

Agenda Item A5	Committee Date 10 May 2010	Application Number 10/00039/FUL
Application Site Lancaster University Bailrigg Lane Lancaster Lancashire	Proposal Installation of 2 wind turbine generators, each with a maximum tip height of 101m, together with associated site access, onsite access tracks, hardstanding areas, temporary construction and storage compounds and landscaping	
Name of Applicant Lancaster University	Name of Agent Joanne Peaks	
Decision Target Date 7 May 2010	Reason For Delay Further consideration of acoustic implications associated with the development and verification of the submitted noise assessment by an independent noise consultant on behalf of the Council.	
Case Officer	Mrs Jennifer Rehman	
Departure	None	
Summary of Recommendation	Refusal	

1.0 The Site and its Surroundings

- 1.1 Lancaster University campus occupies a large site located between the A6 and the M6 motorway, approximately 1.3 km south of Lancaster. The site that is the subject of this application relates to a 23 hectare parcel of land in the university's ownership and on the other side of the M6, Hazelrigg Lane to the east and south, and agricultural land to the north towards Hazelrigg Wood and Blea Tarn reservoir. This site is predominately used for agricultural purposes; mainly grazing.
- 1.2 The site forms a long narrow hilltop ridge tightly situated between the M6 motorway and Hazelrigg Lane. There are two distinct groups of woodland within the site which form two belts on either side of the ridge. A small hilltop copse is situated adjacent to the northern boundary, just outside the application site. The two large belts of trees separate the site from the M6 to the west and residential properties fronting Hazelrigg Lane to the east. To the north, the development site wraps around the existing woodland and extends up to Hazelrigg Lane, directly opposite the access to the Lune Valley Kennels. These areas of woodland are subject to a temporary TPO to protect them in the short term. The university field station, which comprises grassland, research plots, greenhouses, a small building and a permanent metrological mast and telecommunications mast, is situated in this corner of the site.
- 1.3 Beyond the immediate boundaries of the site, land to the north, with the exception of Blea Tarn Reservoir, east and south is largely rolling farmland used for grazing, intersected by narrow lanes and sporadic residential development. To the southeast beyond Hazelrigg Lane, is the Forest Hills Golf Course and Fishing Lake complex. The River Conder runs through this site flowing from its source at Stockabank (north of Quernmore) along the valley bottom heading south westerly towards Galgate and finally to its confluence with the River Lune. To the northeast of the application site, separated and surrounding by pasture land, is Valley View Kennels. Beyond the western boundary

of the application site and the M6, lies the Campus of Lancaster University which practically extends the full length of the application site but on the other side of the motorway.

- 1.4 The topography of the site rises from 40m Above Ordnance Datum (AOD) at the southern boundary of the site to 96m AOD at the northern end of the site where the University Metrological Station is situated. A small valley runs north-south along the eastern boundary of the site. The land levels to the north fall towards this valley where the source of a small stream (tributary of the River Conder) has formed and runs down the site towards the southern boundary where it runs under Hazelrigg Lane through a culvert. Land levels rise to the east and west of this small valley. To the west, within the application site, levels rise to a ridgeline situated between the two areas of woodland. The ridge is approximately 85m AOD in the north falling to 40m AOD at Hazelrigg Lane over a distance of approximately 800m. West of this ridgeline, land levels drop towards the western belt of trees and the motorway.
- 1.5 The site is owned by the University with no public rights way passing through it. Access to the site is via a field access to the south off Hazelrigg Lane, approximately 180m north east of the M6 under bridge on Hazelrigg Lane. There is also an existing access into the University Metrological Station at the northern end of the site.
- 1.5 The site does not fall within any national landscape designation and is simply allocated as Countryside Area in the Lancaster District Local Plan. The site is located within 1.4 km from the Forest of Bowland Area of Outstanding Natural Beauty.

2.0 The Proposal

- 2.1 The planning application submitted is for the installation of two wind turbines with an output of approximately 4.1MW and associated infrastructure. The proposed turbines fall within Schedule 2 II of the Environmental Impact Assessment (EIA) Regulations 1999 and as such a full EIA and Environmental Statement (ES) accompany the application.
- 2.2 The proposed turbines will be three bladed, horizontal axis machines with a hub height of 59m and a blade length of 41m. The rotor diameter is 82m with a ground to tip height now confirmed to be 100m. This has been amended from the original ground to tip height of 101m. The turbine itself is no more than 100m high; the additional 1m previously proposed was a maximum ground to tip height to account for foundations. The turbine rotor and nacelle will be mounted on a tapered steel tower (approximately 3.8m – 3m wide), supported on reinforced concrete foundations approximately 15m x 15m with an overall depth of 3m, requiring approximately 400m³ of ready mix concrete of which 45 tonnes of this is steel reinforcement. This will be below existing ground levels.
- 2.3 The associated infrastructure includes:
- Approximately 1.1km of access track
 - Access alterations
 - Crane hardstanding pads
 - Temporary construction and storage compound
 - Earthworks
 - Approximately 1.3km of underground cabling to each turbine and to the electricity substation on the main University campus
 - 100m of stream culverting
 - Hedgerow and woodland clearance – approximately 606m of hedgerows to be removed and 0.36 hectares of woodland.
- 2.4 The proposed turbine locations have been selected following a process of constraint mapping (Chapter 2/Appendix B of the ES). Seven sites were considered and ranked having regard to the constraints map and mitigation difficulty. The two sites proposed which now form part of the submitted application were selected as preferable sites to carry forward. The turbine locations are as follows:
- Turbine 1 (northern turbine) is located at Grid Reference [349175.7, 457789.2] at the northern end of the site at c 87m OAD. The site is constrained by the BT radcom link only. The most significant constraint at this location apart from the radcom link is noise at the

Valley View Kennels.

- Turbine 2 (southern turbine) is located at Grid Reference [349093.3, 457073.4] at the southern end of the site at 45m OAD. The main constraint remaining in this location is the proximity of the turbine to the adjacent woodland (Beck Wood) and the proximity to the unnamed watercourse.

The turbines are located approximately 700m apart from each other.

