

west
coast
energy



Blantyre Muir Wind Development
Environmental Statement
Non Technical Summary

Introduction

Blantyre Muir Wind Energy Ltd proposes to develop a wind development, located approximately midway between Hamilton and East Kilbride, within South Lanarkshire Council District. A Planning Application for the proposed 'Blantyre Muir Wind Development' has been submitted to South Lanarkshire Council for consent under the *Town and Country Planning (Scotland) Act 1997*.

The Blantyre Muir Wind Development application seeks consent for the installation of up to 3 wind turbine generators and associated ancillary development. The development will have a maximum total generating capacity of up to 9 Megawatts (MW).

The proposed Blantyre Muir Wind Development is the subject of a formal Environmental Impact Assessment (EIA), which has been fully documented in an Environmental Statement (ES). The ES was prepared by West Coast Energy on behalf of Blantyre Muir Wind Energy and submitted to the Council in support of the planning application. This document is a Non Technical Summary of the ES, providing an overview of the proposed development, its potential environmental effects and proposed mitigation measures.

The Applicant

Blantyre Muir Wind Energy Ltd (BMWEL) is a subsidiary of West Coast Energy Ltd (WCE), a privately owned wind energy and environmental consultancy company. BMWEL and WCE are registered in England and Wales, with offices in Scotland, working to develop wind energy projects for the generation of Renewable Obligation Certificates (ROCS) in Scotland.

WCE are acting as agents to manage the application process on behalf of BMWEL.

Established in 1996, West Coast Energy has developed a reputation as one of the most successful independent service providers, having successfully managed the completion of planning consent for fifteen individual wind developments across the UK, representing more than 450 MW capacity and have potential sites equating to some 500 MW at various planning and preparatory stages. BS ISO 9001:2000 accredited, WCE provide consultancy within environmental, planning, technical, socio-political and commercial issues surrounding wind energy development

The Environmental Statement

The scope of the ES followed guidance from the Scottish Executive, South Lanarkshire Council and other statutory and non-statutory agencies. The ES contains the environmental information required for the determination process of the Blantyre Muir Wind Development proposal. The ES is structured as follows:

- Volume 1-Environmental Statement – Written Text;
- Volume 2 - Appendices;
- Volume 3 - Maps and Figures; and
- Non-Technical Summary (NTS)

This NTS includes inserts of Figures 1, 2, 7.9.1, 7.9.4, 7.9.7 and 7.9.8 from Volume 3 of the ES.

Climate Change

It is now widely accepted that the current rate of climate change, primarily caused by the combustion of fossil fuels, is one of the most significant threats confronting all living systems on Earth in the coming decades. Current levels of carbon dioxide in the atmosphere are about a third higher than they were before the Industrial Revolution.

Around 72% of the electricity generated in the UK is supplied by fossil fuel power stations i.e. coal, oil and natural gas with 20% being generated from nuclear energy and 5% from renewable energy.¹

Within the UK, climate change may have the following impacts:

- Extremes in weather, with dry areas becoming drier and wet areas wetter. For example, since 1961 Scotland has become wetter with an average increase of almost 60% in winter months in northern and western Scotland;²
- Increased bouts of flooding to communities;
- Increased erosion to coastal land and defences, leading to greater flooding threat to coastal townships and loss of rare habitats;
- Significant alteration of ecosystems (habitats) which will threaten about half of the statutory protected areas in the UK within 50 years.

The Stern Report³ on climate change economics stated "*Climate change is the greatest market failure the world has seen ... unabated climate change could be equivalent to 20% of GDP or more.*"

¹ DTI, July 2006, The Energy Challenge

² Scottish Executive, March 2006, Scottish Climate Change Programme: Changing Our Ways

³ Treasury, Oct 2006. Stern Review on the Economics of Climate Change
http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2006/press_stern_06.cfm. Accessed on 07.11.06.

The Energy Challenge Report⁴ states there are two immense challenges to the UK – security of energy supply and climate change. Renewable energy, and wind energy in particular, meets both these challenges as it is independent of outside fuel sources and serves to reduce greenhouse gas emissions by decreasing dependency on fossil fuels. Renewable energy therefore has a major part to play in helping the UK and Scotland avoid over dependence on imports and make the Country less vulnerable to security threats to energy supply from foreign sources.

