HALLBURN WIND FARM ENVIRONMENTAL STATEMENT

NON TECHNICAL SUMMARY
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NON TECHNICAL SUMMARY OF THE ENVIRONMENTAL STATEMENT

THE SCHEME

REG Windpower Ltd is seeking planning consent for the construction of the proposed Hallburn Wind Farm (hereafter referred to as ‘the Scheme’) on a site near Longtown, Cumbria. The Scheme will have a generating capacity of approximately 12 megawatts, and will be operational for a 25 year period.

The application site is located at Hallburn Farm, which is currently used as arable / pastoral farmland. The site comprises an old airfield and is therefore considered to be brownfield land. The planning application boundary covers an area of approximately 13.86 hectares.

In summary, the Scheme will comprise:

• Six wind turbines (with a maximum tip height of 126.5 metres)
• A control building
• A temporary site compound / storage area
• Crane hardstandings and outrigger pads
• An access track leading to the site and internal access tracks linking the turbines
• Underground electrical cables

The Scheme will also require a connection to the local electricity distribution network. The 33 kV Carlisle – Spadeham line from which the connection into the Scheme will be made actually crosses the application site.

In order to facilitate access to the application site for the delivery of the wind turbines, some minor modifications to the local road network would be required. All of the works that fall outside of the application site boundary will be within highway limits and no significant effects are anticipated.

Site Selection

In identifying the application site, a comprehensive constraints based search was undertaken. Out of this process, the application site has been selected for the following reasons:

• Good wind resource
• Suitable site size enabling significant benefits in terms of generating electricity and cutting climate change emissions
• Absence of significant environmental constraints (based on the feasibility work undertaken)
• Good access to the application site
• Close to a potential grid connection point
• Relatively sparsely populated
• Site offered good pre-existing internal infrastructure
Design Strategy
The design process has involved a combination of environmental design and engineering to provide an appropriate compromise between maximising energy capture and achieving acceptable design, primarily in terms of landscape and visual effects, ecology and archaeology and built heritage. In addition, a range of constraints are present on site which have shaped the final layout of the Scheme. Overall, the turbine layout has been through several changes, with the total number, position and height of the turbines altered as consultation and environmental studies progressed.

In addition to the turbines, the internal access track layout, control building and access points have also been considered to account for on-site constraints and identify the best-fit available for the application site.

The site selection process and the design process have resulted in a Scheme which:
• Avoids international and nationally designated areas (e.g. Site of Special Scientific Interest, Area of Outstanding Natural Beauty)
• Minimises landscape and visual impact, whilst seeking to obtain a balance with renewable energy generation
• Is guided by industry best practise in terms of spacing turbines to reduce inter-turbine turbulence
• Considers and responds to the nature conservation interests and other environmental qualities of the application site and its surroundings
• Minimises loss of agricultural land by utilising and upgrading existing farm tracks where possible
• Avoids water crossings (drains) thereby reducing the likely hydrological effects of construction in watercourses
• Considers the location of the control building in relation to flood risk
• Meets to requirements for buffering the high-pressure gas pipeline that crosses the application site
• Complies with recognised noise guidance
LANDSCAPE AND VISUAL IMPACT

The methodology for the landscape and visual impact assessment follows standard guidelines promoted by the Landscape Institute and the Institute of Environmental Management and Assessment. Consultation was conducted with representatives from Carlisle District Council, Scottish Natural Heritage and Natural England to agree the scope of the assessment and choice of assessment viewpoints.

The assessment findings indicate that overall there would be no significant effects on landscape character or landscape designations as a result of the construction and operation of the Scheme, other than those across the localised area in and around the application site. There are expected to be significant visual effects on local residents and people on roads and local footpaths close to the site and part of the settlement at Longtown.

The Scheme is predicted make a relatively low contribution in terms of cumulative effects when considered alongside the other existing, consented and proposed wind energy developments in the area.
ECOLOGY AND NATURE CONSERVATION

The ecological assessment comprised a desk study, Phase 1 Habitat survey, bat activity survey, badger survey, reptile survey and an amphibian survey. Based on the results of the Phase 1 Habitat survey and the desk study, no other protected species surveys were required.