- 2.5 The access track will run from the widened entrance off Hazelrigg Lane at the southern end of the site and extend approximately 1.1km up the site on the eastern side of the ridge, adjacent to Beck Wood, at a gradient of 1 in 15. The access track would have a nominal width of 5m and will require excavation of a minimum of 500mm depth of top soil. The ground underneath will be compacted and a geotextile base layer with crushed stone will be laid on top to a thickness of 500mm. Either side of the access track drainage ditches will be proposed. A grass reinforcement geogrid will be used to provide a running surface for the part of the access track and for any overrun areas for abnormal load vehicles.
- 2.6 It is proposed to utilise the existing access into the site. The access will be widened and altered to provide additional means for abnormal loads turning left into and right out of the site. The proposed access will consist of a bituminous surfaced bell mouth incorporating the access junction. It will have a 17m radius on the western side and 15m on the eastern side and a total width of 40m. On the western side of the junction there will be an over-run area which shall be surfaced using a grass reinforcement geogrid product. This potentially widens the access at the junction to 55m.
- 2.7 The proposed crane pads measure 45m x 25m and shall be situated adjacent to the turbine foundation. These will require deeper foundations, due to higher loads the areas will undergo during construction, using up to 600mm of Type 1 granular material and will be constructed in a similar manner to the access track. On the opposite side of the access track adjacent to the crane pads, surface and loading areas are proposed. These measure 100m (length) by 6m (wide).
- 2.8 The site storage and construction compound would be located in the south western corner of the site in a triangular field located between in the existing field access and the proposed access track, approximately 3500m² in area. The compound will house temporary portable buildings, containers for tools and equipment, parking for construction vehicles and secure storage of components and materials. At the end of the construction period, all equipment will be removed and the hard standing covered over with stored topsoil which would then be re-seeded.
- 2.9 Approximately 1.3km of underground cabling would be required to link the turbines to each other and to the existing electricity substation on the main University Campus. The route for this is from the University intake substation following Green Lane through the Campus and then along Hazelrigg Lane. It then runs alongside the proposed access track to try to minimise ground disturbance. To lay the cables trenches of approximately 1100mm deep and 610mm wide are typically required.
- 2.10 It is anticipated that approximately 6800m³ or 10,000 tonnes of material will be excavated during construction for the turbine bases and infrastructure. It is proposed that as far as practical this material will be reused on site, primarily for restoration of disturbed ground or during the implementation of the proposed habitat mitigation strategy. A spoil storage area has been defined in the application, located above the site compound adjacent to the southern turbine.
- 2.11 In addition to the above and in order to facilitate the turbines in the proposed locations, two sections of the stream require culverting. A small section of stream will need to be converted at the northern end of the site in order to construct the access track. A larger section of stream is required to be culverted at the southern end of the site due to its proximity to the turbine.
- 2.12 The proposal also involves the removal of approximately 606m of hedgerow across the site, 3 veteran trees and 0.36 hectares of woodland from Beck Wood. To compensate for this loss approximately 0.79 hectares of planted woodland, 1.74 hectares of woodland and scrub provided by natural regeneration, and approximately 1090m of hedgerow is proposed.

The permanent land take associated with the development, which comprises the turbine foundations, site access track and crane pad hardstandings, totals approximately 1.5 hectares.

3.0 Site History

3.1 Lancaster University has a complex and extensive planning history. However the only relevant planning history relates to the recent approval for the erection of an 80m anemometry mast, which was granted planning permission by committee on the 2 November 2009. The anemometer has a temporary consent for 12 months and has been used and continues to be used to record wind information data (speed and direction). The anemometer (or met mast) has been erected and is positioned close to the position of the proposed northern turbine. Whilst the permission was for an 80m mast, the mast installed on site is only 70m.

Application Number	Proposal	Decision
09/00837/FUL	Erection of an 80m Anemometry Mast on a guide tower for temporary period of one year	Approved

4.0 Consultation Responses

4.1 The following responses have been received from statutory consultees:

Statutory Consultee	Response
Natural England	<p>Natural England originally objected to the proposal on the grounds that the development, in particular its poor siting and design, would have an adverse impact on local landscape character and the setting of the AONB. This impact would be exacerbated by the backdrop of existing vertical infrastructure. The general effect on the views from the AONB would be to increase visual clutter and the perception of urbanisation. This raises the question of whether the area has the capacity for more vertical infrastructure generally.</p> <p>Despite objections on landscape grounds, Natural England has no objections to the development on ecology grounds, provided further detail is provided prior to determination in respect of:</p> <ul style="list-style-type: none"> • bat/bird monitoring; • biodiversity mitigation and compensatory measures; • confirmation of the timing of woodland clearance; and, • a detailed habitat management; <p><i>Following the submission of an Ecology Addendum, a Habitat Management Plan and associated plans, together with additional landscape and visual information, Natural England have the following comments:</i></p> <p>Object to the development. Their reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • The additional information (wireframe perspectives) submitted reinforces the fact that the site remains far from ideal for siting turbines because of its shape, landform and existing features. The existing features coupled with the proposed turbines will result in the exacerbation of existing visual clutter in many views. • The different levels and wide spacing results in an unbalanced scheme which would be visually poor when viewed from both close and more distant viewpoints. • Natural England do not consider that the additional effects of the scheme on the adjacent AONB and its setting are sufficient in this case to make a formal objection. However, they believe that in terms of size of the development the current scheme represents expediency rather than good design. • Recommends omitting one turbine from the scheme to help resolve or minimise the above concerns. The southern turbine should be omitted.

	<p>No objections to the development on biodiversity grounds. All previous concerns have been addressed and more importantly adequate mitigation has been proposed. If minded to approve, conditions will be required for bat/bird monitoring, implementation of the Habitat Management Plan and associated landscaping.</p>
<p>County Landscape Officer (LCC)</p>	<p>Object to the development. Their reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • The site is within Lancashire's Landscape Sensitivity to Wind Energy Development document; identified as an area of moderate – high sensitivity. Despite the reduction to the height of the turbines (as specified in the Scoping Report), the site and its surrounding landscape does not have the capacity to accommodate turbines of this scale and as such will have landscape and visual impacts of moderate-major significant at distances up to 5km. This is deemed unacceptable. • The turbines are sited on a narrow ridge that has a complex and relatively small scale landscape pattern; the proposed turbines would be out of scale with this landscape which would be exacerbated by the presence of nearby scale comparators. • The turbines are too tall for the rolling lowland landscape and as such would overwhelm the topography. • The size of the turbine blades in relation to the height appear “top heavy”. • The 0.72km separation between the turbines limits the extent to which the turbines would read as a cluster. By comparison the Caton wind turbines which are 90m high are on average around 0.37km apart. • Recommends that the site has the potential capacity to accommodate one turbine (turbine 1-southern turbine) at a reduced height. Notwithstanding this, there would still be significant visual impacts on close range.
<p>County Ecology (LCC)</p>	<p>Prior to the determination of the application the following points need to be addressed:</p> <ul style="list-style-type: none"> • The applicant will need demonstrate that impacts on biodiversity will be fully mitigated/compensated. • If the loss of veteran trees cannot be avoided, mitigation/compensation should be commensurate. • Habitat mitigation plan shows retained hedgerow and new hedges within 50m buffer zone which is contrary to best practice. • Revised stream realignment is not acceptable. • No information submitted regarding woodland ground flora in the area –any loss of this should be compensated and provided. <p><i>Following the submission of an Ecology Addendum, a Habitat Management Plan and associated plans, County Ecology no longer object to the proposed development. The following comments have been made:</i></p> <ul style="list-style-type: none"> • With regards to stream culverting, the County Ecologist states that culverting clearly has ecological impacts. However given the particular circumstances at this site and given that the applicant has explored alternative options, they are willing to accept the approach proposed here. As compensation for the culverting the stream it is proposed to create an ‘oxbow’ pool that will be developed to provide potential water vole habitat. • It is proposed to compensate for the loss of three mature trees by planting 60 replacement trees within /adjacent hedgerows – this is now accepted. • The translocation of woodland ground flora is welcomed but should be located in an area of new planting rather than in woodland block B (woodland adjacent the motorway). <i>This matter will be addressed prior to the committee meeting.</i> • Clarification of the survey dates for the great crested newt survey needs to be sought – the Ecology Addendum indicates that the surveys were undertaken on the 4/5th July 2009. This date is outside the dates referred to in the ES and would not be in accordance with the relevant guidance. <i>This matter will be addressed prior to the committee meeting.</i>