Wind Energy in Europe

The UK, and Scotland in particular, has the biggest wind resource in Europe, statistics show the UK currently lagging significantly behind many of the other EU members for installing new renewable energy capacity.

Wind Energy in Scotland/UK – Government Targets

The Scottish Executive and UK Government are all strongly committed to developing wind power and other renewable technologies. A market-based support mechanism for renewable energy has been introduced and this places an obligation on electricity suppliers to buy an increasing proportion of electricity from renewable energy sources. In Scotland, this mechanism is called the Renewables Obligation Scotland and in England and Wales, it is called the Renewables Obligation.

The UK has a target of 10% of electricity to be generated by renewable sources by 2010. Achieving the 10% UK target is expected to result in annual savings of around 2.5 million tonnes of carbon emissions by 2010. The Scottish

⁴ DTI, July 2006, *The Energy Challenge – Energy Review Report*. URN No: 06/1576x

Executive has also signalled its intent to achieve a 40% contribution from renewable energy by 2020.

Blantyre Muir Wind Development Location

The proposed Blantyre Muir Wind Development is situated entirely within farmland, approximately midway between East Kilbride and Hamilton, being approximately 2km from the outskirts of both (Figure 1). The centre point of the site occurs at approximately NGR: 267500E 653000N (1:50,000, OS Landranger Sheet 64).

Site Selection

The selection of an appropriate site with the potential to support a wind development is a complex and lengthy process. The Blantyre Muir site was selected as appropriate to support a wind development due to the following attributes:

- The mean annual wind speed across the majority of the site exceeded 7 ms⁻¹;
- The site does not support any national ecological or landscape designations;
- The site is not located within any aviation or military safeguarding zones;
- The site is sufficiently distant from properties for potential noise effects to be minimal;
- Connection to the electrical grid would be feasible;
- Landowners have agreed to the proposal; and
- The site lies within 'Zone 1', an area deemed as offering "the greatest opportunity" for wind development proposals, as per SNH Locational Guidance for Onshore Windfarm Development.

Further detailed assessment and consultations with the Council, consultees and interested parties have tended to be in accordance to these initial conclusions.

Project Description

The design of the wind development was a dynamic process, the aim of which was to evolve a wind development which was visually sympathetic and sustainable with the surrounding environment. The iterative design process was underpinned by a continuous process of site evaluation, environmental appraisal, and repeated consultations with relevant organisations. The final layout of the Blantyre Muir Wind Development, shown in Figure 2, incorporates environmental and engineering considerations to inherently avoid potentially significant environmental impact. The planning application area of 131 hectares (ha) contains a development footprint of 2.1 ha (1.6% of the total site planning application area).

Each of the 3 turbines will have an overall height of up to 111m. Each turbine is mounted on a tapered tubular steel tower and consist of a nacelle containing the gearbox, generator and associated equipment (e.g. transformer) to which are attached a hub and rotor assembly including three glass fibre-reinforced polyester blades.

The potential generation capacity of the wind development will be up to 9 Megawatts (MW), based on 3 turbines each having up to 3 MW rated generation output. Power from the individual turbines will be transmitted along underground cables to the on-site control buildings.

Ancillary development includes: new access track, upgrading existing track, underground electricity cable network, temporary crane hardstandings adjacent to each turbine, temporary construction storage areas, one 71 metre anemometer mast, and a site control building (substation).

The connection from the site substation to the local electricity grid would be the subject of a separate application under Section 37 of the *Electricity Act 1989*.

Wind Development Construction and Operation

Construction of the proposed wind development is anticipated to commence late 2009, subject to the consideration time period within the local planning system. The on-site construction phase is typically up to six months for a project of the scale proposed.