Only a very limited range of habitats was identified within the boundary of the application site and none were considered to be of any more than local significance. Most of the land within the application site is dominated by arable, improved grassland and areas of concrete hardstanding. Land take of these habitats would be limited and, providing mitigation is followed, the Scheme would be unlikely to pose a threat to the wildlife considered in the assessment. Generous buffers have been incorporated into the design of the Scheme to protect habitats of higher wildlife value. In addition, the habitat enhancement proposals would ensure the provision of new habitats to the benefit of wildlife, including species that are local priorities for conservation action.

The Scheme is considered unlikely to pose a threat to the local bat population and therefore it is considered that the survival of the local bat population would not be threatened. Only a small bat population, comprised of common and soprano pipistrelle and Myotis bats, was recorded within the application site. No other bat species were recorded and no bat roosts were identified.

Most of the bat activity recorded during the surveys was from areas that will not be closely associated with the wind turbines, with the pattern of bat activity closely correlated with the location of the most suitable bat foraging and commuting habitats. The Scheme has been proactive in buffering and protecting such habitats. Natural England guidance on the placement of wind turbines has been implemented and the wind turbines have been offset by at least 50 metres from bat movement corridors.

No evidence of badgers or any other protected species was recorded during the surveys.
ORNITHOLOGY

Ornithological surveys were carried out during 2008 and 2009, following current Scottish Natural Heritage guidance. The study areas were defined to include all areas in which wind turbines may be located and the areas that could be affected by them, plus a buffer zone around this. The bird surveys included a desk study; breeding, wintering and migratory bird surveys; and vantage point observations to quantify bird flight activity.

Bird populations within the potential impact zone of the Scheme were generally low, as the Scheme has been designed to avoid any important populations and/or protected areas. The bird populations did however still include several species of conservation importance. The breeding bird community within the study area included one high sensitivity species (barn owl; a species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)) and 13 UK Biodiversity Action Plan priority (medium sensitivity) species: grey partridge, lapwing, curlew, cuckoo, skylark, dunnock, song thrush, starling, house sparrow, tree sparrow, linnet, lesser redpoll and yellowhammer.

Of the non-breeding species, 12 very high sensitivity species were observed (Upper Solway Flats and Marshes Special Protection Area qualifying/assemblage species; cormorant, whooper swan, pink-footed goose, barnacle goose, shelduck, mallard, goldeneye, oystercatcher, golden plover, lapwing, redshank and curlew). Other non-breeding bird interests included seven high sensitivity species (osprey, goshawk, merlin, peregrine, quail, barn owl and kingfisher) that are EU Birds Directive Annex 1/Wildlife and Countryside Act 1981 (as amended) Schedule 1 species, and six medium sensitivity species (UK Biodiversity Action Plan priority species and/or present in regionally important numbers; wigeon, teal, gadwall, common gull, herring gull and starling).

Standard collision risk modelling showed that the collision risk would not be significant for any species. Birds may be displaced from a small zone around the wind turbines but this effect is not predicted to be significant for any species. Mitigation measures would ensure compliance with the nature conservation legislation, a monitoring programme would be implemented to provide detailed information on the local bird populations, and a habitat management plan would be delivered to provide an enhanced alternative feeding area for pink-footed geese to accommodate any displaced by the Scheme, and to provide alternative nesting habitat for any displaced breeding waders.

Overall, no significant ornithological impacts are likely to occur as a result of the Scheme, nor would the Scheme result in any breach of the Habitats Regulations in respect of nearby European designated sites.
**NOISE**

Baseline noise levels were measured at six locations representative of the nearest neighbouring dwellings. Worst case turbine noise levels at the closest residential locations to the site were predicted based on sound power level data for a Vestas V90 2 Megawatt wind turbine.

The assessment was carried out by comparing predicted noise levels with noise limits described in ETSU-R-97 ‘Assessment and Rating of Noise from Wind Farms’. These demonstrate that the predicted noise from the operation of the Scheme at all residential locations would meet the required daytime and night-time noise criteria.