	<p>Subject to resolving the above outstanding matters, the following conditions are recommended:</p> <ul style="list-style-type: none"> • Bat/bird monitoring conditions required. • Tree felling, clearance will not be carried out during March and August unless the absence of nesting birds has been confirmed. • Habitat creation/enhancement long-term management plan to be conditioned • Repeat badger surveys to be carried out prior to site clearance. • Repeat water vole surveys to be carried out if work has not commenced before November 2010. • Tree Protection conditions in accordance with BS5837:2005 'Trees in relation to construction'
<p>Tree Protection Officer</p>	<p>Object to the development. The reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • The loss of woodland and veteran trees to accommodate Turbine No. 2 would result in an unacceptable loss of important mixed species woodland, hedgerows and field grown trees that have significant historic, arboriculture and landscape value; value that if removed cannot be replaced within a single generation. • The three woodland areas are important historic landscape and arboriculture features. The woodlands, hedgerows and field trees are by and large clearly visible landscape features. They offer important amenity value and should be retained and protected. A TPO has been served on these woodlands and field trees to ensure protection in the short term. <p><i>Following the submission of the Habitat Management Plan and associated plans, the Council's Tree Officer reiterates original concerns and indicates a Method Statement for works to install proposed fencing/features in relation to tree protection measures should be submitted. The outcome of this shall be verbally presented to Members.</i></p> <p>Based on the additional/amended information submitted, if minded to approve the following conditions would be required:</p> <ul style="list-style-type: none"> • Standard Landscaping condition (development to be carried out in accordance with Dwg No LCU 03) • A condition restricting tree felling during period August – end October • Habitat Management Plan to be implemented in full.
<p>County Archaeology (LCC)</p>	<p>Based on the submission of amended/further information, the County Archaeology team are satisfied with the details submitted and raise no objection to the proposed development, subject to a condition requiring the implementation of a programme for archaeological works prior to the commencement of any works.</p>
<p>County Strategic Planning (LCC)</p>	<p>Advises that the development must be considered against the provisions of the North West of England Plan: Regional Spatial Strategy to 2021 (RSS). Policy DP9: Reduce Emissions and Adapt to Climate Change Policy EM1: Integrated Enhancement and Protection of the Region's Environmental Assets Policy EM17: Renewable Energy Policy EM18: Decentralised Energy Supply.</p> <p><i>Landscape, biodiversity and the natural built environment and the extent to which any material harm that may be caused by the proposal will be compensated in full in accordance with the principle of no net loss of recourse.</i></p> <p>The development conforms to DP9, EM17 and EM18. County Strategic Planning team are unable to comment whether the proposal complies with Policy EM1. See separate comments from County Archaeology and County Ecology.</p>

Ministry of Defence	No objection to the proposal. Turbines to be fitted with aviation lighting.
Civil Aviation Authority	<p>Advises that the development has the potential to impact upon aviation operations and activities and that the local planning authority should seek viewpoints from both NATS and the MoD. Applicant recommended to initiate consultation with Blackpool Airport licensee.</p> <p>Subject to comments from other aviation operators, there may be a need for lighting and blades to be coloured white. There is a requirement in the UK for all structures over 300ft high to be chartered on civil aviation maps. Should the wind turbine development progress, developers will need to provide details of the development to the Defence Geographic Centre.</p>
NATS (National Air Traffic Service)	Although the proposed development is likely to impact NATS electronic infrastructure NATS has no safeguarding objection to the proposal.
Blackpool Airport	No objections and no comments to make regarding the development as proposed.
Lancashire Constabulary Air Support Unit	No objections to the construction of two turbines. Whilst the turbines are significant obstacles, they are unlikely to cause any undue problems.
County Highways	<p>No objections. The following comments have been received:</p> <p>The Highway Authority is generally satisfied with the Traffic Transport and Highway Impact chapter of the submitted Environmental Statement and has confirmed that they have no objections to the granting of planning permission subject to the following conditions:</p> <ul style="list-style-type: none"> • A Traffic Management Plan shall be submitted and agreed in advance of any commencement of any works. • No part of the development hereby approved shall commence until a scheme for the construction of the site access to Hazelrigg Lane has been submitted to, and approved. • Construction of the development hereby approved shall not commence until the approved scheme referred to in Condition above has been constructed and completed in accordance with the scheme details. • The applicant is also advised that the granting of planning permission will require the applicant to enter into an appropriate legal agreement with the County Council as Highway Authority. <p>One minor issue regarding technical sac curve information for one bridge is still being considered by County Highways. This relates to abnormal load vehicles during the installation and decommissioning stages of development. The outcome of this shall be verbally presented to Members at the committee meeting.</p>
Highway Agency	<p>No objections. The following comments have been received:</p> <ul style="list-style-type: none"> • No adverse impact upon safety of users of the M6 motorway because of the long range views available of the turbines. • The accident data submitted has been considered and accepted. • The influence of shadow flicker from the nearest turbine to the motorway is not considered material • Due to the close proximity of the nearest turbine to the M6 motorway a condition is required to ensure the minimum topel distance is provided. • <p>Clarification has been provided to confirm that the ground to tip height of the turbine shall be 100m and as such the 150m stand-off distance from the motorway can adequately be provided.</p>