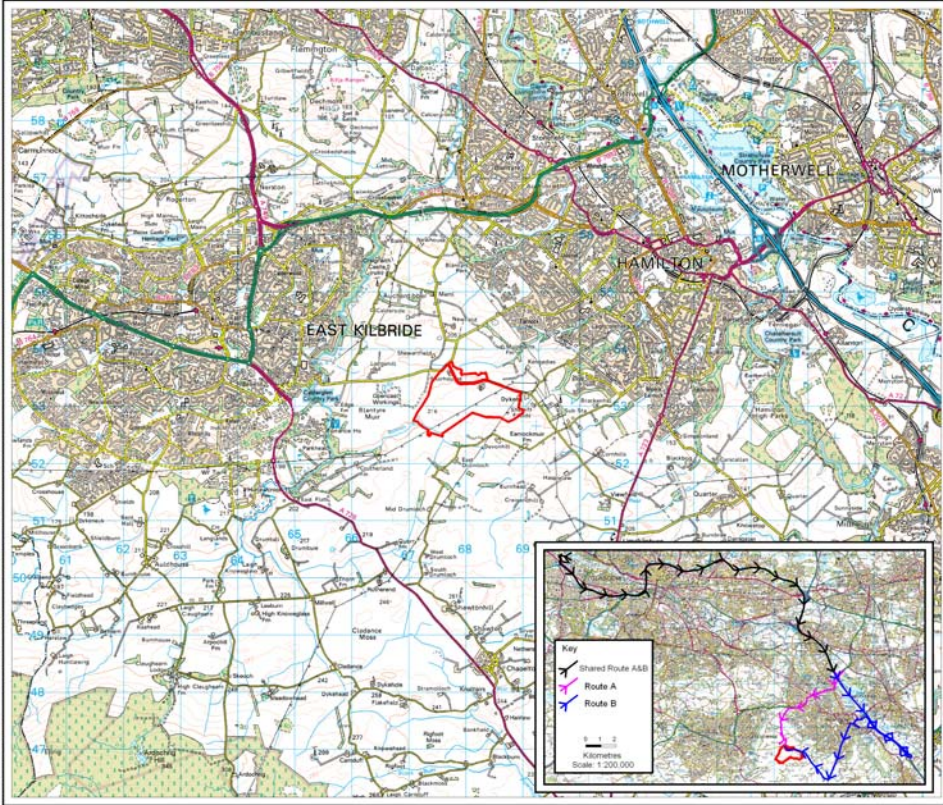
The construction programme will consist mainly of the following operations:

- Siting of temporary site office and storage area (compound) for wind development components and temporary site facilities etc;
- Construction of site access tracks to wind turbine locations for use by civil engineering plant and construction equipment;
- Construction of wind turbine foundations and hardstand areas;
- Excavation of cable trench and cable laying;
- Construction of control building;
- Erection of wind turbines;
- Connection of on site electrical power and signal cables;
- Commissioning of the site equipment; and
- Site reinstatement and restoration.

Approximately 1.2km of new on-site access track will be required to provide full transport access to the 3 turbine locations, as well as upgrading works for up to 361 metres of existing site track. The layout of on-site access tracks has been designed to avoid sensitive environmental constraints, following existing tracks within the site where possible.

Stone aggregate material is required for track construction, crane hardstanding, control building hardstanding, turbine foundations and the temporary compound/office hardstandings.

Reproduced from the Ordnance Survey Maps with the permission of the Controller of Her Majesty's Stationary Office. Crown Copyright reserved. Licence No. AL 100020007 (West Coast Energy)