Noise arising from construction and decommissioning activities is expected to be below published criteria for the assessment of noise from construction sites.
The application site is located within an area where there are known archaeological remains and the presence of these remains suggests that the site itself also has archaeological potential. An archaeological desk-based assessment was produced which collated all the known records for archaeology and built heritage within the defined study areas, drew conclusions on the potential for archaeological remains and built heritage assets (such as Listed Buildings) to be affected and made recommendations on how best to deal with any possible effects.

The application site is located on the site of a former World War II airfield and it is possible that remains associated with the construction and use of the airfield are present within the site. The airfield had three concrete runways, two of which partially survive today. The airfield also had an associated operations block (including a decontamination building) and accommodation sites a short distance away to the north east. The airfield perimeter was protected by three pillboxes, at least one of which may partially survive. In order to mitigate against any potential adverse impacts upon any remains associated with the airfield, an archaeological watching brief would be carried out during the construction of the Scheme in order to record any remains that may be encountered.

The application site is approximately 7 kilometres to the south of the Scheduled Ancient Monument and World Heritage Site of Hadrian’s Wall. It is considered that there would be no impact on the outstanding universal value of Hadrian’s Wall as the Scheme lies approximately 5 kilometres to the north of its buffer zone and therefore would not impact upon the understanding of the monument. It is considered that while there is a possibility that the Scheme may be partially visible from Hadrian’s Wall, it would be shielded by two areas of woodland and the effect on the setting of the monument is therefore considered to be minimal.

To the north of the application site is a Roman fort which is located at the site of Netherby Hall. It is considered that the communication lines between the fort at Netherby and Hadrian’s Wall formed an important part of the Roman frontier defences. It is known that the fort was a substantial construction and also had an associated vicus (town) with evidence of a parade ground, house foundations, streets, a cemetery, gardens with altars in them, a bath house and an aqueduct all being recorded. It is considered that there would be no impact on the fort as it is shielded from the Scheme by a large area of woodland. Neither would there be any impact on the historic communication lines between the fort and Hadrian’s Wall.

There are no built heritage assets within the application site so the Scheme would not have any direct physical impacts upon any Listed Buildings or Conservation Areas. There are however 12 Listed Buildings which would possibly have views over the application site and therefore the Scheme may impact on their settings, these being; St Michaels Church and the east wall of the churchyard, St Cuthbert’s Church and its gatepiers, walls and lamps, Brackenhill Tower, Brackenhill Farmhouse and its barns, Longtown Bridge, The Gill farmhouse, Mags Hill Meeting house, the surrounding wall and the adjacent former water mill. However, any impact on the setting of these assets would be minimal, as the potential for the setting of the buildings to contribute to how a person can understand their historical significance would not be affected.

The Registered Battlefield of the Battle of Solway Moss (which took place in 1542) lies approximately 2.5 kilometres from the application site. There would be minimal impact on the setting of the battlefield. However, any change in setting would not alter the ability of people to understand its historical significance.

The assessment has also considered the historic landscape character, and has concluded that any impacts on the historic landscape caused by the Scheme would only affect its setting. The Scheme would not change the existing function of the site as an area of farmland under pasture and the historic field boundaries would still be visible.

Any impacts on the setting of archaeological and built heritage assets would be reduced once the turbines have been removed during decommissioning.
LAND USE AND AGRICULTURE

This assessment considered the impact of the Scheme on private property, land take, land used by the community, development land and agricultural land.

Farming is the dominant industry within the study area, with the majority of land being arable, improved grassland and woodland. The application site is located on Grade 3 (good/moderate quality) agricultural land. It is also under a Countryside Stewardship Scheme, and nearby fields in the study area are within an Entry Level Stewardship Scheme. There are three water bodies within 500 metres of the application site, comprising Hall Burn (a small stream), a drain which follows the southern boundary of the application site and a small pond. There are no major settlements, recreational routes, rail lines, ‘Access Land’, Tree Preservation Orders or community facilities within 500 metres of the application site.