Environmental Health	<p>Initial concerns received expressed concerns regarding the proximity of the turbines to nearby residential properties and the subsequent potential impact of noise disturbance. The Council have appointed noise consultants to investigate potential noise impacts and verify the data submitted by the applicant.</p> <p>The appointed noise consultant (Martec Environmental Consultants Ltd) have undertaken an acoustic appraisal of the applicant's noise information and undertaken further noise measurements in accordance with ETSU-R-97 [1]. The monitoring of background noise levels at two of the same locations used by the developer tends to confirm their results, which indicates wind turbine noise levels are within the limits that ETSU-R-97 [1] would set for this location. The consultants have also confirmed that low frequency noise/infrasound emissions from the turbines is not considered a significant issue.</p> <p>The Environmental Health Service therefore raises no objections to the development. However due to remaining concerns regarding the proximity of the turbines to nearby properties, three conditions are recommended to safeguard the amenities of nearby residential properties. These consist of further noise background noise assessment to be carried out in accordance with a scheme to be agreed by the local planning authority, the turbines to be fitted with a noise reduction management programmed and condition limiting the noise levels to those prescribed acceptable by ETSU-R-97 [1].</p>
Environment Agency	<p>Following the submission of a revised landscaping proposal, which indicates an area of culverting within the blade sweep of the southern turbine in the interests of biodiversity, the EA now object to the proposal. There concerns relate to the loss of 100m of open watercourse and stream habitat. The EA consider the proposed mitigation insufficient for the length of watercourse proposed lost. The EA also indicate that EA consent for the culverting would not be granted irrespective of the granted of planning permission.</p>
United Utilities	<p>No objections to the proposed development.</p>
Regional Planning Body 4NW (former NWRA)	<p>Based on the Schedule of Regionally Significant Planning Application Criteria 4NW does not consider this application to be Regionally Significant, which set a threshold of 25+ megawatts total installed capacity for renewable energy schemes.</p>
Ellel Parish Council	<p>Object to the development. Their reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • Concerns regarding the proximity of the development and electromagnetic disturbance. • The Parish Council feels that there are more appropriate sites within the university that would be able to generate energy yield proposed without interfering with the visual amenities of nearby residents. • Detrimental impact on the open and rural character of the area. • The Parish Council point out that the background noise levels from the motorway will not be the same level for 24 hours – impact of noise is a concern to those nearest the turbines. • The site is adjacent to the AONB and would affect the views into and across it.
Scotforth Parish Council	<p>Object to the development. Their reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • The scale of the turbines are completely disproportionate to the local surroundings, they would dominate the landscape and adversely affect residents within the parish. • Issues of noise and possible interference with both TV and radio reception are a concern. • Close proximity to the motorway – distraction to drivers from both directions.

Friends of Eden, Lakeland and Lunedale Scenery (FELLS)	<p>Object to the development. Their reasons of opposition are as follows:</p> <ul style="list-style-type: none"> • Unacceptable proximity to neighbouring residents and as a consequence would significantly violate the amenity of local residents in particular the residents of the 5 properties closer than 400m to the turbines. • FELLS refer to the Sillfield appeal which was refused on the grounds of residential amenity and implies that the approval of this application would breach best practice.
AONB Joint Advisory Committee	<p>No objections to the development. The following comments have been received:</p> <ul style="list-style-type: none"> • The Forest of Bowland AONB Manager has carefully considered the proposals and the comments of Natural England and the County Council in respect of impact on the AONB particularly from a landscape and ecological viewpoint. Solely from the basis of AONB purposes alone ie 'conservation and enhancement of the Area of Outstanding Natural Beauty' I do not feel there is sufficient grounds to object to the proposal. • I am not therefore proposing that the Forest of Bowland AONB Joint Advisory Committee raise any objection to the proposal.
CPRE	<p>Object to the development. Their reasons for opposition are as follows:</p> <ul style="list-style-type: none"> • The proposal is contrary to PPS1, PPS7 and PPS22, Policy EM1 (RSS) and Policy E1 (Lancaster Core Strategy). • The development would have an adverse impact on the quality of life of the local community and have an adverse effect on the environment, in particular the districts local landscape qualities, such as the designated areas of Morecambe Bay (Ramsar Site) and the Forest of Bowland AONB. • Proposal would not enhance or protect the regions environmental assets due to the substantial amount of woodland and hedgerow to be removed and fails to take into account the needs and wishes of the community. • CPRE have concluded the site is high to medium sensitivity where the effects of the development can not be mitigated against and land use and views will be permanently changed. • Concerns regarding the noise levels indicated in the application. • Concerns regarding the proximity of the development to the nearest residential property.
OFCOM	<p>Standard response identifying the fixed link ends(s) within or have paths that cross 500m radius of the stated turbine locations. The Submitted ES addresses all issues associated with the electromagnetic interference. JRC (below) has also been consulted.</p>
Joint Radio Company Ltd.	<p>Objects to the proposal. The proposed turbine 1 (northern) could affect an adjacent National Grid Gas telemetry link because the site falls within 1km of the protected link site. Negotiations regarding this matter are still ongoing but should be addressed prior to the committee meeting. <i>The outcome of this shall be verbally presented to Members.</i></p>

5.0 Neighbour Representations

5.1 The university has provided the Local Planning Authority with a number of representations received during their own public consultation process. However only the letters submitted in response to the planning application have been counted and considered.

5.2 At the time of compiling this report approximately 287 letters of objection have been received, including 1 letter of objection from a political party on the grounds of neighbour impact and visual/landscape impact. A further 4 letters of objection in response to the submitted Residential Receptor Assessment, have now been. Many of the letters are from local residents, particularly those closest to the site; however there are also letters from further afield outside the District. The

main reasons of opposition are summarised as follows:

Residential Amenity

- Inappropriate scale and unacceptable siting
- Concerns regarding content and methodology of Environmental Statement
- Dominant, imposing and overbearing visual impact detrimental to residential amenity and exacerbated by the constantly moving blades.
- Amenity concerns regarding noise, vibration and shadow flicker - many residents unconvinced by noise assessment data undertaken, particularly regarding background noise levels associated with the M6 motorway.
- Health concerns relating to the constant low drones emitted by turbines and stress/depression.
- The turbines are in ground breaking proximity to residential properties. Many residents have referred to minimum separation distances applied in Scotland and Wales and other European Countries. *UK Noise Association recommends a minimum separate of 1mile. French Government requires a minimum distance of 1.5km from residential property; in Scotland a minimum distance of 2km is encouraged. The Companion Guide to PPS22 suggests a practical separation distance of 350m. The World Health Organisation recommends 500m.*
- No benefit to the local community- the only benefit of the scheme are of monetary value to the University
- Loss of views across rural landscape and towards AONB

Character of Area

- The turbines will be visually intrusive in the countryside and will dominate the skyline. They appear disproportionate and out of scale with the surroundings, exacerbated by their distant separation
- Visual impact can not be mitigated by screening.
- Detract from the distinctive character of Bailrigg village
- Affecting views of Clougha, views across to the AONB and Sunderland Point.
- Concerning regarding their cumulative impact with Caton Moor Wind Farm
- The two turbines would spoil the approach to city and would detract from other important historical landmarks (Ashton Memorial).
- No up-close photomontages
- Will destroy views and general enjoyment of recreational walking and cycling routes

Ecology

- Destruction and loss of hedgerows, woodland and habitats will have a detrimental impact on wildlife and the visual landscape.
- Concerns regarding content and scope of Chapter 5 of Environmental Statement, particularly regarding bird monitoring.
- Concerns that the impacts on bats, breeding birds and overwintering birds can not be fully qualified until after implementation of mitigation.
- Given the close proximity to two major SSSIs concerns have been raised regarding the possibilities of unidentified species being affected by the development.
- The mitigation of the loss of trees and woodland will take years to establish and replenish wildlife.

Highways/Safety

- Development will lead to an increase risk of road traffic accidents by way of driver distraction.
- Concerns regarding blade failure/blade tip disintegration and flying ice blocks, particularly given the close proximity to the M6.
- Impact of increased traffic on local residents has not been considered
- The turbines have been squeezed onto the site and only just meet the motorway safeguarding separation distances.