Blantyre Muir Wind Development

Key

- Application Boundary

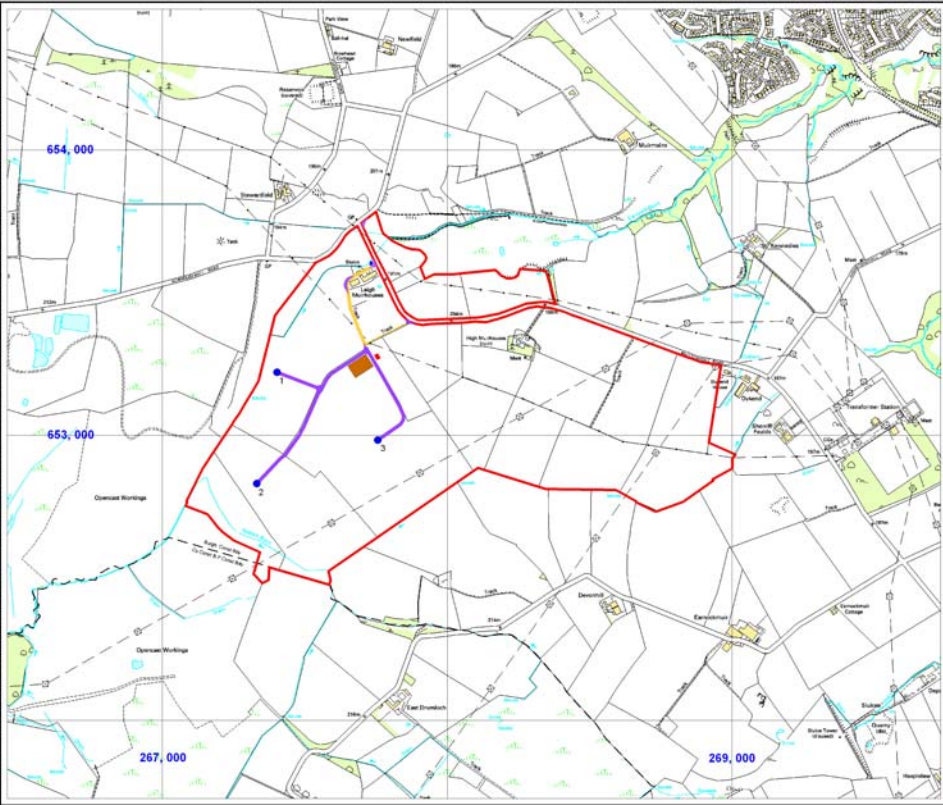
0 1 2 3
Kilometres

Scale: 1:50,000

Figure 1
Site Location & Abnormal Transport Access

Drawn by: CR 04/06/2007
Checked by: LE 1078/E3/060a
Approved by: FM

Reproduced from the Ordnance Survey Maps with the permission of the Controller of Her Majesty's Stationary Office. Crown Copyright reserved. Licence No. AL 100020007 (West Coast Energy)



Blantyre Muir Wind Development

Key

- Application Boundary
- Turbine Location
- Compound Area (To Scale)
- Substation
- Site Office
- Proposed Access Track
- Existing Access Track
- Existing Track Access (option)

0 250 500
Metres

Scale: 1:10,000

Figure 2
Site Layout Plan with Application Boundary

Drawn by: CR 19/06/2008
Checked by: LE 1078/E3/2142/01
Approved by: FM

7.9.1: Viewpoint: 1 Lodgehill



7.9.4: Viewpoint: 4 Devonhill



7.9.7: Viewpoint: 7 Limekilnburn



7.9.8: Viewpoint: 8 East Kilbride (Recreational Ground)



Construction Transport

Site Entrance

There are two existing site entrance options along Muttonhole Road, associated with Laigh Muirhouses, both of which are viable considerations (see Figure 2).

Transport Route

A preliminary Highway Transport Feasibility Study (HTFS) assessed two route options (Routes A & B) for abnormal loads (turbine components).⁵ Transport would commence from the King George V Docks in Glasgow along the M8, M73, M74 and then right onto A725 (option A) or A723 (option B) to the proposed site entrance (see Figure 1).⁶

The HTFS concluded that Route B, along the A723, offered the most practicable access, due to less remedial and accommodation works required en-route. This would be subject to agreements for use of facilities and necessary amendments to the route with both third-party land owners and public road authorities.

Abnormal load transport (turbine components, mobile cranes) would be normally timed during off-peak periods in order to avoid delays to other road users and would be escorted by the police. The maximum individual axle weight of the exceptional vehicles will be 15 tonnes. The speed of these vehicles is low and it is not anticipated that any strengthening to existing roads will be required. There are no current weight restrictions.

All other (standard) HGV traffic related to the project will utilise the local road network, subject to detailed consultation and agreement with the local council roads department and local community.

All route options would result in a temporary but not significant increase in general HGV traffic levels and would be subject to detailed consultation and agreement with the local council roads department and local community. Where practicable, construction material requirements (concrete stone aggregate, sand, cement) would be sourced from the nearest local suppliers.

Any potential upgrading works to local public roads will be subject to approval from South Lanarkshire Council planning authority. These road works would be consented separately under The Roads (Scotland) Act 1984, if required by South Lanarkshire Council. A pre-construction baseline survey would be undertaken and the road restored to the same condition on completion of construction works. Measures to minimise disruption, delay, noise and vibration caused by construction deliveries will be outlined within a Transport Management Plan, submitted as part of post consent planning conditions.

⁵ Abnormal or Exceptional Loads refers to transport of turbine components (blades, nacelle and towers) and heavy cranes.

⁶ Colletts (November, 2006). Visual Route Inspection Report Number: 167627. Blantyre Muir Hill Wind Farm.

Transport Volume

During the construction period, there will be three types of traffic accessing the site – exceptional loads, conventional HGVs, and the vans and cars of construction staff.