There would be no significant impact on land use and agriculture as a result of the Scheme. The implementation of a Construction Environmental Management Plan, Construction Method Statements and a Site Waste Management Plan would also ensure that any disruption during construction would be kept to a minimum and that careful working practices would be in place and adhered to.
GEOLOGY, HYDROLOGY AND HYDROGEOLOGY
The Scheme has been designed to avoid potential impacts on water features. The closest surface drainage lies over 100 metres from the turbine locations and no internal access tracks would pass close to or cross watercourses. The Scheme would be constructed on glacial till, which overlies sandstone bedrock. A geotechnical survey would be undertaken prior to construction to determine the precise ground conditions and enable the turbines to be optimally placed (within 30 metres of the indicated positions if required).

The application site overlies a significant aquifer that provides water for human use and supports the base flow of local rivers. Some disturbance may occur to groundwater levels during the excavation and construction of the turbine bases, but these would only be temporary during the construction phase and would not have an impact beyond the immediate vicinity of the each turbine. The aquifer is important for maintaining water levels in the nearby Black Snib Site of Special Scientific Interest, but any temporary changes to groundwater levels or flows would not be perceptible this distance from the works. There would therefore be no impact on the Site of Special Scientific Interest.

The Scheme has been designed to make maximum use of the former concrete runways that remain on the site for access and construction. There would be little additional impermeable surfacing, and no consequent impacts on the overall rate of infiltration and groundwater recharge across the site. Surface water runoff would likewise be unaffected. The risk of flooding across the application site is very low and is not expected to change as a result of the Scheme.

Mitigation measures to reduce the risk of pollution to nearby surface watercourses and groundwater would be put in place and administered during the construction and decommissioning phases by a Construction Environmental Management Plan. These would include following best practice techniques for preventing spills and leaks, controlling silty or contaminated runoff and ensuring that concrete slurry was not able to enter the hydrological system. The risk of pollution would therefore be much reduced.
TRANSPORT AND ACCESS

The likely impacts of the Scheme on the surrounding highway network have been assessed. The assessment has been based on the interaction between traffic movements related to the Scheme and existing traffic flows on the local highway network during the construction, operation and decommissioning phases.

The impacts assessed for general construction traffic are based on the traffic generations for the peak months only (the peak months being the third and fourth months of the construction phase for Heavy Goods Vehicle movements and total vehicle movements). The main impact (in terms of increases in Heavy Good Vehicles and total vehicles) of the Scheme would be on the unnamed access road (referred to as Hallburn Farm Access Road) and Swan Street/Mary Street/Moor Road, with all traffic generated by the Scheme using this route to the main highway network. The other possible routes to the Scheme would experience relatively small increases in total traffic and Heavy Goods Vehicle movements. These impacts assume an ‘upper limit’ scenario of all Scheme traffic using each of these routes, which is considered unlikely.

The most significant impact would be on Swan Street/Mary Street/Moor Road with a 35.3% and 32.3% increase in total traffic on a weekday and Saturday respectively and a 46.5% and 80.1% increase in Heavy Goods Vehicle movements respectively. However, this impact would occur during months 3 and 4 of the construction programme and represent the largest increase in traffic and HGVs. The effects during construction would be localised in nature and temporary.

The route for delivery of the wind turbines has been assessed from the M6 to the application site. Some minor modifications are required for the junction of the A7/Swan Road, the Moor Road/Hallburn Farm Access Road junction, the left turn on the Hallburn Farm Access Road and the right turn into the application site.

Mitigation measures have been devised which seek to minimise the effects of construction traffic, in particular, through the timing of Heavy Goods Vehicle traffic flows on the local road network. A Traffic Management Plan would also be implemented.
SHADOW FLICKER

A combination of sunshine and rotating turbine blades can, in certain circumstances and times of the year, produce a phenomenon known as shadow flicker.

Shadow flicker from turbines of the type proposed has no adverse health effects. Any effects on people are confined to annoyance or disturbance.