Energy Development

- Inefficient energy production – concerns regarding methodology and figures provided in the Environmental Statement.
- Carbon emissions produced as a result of production, transportation, construction and decommissioning of the turbines

- Concerns regarding the precedent of this development. The proposal constitutes sporadic development – developments of this nature should be designated to wind farms such as Caton Moor and Morecambe Bay or off-shore wind farms where wind source is far more efficient.
- The University have not properly considered other forms of energy production saving that would have minimal impact on the environment
- University should adopt better housekeeping, such as turning lights off in order to reduce energy consumption.
- Turbines would affect the data collection from the Meteorological Monitoring station on Hazerigg Lane

Other Issues

- Concerns regarding the level of community consultation carried out.
- The wind industry is simply manipulating the issue of climate change and using the green label in order to promote its own profits. They are also capitalising on the subsidies available for renewable energy.
- Unconvincing arguments regarding the chosen locations and the constraints of other sites
- Concerns that the University “flexing its corporate muscles” – using the turbines as a marketing tool.
- Neighbours have highlighted recent appeal decisions where applications have been refused on the grounds of loss of residential amenity where turbines are sited between 450m – 650m of nearby dwellinghouses.
- Concerns regarding the interference with television reception
- Adverse affect on local business (Lune Valley Kennels and Forest Hills Golf Course). Turbine 1 is only 200m from Lune Valley Kennels.
- Loss of local employment if businesses are adversely affected.
- Concerns relating to the adverse effects of turbines on animals (dogs, cats and horses in particular)
- Loss of property values and desirability of houses within close sight of the wind turbines

5.3 There has also been a considerably amount of support for the development. At the time of compiling this report, approximately 232 letters of support have been received commenting on the wider environmental benefits of the scheme. The main reasons for support are as follows:

- The benefits of reducing the University’s carbon footprint and supporting government commitments to reduce CO2 emissions far outweigh any environmental impact (noise, visual and landscape impacts).
- The University will be the first in the UK to proceed with such a significant large scale “green” energy proposal and will lead locally, regionally and nationally. The development would provide education/research opportunities.
- The turbines would support the local economy through inward investment.
- Demonstrates that the University and the City Council are serious about developing sustainable futures.
- Helps tackle climate change
- The turbines are visual pleasing and could attract visitors to the area

5.4 It is noted that of the number of the support letters have been submitted, a number are submitted by University students and employees, together with some residents from further afield within the District and outside the District. Nevertheless, these are still valid items of correspondence and are reported as such.

5.5 Despite the number of objections received and the gravity of these objections, it is also noted that many of the objectors (not all) are not opposed to the University’s commitment to reduce their carbon emissions through the development of a renewable energy scheme. However many remain extremely concerned about the scale, design and location of the proposed wind turbines.

6.0 Principal Development Plan Policies

6.1 National, Regional and Local planning policy are relevant to this proposal. The following list is of particular relevance and shall form the principle policy framework for assessing the application:

PPS1 (Delivering Sustainable Development) sets out the Government's overarching planning policies on the delivery of sustainable development and provides generic advice for all new development. The Government sets out four aims for sustainable development. These are:

- developing strong, vibrant sustainable communities
- protection of the natural and historic environment
- prudent use of natural resources
- promoting a strong, stable and productive economy

With regard to environmental protection, PPS1 states that a high level of protection should be given to most valued townscapes and landscapes, wildlife habitats and natural resources, conserving and enhancing wildlife species and habitats and the promotion of biodiversity. It goes on to state that planning policies should take account of environmental issues; such as the mitigation of the effects of, and adaptation to, climate change through the reduction of green house gases and the use of renewable energy. Where adverse impacts are unavoidable, mitigation and compensatory measures may be appropriate.

PPS1 (Planning and Climate Change Supplement) indicates that planning has a key role to play in tackling climate change and securing progress towards the UK's emission targets. It also states that planning authorities should provide a framework that promotes and encourages renewable and low-energy generation and as such policies should be designed to promote and not restrict renewable technologies and supporting infrastructure. Subsequently, applicants for renewable energy development should not be required to demonstrate the overall need for renewable energy, nor should the energy justification for a proposed development in a particular location be questioned.

PPS5 (Planning for the Historic Environment) now supersedes PPG15 and PPG16 in relation to the historic environment and archaeology. The Government's overarching aim is that the historic environment and its heritage assets should be conserved and enjoyed for the quality of life they bring to this and future generations. In order to deliver sustainable development, PPS5 states that policies and decisions concerning the historic environment should:

- Recognise that heritage assets are a non-renewable resource
- Take account of the wider social, cultural, economic and environmental benefits of heritage conservation
- Recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained in the long term.

Policy HE1: Heritage Assets and Climate Change is particularly relevant. HE1.3 states that where conflict between climate change objectives and the conservation of heritage assets is unavoidable, the public benefit of mitigating the effects of climate change should be weighed against any harm to the significance of heritage assets in accordance with the development management principles in this PPS and national planning policy on climate change. Policy HE6 of PPS5 states that where an application site includes or has the potential to include heritage assets with archaeological interest, planning authorities should require developers to provide an appropriate desk-based assessment or where appropriate a field evaluation with an application.

PPS7 (Sustainable Development in Rural Areas) sets out the Government's overall aim is to protect the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and so it may be enjoyed by all. This advice is also formally provided in PPS 4 – Planning for Sustainable Economic Growth, which supersedes certain paragraphs of PPS 7. When determining planning applications for development in the countryside, local planning authorities should continue to ensure that the quality and character of the wider countryside is protected and, where possible, enhanced. They should have particular regard to areas that have been afforded statutory designation for their landscape, wildlife or historic qualities. Major developments should not take place in these designated areas, except in exceptional circumstances. When determining planning applications for development in the countryside, planning authorities should:

- take account of the need to protect natural resources, and;
- provide for the sensitive exploitation of renewable energy sources in accordance with the policies set out in PPS22.

PPS9 (Biodiversity and Geological Conservation) sets out planning policies on the protection and enhancement of biodiversity and geological conservation through the planning system. The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted adequate mitigation measures are put in place and appropriate compensation measures sought. PPS9 states that Ancient woodland is a valuable biodiversity resource; once lost it cannot be recreated. Planning authorities should not grant planning permission for any development that would result in its loss to deterioration unless the need for, and benefits of, the development in that location, would outweigh the loss of woodland habitat. Aged or 'veteran' trees found outside ancient woodlands are also particularly valuable for biodiversity and their loss should be avoided.