The total number of HGV vehicle loads associated with the six month construction period of the wind development is estimated at up to 1,240, comprising up to:

- 1, 211 HGV loads (which includes concrete delivered to site); and
- 29 abnormal transport deliveries.

Based on 20 working days per month, the average figure of load deliveries is around 10 HGV vehicle arrivals per working day.

In terms of Abnormal HGVs, it is only the delivery journey of turbine components that is classified as an abnormal load. On the return journey the extendable trailers would be contracted to become normal HGV traffic.

Project Benefits

The Blantyre Muir Wind Development has the potential to:

- Produce enough clean electricity to power the needs of 12,078 people (i.e. 5,032 domestic homes; approximately 25% of homes in Hamilton);⁷
- Over its anticipated operational life of 25 years displace the emissions of over 0.5 million tonnes of carbon dioxide (20,341 tonnes per annum);
- Provide local employment and income to South Lanarkshire; and

- Assist South Lanarkshire to contribute further to Scotland's 2020 target of 40% renewable energy.

The total capital and construction costs of the Blantyre Muir Wind Development is expected to cost around £9 million. This would require significant investment within and around the South Lanarkshire region. The provision of site facilities, concrete foundations and access roads together with general civil engineering and technical services would benefit local companies, contractors and their employees. Previous experience suggests that 20-30% of the project's value is available for local construction companies to tender with additional indirect expenditure in local shops, hotels, service stations etc. Blantyre Muir Wind Energy would adopt a policy to utilise, when practicable, local contractors for construction, operation and maintenance work.

Up to 30 personnel will be directly employed during the estimated six month construction period. Once operational, there will also be a requirement for maintenance engineers to undertake site supervision and maintenance.

⁷ Population of Hamilton is 48,546 Population statistics from SLC Website http://www.southlanarkshire.gov.uk/portal/page/portal/EXTERNAL_WEBSITE_DEVELOPMENT/SLC_ONLINE_HOME/SLC_THE_AREA/AREA_PLACES?CONTENT_ID=1769.

Environmental Impact Assessment (EIA)

Early consultations with the planning authority identified the key environmental issues to be considered in determining the planning application. These are fully addressed in the Environmental Statement (ES) which includes reports on landscape and visual amenity, cultural heritage, ecology, hydrology, noise, soils, transport/access, safety, and the effects of the proposal on television and other communication systems. Each EIA covered all aspects within the phases of construction (associated earth works for turbines, hardstandings, tracks, cable trenches, restoration), operation and decommission. The main conclusions of the EIA reports are summarised below.

Cultural Heritage

Thirty-three sites of cultural heritage significance interest have been identified by the assessment within the proposed development site, using a range of desk-based sources, consultations and a field study. The identified sites are all considered to be of local or lesser importance and no significant effects are predicted on any of the sites.

Twelve sites in the wider landscape are predicted to receive a potentially adverse indirect visual effects on their settings from the proposed wind development. None of these adverse effects are considered to be significant. Sixty-eight other sites in the wider landscape are predicted to receive indirect visual effects on their settings that are considered to be neutral and not significant.

Landscape and Visual Impact

The Blantyre Muir Wind Development layout has been designed to create a '*simplicity of image*' that could enable the proposal to be considered as an aesthetic object in design terms.

The landscape and visual effects from the proposed development at Blantyre Muir are notably limited. The number of visual receptors significantly affected is low. The significant effects are limited to a very small number of dwellings located very close to the Site.

Even where significant effects are predicted, effects on the landscape character of the locality are limited. The landscape quality is low and the character not highly sensitive to the proposed development.

The site lies in a landscape character area called Plateau Farmlands. The Plateau Farmlands were judged (in an SNH wind farm capacity study) to be of the 'lowest [landscape] value'.⁸

Scottish Natural Heritage (SNH) Locational Guidance for Onshore Windfarm Development shows the Blantyre Muir Site falling within an area assessed as being of the lowest natural heritage sensitivity (Zone 1), category.⁹ Zone 1 is an area deemed as offering "the greatest opportunity" for windfarm proposals, with due regard to cumulative impact.

Other sites which at present have been submitted to the planning authority for planning permission, but not yet approved, are unlikely to be significant in relation to Blantyre Muir.

⁸ SNH Commissioned Report No. 065 - Ayrshire and Clyde Valley windfarm landscape capacity study (2004).