A detailed shadow flicker assessment has been undertaken to determine whether there would be any adverse effects upon homes as a result of a stroboscopic effect caused by the blades of the turbine passing in front of the sun – caused by either project or both in combination. The assessment was based on a worst case scenario which assumed no intervening vegetation, continual daytime sunshine and continuous turbine blade rotation.

The results showed that although none of the assessed houses lie within 500 metres of any turbine associated with the Scheme, three houses may experience at least one day with over 30 minutes of shadow flicker and each could potentially experience over 30 hours of shadow flicker in a year. However, should it be felt necessary, a simple technological solution is available – involving stopping the turbines rotating when other conditions combine to give rise to flicker. A standard planning condition requiring the installation and application of such a solution would provide complete mitigation of any potential unacceptable flicker.

AVIATION

Wind turbines can present a hazard to low flying aircraft and may also affect radar and radio navigation systems. Early consultation with all statutory authorities can help successful siting and mitigation decisions to be made.

Planning systems are in place to regulate the development of tall structures and a pre-application system has been established for wind developers. International experience suggests the UK has some of the strictest policies in place on radar and aviation.

The Ministry of Defence, The Civil Aviation Authority and National Air Traffic Services have a statutory duty to safeguard certain sites and airspace from radar interference in the interests of national security and for the safe operation of passenger and military aviation.

Although not strictly a radar or aviation issue, seismic monitoring has recently become a constraint on wind energy development in the area of southern Scotland and northern England. There are concerns over the generation of minute seismic vibrations from wind turbines which can mask the seismic signals. Damping technology for wind turbines is available that will reduce the effect on sensitive seismic monitoring equipment. This technology is currently in the process of being approved by the Ministry of Defence.

Consultation has been conducted with the Ministry of Defence, the Civil Aviation Authority, Lancashire Police and Carlisle Airport. National Air Traffic En Route Ltd has not been consulted directly as it has been demonstrated that there is no impact. The Ministry of Defence has objected to the Scheme, but it has been shown that there are acceptable alternate radars available which enable them to provide a radar service as required to military aircraft. There is no demonstrable impact of the Scheme on the Ministry of Defence’s ability to provide essential operational training at the Spadeadam Electronic Warfare Training Range.

Carlisle Airport has removed its objection to the Scheme.

A number of mitigation measures are available that could reduce the conflicts between wind developments and aviation / radar concerns.
SOCIO-ECONOMIC CONSIDERATIONS
This assessment considered the impact of the Scheme on the local economy and labour market, tourism and recreation.

The Scheme lies within the Carlisle City Council district in the County of Cumbria. The application site is located within the Longtown and Rockcliffe ward which is primarily rural but includes the settlement of Longtown. The ward of Lyne lies adjacent to Longtown and Rockcliffe.

The prominent occupations within the wards of Longtown and Rockcliffe and Lyne are skilled trades and elementary occupations which are similar to the district’s occupation profile. Unemployment is low (below the national averages) within the wards of Longtown and Rockcliffe and Lyne. However, unemployment within the district is the same as the national levels. Those employed within the agriculture, hunting and forestry industry within Longtown and Rockcliffe stood at 10% in 2001 (Census), which is lower than the adjacent ward of Lyne (14%), and higher than the district and national levels. This is due to the rural nature of the ward the Scheme is located within/adjacent to.

Construction of the Scheme is likely to create eight full time jobs over the nine month construction phase which would peak at over 30 during erection of the turbines. Jobs would also be created during the six month decommissioning phase. During the 25 year operation of the Scheme a minimum of two people would be employed, visiting the Scheme at appropriate intervals.

No significant impacts on tourism and recreation (including effects on footpaths) are predicted as a result of the Scheme during construction, operation or decommissioning. However, in relation to impacts on tourism and recreation facilities within the wider context, it is likely that these would mainly be affected by visual impacts.

Minor positive cumulative impacts are predicted on the local job market due to the number of proposed wind farms surrounding the site. However, these jobs are likely to be temporary and short-term.
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