PPS22 (Renewable Energy) is the overarching national policy that sets out Government's stance on renewable energy development and positive steps towards delivering Government's commitment to tackling climate change. PPS22 sets out a number of key principles that planning authorities should adhere to when considering applications for renewable energy developments. These include:

- Renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily;
- Regional and local policies should be designed to promote and encourage, rather than restrict, the development of renewable energy resources;
- The wider environmental and economic benefits of all proposals for renewable energy projects, whatever their scale, are material considerations and should be given significant weight;
- Planning authorities should not make assumptions about the technical and commercial feasibility of renewable energy projects;
- Small-scale projects can provide a limited but valuable contribution to overall outputs of renewable energy and meeting energy needs both locally and nationally. Planning authorities should not therefore reject planning applications simply because the level of output is small;
- Developers of renewable energy projects should engage in active consultation and discussion with local communities at an early stage in the planning process;
- Proposals should demonstrate any environmental, economic and social benefits as well as how any environmental and social impacts have been minimised through careful consideration of location, scale, design and other measures.

The Government has already set a target to generate 10% of UK electricity from renewable energy sources by 2010. The White Paper sets out the Government's aspiration to double that figure to 20% by 2020. PPS 22 requires regional spatial strategies to include regional targets for renewable energy capacity in the region, and states that these targets should be expressed as the minimum amount of installed capacity. PPS22 also emphasises that the potential to generate substantial amounts of renewable energy from offshore projects should not be used as a justification to set lower targets for onshore projects.

PPS 22 has regard to the potential landscape and visual effects of renewable energy developments and states that such effects may be minimised through appropriate siting, design and landscaping.

PPS22 (Planning for Renewable Energy: A Companion Guide) offers practical advice as to how the policies contained in PPS22 can be implemented. The guide provides advice and guidance relating to a range of technologies. With regards to wind turbine development, this guidance expands and covers social and environmental benefits, together with issues such as noise, shadow flicker, landscape and visual impact, access and associated infrastructure, electromagnetic interference, ecology, historic conservation and archaeology. The companion guide should be read in conjunction with PPS22.

PPG24 (Planning and Noise) advises local planning authorities when determining planning applications for development which will either generate noise or be exposed to existing noise sources to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. The authority should ensure that development does not cause an unacceptable degree of disturbance, considering carefully in each case whether proposals for new noise-sensitive development would be incompatible with existing activities. Authorities should consider whether it is practicable to control or reduce noise levels, or to mitigate the impact of noise, through the use of conditions or planning obligations. Ambient noise should be taken into account when considering the application.

PPS25 (Development and Flood Risk) requires flood risk to be taken into account at all stages of the development process. PPS25 recognises that flooding cannot be wholly prevented, but its impacts can be avoided and reduced through good planning and management.

Draft National Planning Statement (NPS) EN3 for Renewable Energy Infrastructure – Section 2.7 relates to onshore wind and reiterates the guidance contained in PPS22. It identifies the key impacts of onshore wind development as the historic environment, landscape and visual, noise, shadow flicker, and traffic and transport. This policy also lists a series of information to be provided with applications.

PPS (No Number Yet Allocated): Consultation (Planning for a Low Carbon Future in a Changing Climate) March 2010 – this consultation document brings together PPS1 Climate Change Supplement and PPS22 into a new draft PPS for *Planning for a Low Carbon Future in a Changing Climate*. The requirement for this is a response to a significant amount of new legislation and policy, such as the Climate Change Act 2008 and The Low Carbon Transition Plan and Renewable Energy Strategy (July 2009). The consultation document states that the planning system sets out the overall framework for development. This should help secure progress against the UK's emissions targets, both by direct influence on energy use and emissions through, for instance, encouraging energy efficiency, and through bringing together and encouraging actions from others. Policy LCF14: Renewable and low carbon generation is most relevant and reiterates a number of the criteria in PPS22 for determining planning application for renewable energy proposals. For particular importance, it reiterates that planning authorities should not require applicants for energy development to demonstrate overall need; and that significant weight should be given to wider environmental, social and economic benefits of renewable energy projects.

6.3 North West Regional Spatial Strategy (RSS) - adopted September 2008

Policy DP7 (Promote Environmental Quality) seeks to protect environmental quality by, amongst other means, respecting the character and distinctiveness of places and landscapes; maintaining and enhancing the quantity and quality of biodiversity and habitat; the protection and enhancement of the historic environment; and maintaining tranquillity of the open countryside and rural areas.

Policy EM1 (Integrated Enhancement and Protection of the Region's Environmental Assets) - The Region's environmental assets should be identified, protected, enhanced and managed. Schemes should deliver an integrated approach to conserving and enhancing the landscape, natural environment, historic environment and woodlands, and where proposals affect these assets then mitigation and compensation for loss or damage should be a minimum requirement. Of particular relevance is Policy EM 1 (A) which states that planning proposals should identify, protect and maintain distinctive features that contribute to landscape character in the Region. This approach recognises the importance of landscape character assessments undertaken by local authorities.

Policy DP9 (Reduce Emissions and Adapt to Climate Change) – as an urgent regional priority, plans, strategies, proposals, scheme and investment decisions should contribute to reduction in the Regions carbon dioxide emissions from all sources in line with national targets to reduce emissions to 60% below 1990 levels by 2050. Increasing renewable energy capacity and promoting microgeneration are key measures identified to help reduce carbon emissions.

Policy EM17 (Renewable Energy) supports the development of renewable energy schemes. It states that in line with the North West Sustainable Energy Strategy, by 2010 at least 10% (rising to at least 15% by 2015 and at least 20% by 2020) of the electricity supplied in the North West should be provided from renewable energy sources. The following criteria should be taken into account but

should not be used to rule out or place constraints on the development of all, or specific types of, renewable energy technologies. The criteria includes:

- anticipated effects on local amenity resulting from development, construction and operation of schemes (e.g. air quality, atmospheric emissions, noise, odour, water pollution and disposal of waste)
- acceptability of the location/scale of the proposal and its visual impact in relation to the character and sensitivity of the surrounding landscape, including cumulative impact
- effect on the region's World Heritage Sites and other national and internationally designated sites or areas, and their settings but avoiding the creation of buffer zones
- effect of development on nature conservation features, biodiversity and geodiversity, including sites, habitats and species, and which avoid significant adverse effects on sites of international nature conservation importance by assessment under the Habitats Regulations
- potential benefits of development on the local economy and local community
- effect on agriculture and other land based industries

Policy EM18 (Decentralised Energy Supply) expects local planning authorities to provide a framework that promotes and encourages renewable and low carbon energy development in order to contribute to the achievement of regional renewable energy targets.

6.4 Saved Policies of the Lancaster District Local Plan (LDLP)- adopted April 2004

Policy E4 (Countryside Area) – Within the countryside development will only be permitted where it is in scale and keeping with the character and natural beauty of the landscape, is appropriate to its surroundings in terms of siting, scale, design, materials, external appearance and landscaping, would not result in a significant adverse effect on nature conservation or geological interests, and makes satisfactory arrangements for access, servicing, cycle and car parking.

Policy E3 (Area of Outstanding Natural Beauty) – Development within and adjacent to the Forest of Bowland Area of Outstanding Natural Beauty which would either directly or indirectly have a significant adverse effect upon the character or harm the landscape quality, nature conservation interests, or features of geological importance will not be permitted. Any development must be of an appropriate scale and use materials appropriate to the area.