⁹ SNH (2005). Strategic Locational Guidance for Onshore Windfarms in Respect of Natural Heritage Interest. May 2005. Scottish Natural Heritage.

Cumulative (visual coalescence and compositional grouping) effects were assessed from three representative viewpoints. The significance of these effects was limited to a Minor degree. The cumulative (sequential) effects were limited to a Negligible degree of significance.

The functional relationship between the local landscape and the proposed wind development means the capacity for this type of development is not exceeded.

Montage Figures 7.9.1, 7.9.4, 7.9.7 and 7.9.8, from Volume 3 of the Environmental Statement, have been included in this NTS to illustrate the range of predicted views of the proposed wind development.

The resultant significant landscape and visual effects of the proposed Blantyre Muir Wind Development would be localised and its design respects the scale, composition, character and quality of the wider landscape setting.

Ecology

A desk study and Phase 1 habitat survey were completed over the entire study area. National Vegetation Classification (NVC) surveys were undertaken on areas of particular interest. Protected mammal species surveys were also undertaken for the presence of badger, otter, water vole, and bats

No part of the development area lies within a designated conservation site; the Blantyre Muir SSSI lies within 500 m of the western site boundary. No direct impacts on the Blantyre Muir SSSI are expected during the construction period due to the distance from the development area. No indirect impacts to the hydrology of the SSSI are expected (e.g. pollution, runoff or sedimentation) following

implementation of mitigation measures. The majority of the site (75% of area) is species-poor improved grassland, which is managed for grazing livestock. Marshy grassland covers most of the remainder of the development area (24.6%).

No significant impacts on the habitats or species identified in the development area are expected during construction, operation or decommissioning of the proposed development.

Birds

One internationally important raptor, peregrine, was present but not breeding in the development area. No significant impacts on peregrine are predicted to occur within the development area. Collision risk assessment showed that there would be no significant collision risk to peregrine (i.e. one collision every 91 years).

From the studies conducted, it is concluded the development area is located in an area of low bird sensitivity, and the selected location of this site has ensured that there will be no significant impacts on populations of important or sensitive bird species.

Hydrology

There are no known private water supplies within or near the development site and no Scottish Water infrastructure was identified as being potentially affected by the wind development. All surface watercourses and the Rotten Calder and Clyde fisheries have been identified as the most sensitive receptors to the wind development. Potential impacts include chemical pollution and/or erosion and sedimentation.

Potential impacts on geology, soils and hydrology as a result of the construction phase of the development will be mitigated by the implementation of best construction practice measures and SEPA guidelines. Accordingly, no significant threats to surface water, groundwater, private water supplies or soil resources in the area have been identified as a result of the proposed development. Mitigation measures for all construction works will be outlined within a site Pollution Prevention Plan, as part of the Construction Environmental Management Plan to fulfil planning consent conditions.

With adoption of the proposed mitigation measures the wind development has been assessed as having the potential to give rise to adverse impacts of **minor** significance or lower in relation to soils, geology, hydrology and hydrogeology.

Noise

An assessment of the noise impact, due to the operation of the proposed Blantyre Muir Wind Development, on residential properties in the surrounding area was carried out.

The noise assessment has been carried out according to ETSU-R-97, *Assessment and Rating of Noise from Wind Developments*, as referred to in PAN45, *Renewable Energy Technologies*.

Predictions of the worst-case noise levels likely to result from the operation of the wind development were carried out, based on the proposed site layout and using the noise characteristics of a Vestas V90 3MW turbine optimised for low noise operation.

The assessment shows that predicted noise levels would meet the ETSU-R-97 night-time noise limits and lower day-time noise limits, or land owner limits as appropriate, under all conditions.

Noise from on-site construction noise plant will be below published criteria for the assessment of noise from construction sites. Noise from increased traffic flow due to construction vehicles will be insignificant based on likely levels of existing traffic flow on local roads leading to the site entrance.

Interference with Television, Radio and Microwave Paths

Consultation with communications agencies was undertaken to predict the potential for disturbance to communication systems as a result of the proposed wind development, including those used by the emergency services and mobile telephone services providers. All relevant organisations have indicated that the Blantyre Muir proposal would not cause interference with their apparatus, broadcasts or operational interests. Therefore, no known television or telecommunication links would be affected by the proposed development.

