the EA. It was determined that 20 m buffer zones around every watercourse on the Site should be adhered to and that areas of sensitive peat should be avoided where possible. An additional survey was carried in February 2009 under the advice of the EA and CCW to determine the extent of blanket bog on Site using canes to measure the peat depth at site specific locations, particularly concentrating on the most sensitive areas on the Site.

The assessments carried out identified the potential receptors within and around the Site as well as activities that will need to be controlled to avoid potential negative effects on the water environment. Construction will need to be sensitive to the hydrological environment, therefore it may be preferable to use floating roads rather than excavated roads and natural drainage paths should be facilitated wherever possible to avoid the cutting off or drying of areas of peat. The main risk to the Site is from surface runoff which is likely to increase as a result of the additional hard standing areas and also from increases in future rates of rainfall due to climate change. Mitigation and management of surface runoff will be achieved through the inclusion of sustainable drainage systems which will limit the discharge of water and sediment across and from the Site.

Landscape and Visual

Assessments have been carried out to identify the impact of the Wind Farm on the landscape and views around the Site. The study area has been set to just over 30 km covering a wide variety of landscapes and view points. In total, 17 viewpoints were carefully identified to portray the Wind Farm as it would be seen at specific locations. Within the immediate area the Wind Farm will be visible although the hills and vegetation will screen some of it from view during the year. Further afield the Wind Farm is barely noticeable due to the large distance between the viewpoints and the Wind Farm.

There are a number of proposed and built Wind Farms in the area and consideration has been given to these in the cumulative assessment.

Archaeology and Cultural Heritage

A comprehensive Report (Base Report), an Assessment of Significance of Impact of Development on Historic Landscapes (ASIDOHL2) and an assessment of visual impact on the Historic Landscape (HLVA) was carried out at the ECOCAS Site.

The Base Report located a number of archaeological features although relatively few of these are close to the proposed turbine locations. Therefore, where the proposed turbine locations are close to archaeological features, and if movement of specific turbines should not prove possible, then further archaeological recording work prior to construction will be required.

The results of the assessments confirm that the significance of the impact on the registered Historic Landscape as a whole is considered to be slight and this is also supported by the staged ASIDOHL2 assessment.

Noise

A noise assessment was carried out on the Site following guidance from Paul Bufton at Powys County Council who agreed that based on indicative results that an assessment in line with the ETSU-R-97 Guidance 'The Assessment and Rating of Noise from Wind Farms, Department of Trade and Industry (1996)', Simplified Assessment Method (Section 6) would be satisfactory. The results from the assessment at the ECOCAS Wind Farm confirm that at the potentially affected receptors the noise levels are within the accepted range.

Other

The Ministry of Defence and other consultees have not raised any objections to the proposed development.

Consultation with Ofcom also resulted in no objections to the proposed development as there are no communication links within the vicinity that may potentially have been affected by the turbines.

The responses from consultation and the assessments carried out all indicate that the ECOCAS Wind Farm will have no impacts on aircraft radar, telecommunications, or television reception.

An assessment of the shadow flicker effect at potentially affected locations around the Site confirmed that there would not be a significant impact.

Conclusion

The non-technical summary outlines all of the findings from the Environmental Impact Assessment process for the proposed

ECOCAS Wind Farm. More in-depth details on the project can be found in the accompanying Environmental Statement and Appendices.

Although the project is likely to have some impacts on the environment these have been addressed and mitigation measures proposed. The impact of the ECOCAS Wind Farm on the surrounding environment has been shown not to be significant and therefore it is considered to be an appropriate onshore wind development.

Copies of the full Environmental Statement and accompanying Appendices have been distributed to the Department of Energy and Climate Change (DECC) and other key consultees. Copies are available at the following locations for public inspection:

Powys County Council Planning Office, Neuadd Maldwyn, Severn Road, Welshpool, SY21 7AS.

Powys County Council Planning Office,
The Gwalia, Ithon Road, Llandrindod Wells, LD1 6AA.

Newtown Library, Park Lane, Newtown, Powys, SY16 1EJ.

Copies of the full Environmental Statement and Appendices can be purchased for £30 for the DVD or £400 for a hard copy from:
Independent Power Systems Ltd, Canada House, 272 Field End Road, Eastcote, Ruislip, HA4 9NA.

A copy of the Non-Technical Summary can also be downloaded free of charge from the Independent Power Systems website: www.independent-power.co.uk/ecocas/