Policy E7 (Protection of Water Resources) – Development proposal which would affect an existing watercourse will only be permitted where the water quality would be maintained or improved, and there would be no significant adverse impact on the landscape, nature conservation, recreation and amenity importance of the watercourse.

Policy E12 (Nature Conservation) – Proposal must take into full account any impacts upon wildlife, wildlife habitats, protected species and important geological features. Where development is permitted, developers will be required to minimise any adverse impact and/or create and provide for the appropriate management of compensatory wildlife habitats.

Policy E22 (Wind Farms) – partly superseded by the Core Strategy, states that proposals for the development of wind turbines will be assessed against their impact on the character of the landscape (including cumulative impact), nature conservation, historical conservation and nearby dwellings.

Policy E35 (Conservation Areas) – development proposals which would adversely affect important views into and across a Conservation Area or lead to an unacceptable erosion of its historic form and layout, open spaces and townscape setting will not be permitted.

Policies E44-E46 (Archaeology) – development proposals should take into account archaeological considerations and the need to safeguard important sites from damage or destruction. Development proposals that would have an adverse impact on the site or setting of a scheduled ancient monument or other monument of national importance will not be permitted. Other sites of archaeological importance will also be protected. When development affecting such sites is acceptable in principle, a scheme for mitigation of damage should be secured to preserve the remains in situ, or where preservation is not justified adequate provision for investigation and

recording before and during development will be required. An archaeological assessment and/or evaluation will be required as part of the planning application to make adequate assessment of the nature, extent and significance of the remains present and the degree to which the development is likely to affect them.

6.5 Lancaster District Core Strategy (LDCS) - adopted July 2008

Policy SC1 (Sustainable Development) seeks to ensure new development proposals are as sustainable as possible, minimise greenhouse gas emissions and are adaptable to the likely effects of climate change. This policy requires development proposals to be integrated with the character of the landscape and where appropriate enhances biodiversity. The use of renewable energy technologies and the efficient use of land (previously developed land) are measures promoted by this policy.

Policy SC3 (Rural Communities) seeks to build healthy sustainable communities by empowering rural communities to develop local vision and identity, identify and need local needs and manage change in the rural economy and landscape. Development should protect, conserve and enhance rural landscapes and the distinctive characteristics of rural settlements.

Policy SC5 (Achieving Quality in Design) – proposals should maintain and improve the quality of development in Areas of Outstanding Natural Beauty, Conservation Areas and other rural areas. New development should reflect the positive characteristics of its surroundings including the quality of the landscape.

Policy ER7 (Renewable Energy) seeks to maximise the proportion of energy generated in the District from renewable sources where compatible with other sustainability objectives. The need for renewable energy must be balanced against landscape impacts, local amenity, habitats and species, farming and land based industries and local transport networks.

Policy ER1 (Higher and Further Education) states that Lancaster University is the Districts most important economic asset and its continued growth is important to the District and to the Region. This policy seeks to support the continued expansion of Lancaster University within the existing built-up part of the campus and, outside this area, where special justification is demonstrated.

Policy E1 (Environmental Capital) – its purpose to improve the District's environment by:

- protecting and enhancing nature conservation sites and landscapes of national importance, Listed buildings, conservation areas and archaeological sites
- minimise the use of land and non-renewable energy
- resist development which would have a detrimental effect on environmental quality and properly manage environmental risks such as flooding,
- ensuring that development in the city of Lancaster and other historic areas conserves and enhances their sense of place
- protect and where possible enhance habitats and the diversity of wildlife species, and conserve and enhance landscape

Policy E2 (Transportation Measures) – ensuring all major development proposals are accompanied by enforceable measures to minimise and mitigate the transport impacts of development.

7.0 Comment and Analysis

7.1 The principle issues for Members to consider in the determination of this application are namely:

1. The benefits and contribution that the proposal would make to achieving regional and national targets for renewable energy generation; and the extent of compliance with the national, regional and local policies listed in section 6;
2. The effects of the proposal upon the character and appearance of the landscape; and the extent of compliance with the national, regional and local policies listed in section 6;
3. The effects of the proposal upon biodiversity and habitat; and the extent of compliance with the national, regional and local policies listed in section 6;

4. The effects of the proposal upon the living conditions of nearby local residents, particularly in terms of visual impact, noise and shadow flicker; and the extent of compliance with the national, regional and local policies listed in section 6;

Other issues associated with the development will also be discussed however it is the above issues which are of particular significance.

7.2 Renewable Energy

The Climate Change Act 2008 was put in place to set legally binding targets for the UK to reduce carbon dioxide levels to 80% less than 1990 levels by 2050. The UK Government has also set a target of 10% electricity to be generated by renewable energy sources by 2010, rising to 15% by 2015 and 20% by 2020. These targets are set out in PPS22 and adopted in the RSS. The RSS provides a breakdown of these targets for each County by renewable energy type. For example in 2010 Lancashire should be generating 195MW of electricity from onshore wind turbines, increasing to 233MW in 2015. To date, the total operating capacity in Lancashire amounts to 146.8MW with an additional 9MW having the benefit of planning consent (excluding small scale and micro-generation schemes). This is a shortfall of 39.2MW to meet the 2010 targets for the County. At present the UK is not set to meet the national targets and the Region is equally unlikely to meet their targets.

The struggle to meet targets across the Country has led to the publication of the UK Low Carbon Transition Plan 2009 and the UK Renewable Energy Strategy 2009, which is likely to lead to adoption of a new national planning policy - ***Planning for a Low Carbon Future in a Changing Climate***, superseding PPS1's companion guide and PPS22. The UK Renewable Energy Strategy 2009 maps out the UK's Government Strategy for reaching the EU target of 15% of the UK's total energy consumption from renewable by 2020, from the current level of around 2%. It also increases electricity targets from current levels and puts greater focus on total energy consumption as well as electricity.

The above policies and targets emphasise the growing need for renewable energy installation in both the Region and the UK as a whole.

Lancaster University is the Districts most important economic asset and its continued growth is important to the District and the Region. The University are committed to UK Government targets of reducing carbon emissions and recognises that sustainability and a reduction in carbon emissions is an essential part of their future growth and development. Lancaster University's Energy and Carbon Management Plan (2009) sets out the University's principal strategy to manage carbon emissions in future years and has been developed as part of the Higher Education Carbon Management Programme process. In addition, the University also have a Sustainable Energy Strategy (2007) which forms part of their infrastructure Masterplan.

The total electricity consumption of Lancaster University in the year 2008/2009 was 32.3 GWh (32,300 MWh). The primary function of the proposed wind turbines is to harness wind energy to create a clean and sustainable source of electricity to replace part of the University's grid supplied electricity. The installed capacity of the development will be 4.1MW which will generate an electrical output of approximately 10,755 MWh per annum. This represents around one-third of the University's total electrical consumption. In turn it will also prevent the release of 5743 tonnes of carbon dioxide. It is quite clear that the proposal would contribute towards meeting the RSS targets and such would conform to Regional polices EM17 and EM18, together with national and local policy.