Shadow Flicker

Analysis has shown that the proposed Blantyre Muir turbines would not impose a potential nuisance or clinical disturbance upon neighbouring properties from shadow flicker.

Aviation

BAA/Glasgow Airport have expressed concern that the proposed Blantyre Muir turbines could result in the appearance of clutter on connected radar screens. The Aerodrome Reference Point for Glasgow Airport lies approximately 24km North West from the proposed Blantyre Muir turbines.

Aviation radar impact assessments commissioned by West Coast Energy Ltd indicate there are appropriate mitigation options to overcome existing concerns regarding effects to radar screens and airspace safeguarding interests, in respect of Glasgow Airport.

The applicant Blantyre Muir Wind Energy Ltd would be willing to agree with South Lanarkshire Council planning authority and BAA/Glasgow Airport that planning consent for the Blantyre Muir Wind Development would be conditional upon appropriate mitigation measures for aviation being implemented prior to construction of the wind development.

Public Safety

There is no recorded incident of a member of the public being injured by a wind turbine. The Government has deemed wind energy as a 'safe' technology, requiring no special safety provisions. Experience has shown that livestock are undisturbed by the movement of the blades and will graze underneath them as well as using the towers for shelter in bad weather.

The wind turbines are designed and manufactured to withstand weather conditions at least as extreme as those which arise in the United Kingdom, in terms of wind speed, turbulence and temperature. The wind turbines are equipped with safety systems, which will automatically shut down the machine on the occurrence

of such events as loss of electrical connection or excessive blade speed.

Appropriate steps will be taken to ensure the safety of members of the public during the construction process and operation and maintenance of the wind development.

Conclusion

National and local planning policy currently provides for a presumption in favour of renewable energy projects unless a particular proposal would cause demonstrable harm to interests of acknowledged importance. The main issue to be considered is whether benefits to be gained from exploiting a clean sustainable energy resource outweigh any perceived impact on changes to views, landscape character, ecology or residential amenity.

The proposed Blantyre Muir Wind Development would be an acceptable inclusion within the East Kilbride and Hamilton area for the following reasons:

- The site will make a considerable contribution to national renewable energy targets;
- The specialist environmental impact assessment (EIA) studies of the proposal have concluded there would be no potentially significant adverse impacts, following best practice construction guidelines and methodologies;
- The landscape quality is low and the character not highly sensitive to the proposed development;
- The site lies within an area ('Zone 1') favoured by SNH for wind development. 'Zone 1' is defined as an area offering "the greatest opportunity" for wind development proposals, as per SNH Locational Guidance for Onshore Wind Farms.

- No statutory designations are directly affected by the proposed development;
- The potential to produce enough clean electricity to power the equivalent of around 25% of homes in Hamilton;
- Over its anticipated operational life of 25 years displace the emissions of up to 0.5 million tonnes of carbon dioxide;
- Support local employment and income to the East Kilbride and Hamilton area. Local construction firms will be able to bid for around £1.5 million;
- Mean annual wind speed across the majority of the site exceeds 7 metres per second;
- Does not affect any statutory landscape designations;
- Does not affect any cultural heritage interests or historic environment settings;
- Does not affect any transmission or microwave signals;
- Is sufficiently distant from properties for potential noise effects to be minimal;
- Local connection to the electricity grid; and
- The site has good road transport links.

In conclusion, the Blantyre Muir Wind Development proposal is appropriate in terms of both design and location, as evidenced by the findings of the full environmental impact assessment and existing Development Plan policies of South Lanarkshire.

Further Information

If you would like to find out more about the Blantyre Muir Wind Development proposal, you can read the full Environmental Statement at:

- **South Lanarkshire Council.** Hamilton Area Office, Floor 4, Brandon Gate, 1 Leechlee Road, Hamilton
- **St Leonard's Library.** St Leonard's Square, East Kilbride G74 2AT. Contact Tel: (01355) 241573 ;
- **Hamilton Town House Library.** 102 Cadzow Street, Hamilton ML3 6HH. Contact Tel: (01698) 452122.

Copies of the full Environmental Statement documentation can be purchased for £150.00 (CD copies will be charged at £20) from West Coast Energy Ltd, at the contact details below:

West Coast Energy Ltd,
The Long Barn,
Waen Development,
Nercwys Road,
Mold,
Flintshire. CH7 4EW
Fax 01352 700 291
Email:

enquires@westcoastenergy.co.uk