7.3 Efficiency of Wind Energy Development

The companion guide to PPS22 indicates that the principle of harnessing wind energy by wind turbines is well established and that there is no doubt about the technical feasibility of wind power. In addition, it states that the UK is particularly well placed to utilise wind power. Unlike many universities, Lancaster University's rural setting places it in a unique position whereby the utilisation of wind power will make for very high yielding from a sustainable energy resource and as such will make a significant contribution to the Governments targets for reducing carbon emissions.

Throughout the consultation process, one of the key objections from the public was the perceived ineffectiveness of wind technology and concerns about carbon emissions produced during the construction, transportation and installation of wind turbines. Some members of the public also

stressed that turbines of this scale should be located offshore or form part of larger wind farms. Whilst these are valid points, PPS22 clearly states that wind energy development is accepted as a vital method for meeting energy demands of the country. PPS22 also states that planning authorities should not reject planning applications simply because the level of output is small – they still provide a limited but valuable contribution towards overall outputs. Similarly, the potential to generate substantial amounts of renewable energy from offshore projects should not be used as a justification to set lower targets for onshore projects. Notwithstanding this, the points raised effectively question the validity of wind technology and their role in renewable energy production as a whole. These are not material planning considerations. Robin Brooks, the Planning Inspector on the recent Sillfield appeal reported:

“...the precise nature of climate change, the contribution that wind power can make to averting such change, its inherent efficiency, the scale of carbon dioxide savings...are matters for the political arena rather than a planning [application]”.

It is abundantly clear in current planning policy of the scale and urgency to tackle climate change. It is equally clear that the benefits of renewable energy proposals should be given significant weight in the determination of planning applications. In this context, the output from the proposal and its overall contribution to meeting regional targets for the production of energy from renewable sources is acceptable and complies with the relevant policies listed in section 6 of this report. How these benefits balance against other material considerations will be discussed in the following sections.

7.4 Landscape and Visual Impact

The applicant has carried out a thorough Landscape and Visual Impact Assessment (LVIA) as part of the Environment Impact Assessment and has undertaken this with regard to best practice and relevant legislation, policy and guidance using drawings showing the Zones of Theoretical Visibility (ZTV's), wireframe visualisations and photomontages. It is noted that the ZTV drawings and wireframes are based on bare ground conditions and as such represent the worst case scenario; they exclude any localised screening or intervening structures and therefore fail to take account of anything that lies between the viewpoint and the turbine. The use of photomontages helps illustrate a more representative view and is therefore common practice when dealing with applications of this type. The methodology employed in the submitted LVIA is considered adequate.

Firstly, it should be noted that there is a distinction between landscape impact and visual impact. The former is the degree to which the site and the immediate landscape setting can accommodate change with regard to effects on its fabric, character and quality. Visual impact of the proposal relates to how the proposal will change the character of available views and change the visual amenity of visual receptors.

The submitted LVIA identifies three main objectives:

1. to identify the effects of the development on the landscape character of the area;
2. to identify the effects of the development on the visual amenity of the area;
3. to identify any cumulative effects the development will have on visual amenity.

7.5 Landscape Character

The application site is located adjacent to the M6 motorway corridor south of Lancaster within the rolling lowland landscape of the nationally recognised Bowland Fringe and Pendle Hill landscape character area (No.33), adjacent to the Morecambe Bay and Lune Estuary character area (No.31). The key characteristics, amongst many, of the Bowland Fringe and Pendle Hill include:

- undulating rolling landscapes;
- Small to medium-sized fields enclosed by well maintained hedgerows and mature trees;
- Extensive semi-natural woodland, on both valley bottoms, sides and ridges;
- Meandering, tree-fringed watercourses with oxbow lakes within predominantly pastoral landscape;
- Dense north-south communication corridor (M6, A6, railway line and Lancaster Canal)
- Small villages, hamlets, scattered farmsteads of local traditional vernacular

The site is situated in an area which is a pinch point in the region between these two landscape character areas and could be described as a communications corridor where transport (M6, A6 and railway), services and communications routes come together. As a consequence, transmission lines, electricity pylons, the M6 motorway form prominent features in the landscape; together with the larger buildings on the university campus (Bowland Tower) and distance views of Heysham power station.

With the exception of the above nationally recognised character areas, the site is not located within any national or regional landscape designation. It is however only 1.4km from the Forest of Bowland Area of Outstanding Natural Beauty.

The Lancashire County Council Landscape Character Assessment 'A Landscape Strategy for Lancashire' (2000) has provided baseline information for the submitted LVIA. This document defines a number of Landscape Character Types (LCT), which are then sub-divided into Landscape Character Areas (LCA). The development site falls within two landscape character types (LCTs). The northern half of the site falls within LCT7: Farmed Ridges and LCA7c: Langthwaite Ridge. The southern part of the site falls within LCT12: Low Coastal Drumlins and LCA12c: Carnforth–Galgate – Cockerham.

The characteristics of the two character areas are quite distinct. Langthwaite Ridge which has an orientation of north south appears relatively low in comparison to the backdrop of the Bowland Fells. The distinctive round-ridged profile with wooded sides sets it apart from the adjacent low lying drumlin field. The mix of farmland and woodland is typical of this character type and in this location is noticeably visible from distance views. The main characteristics of the Low Coastal Drumlin LCT (LCA12c) is that of low lying land extending behind the coast from Morecambe Bay between Cockerham in the south and Carnforth in the north. This landscape supports an extremely high proportion of the built up areas of Lancaster and Morecambe and as such provides a convenient transport corridor (M6, A6, and mainline Railway) which run side-by-side in a north south orientation.

The Landscape Sensitivity to Wind Energy Development in Lancashire (Lovejoy, 2005) provides strategic guidance on the sensitivity of Lancashire's landscapes to wind energy development. The application site falls within LCT's which are identified to have a moderate-high sensitivity to wind energy development. Notwithstanding sensitivity, the potential scale of wind energy development considered most appropriate in these LCT's is identified as small to possibly medium scale (small scale 2-5 1.3MW+ turbines), although this is clearly subject to other material considerations and the site specific sensitivities, which may or may not demonstrate a smaller or greater capacity than that indicated in the Lovejoy report.

In terms of the effects of the development on landscape character, the applicant has demonstrated in the submitted LVIA that there would be both direct and indirect effects associated with the proposed development. The direct effects principally relate to the impacts to landscape fabric associated with the construction stages of development, access tracks, crane pads etc, but more importantly in this case the loss of hedgerows, woodland and veteran trees. This issue will be discussed in more detail in the biodiversity section of the report. Notwithstanding this, the loss of trees, woodland and hedgerows would have a significant adverse effect on the fabric of the landscape, contrary to the conclusions drawn in chapter 6 of the ES. The Councils Tree Protection Officer has objected quite strongly to the loss of the woodland commenting that the woodland provides significant historic, arboriculture and landscape value. The applicant has proposed significant mitigation for the tree loss but it is obvious, in the short term, that there will be a significant impact to the character and visual appearance of the area; the landscape/amenity value the trees provide now, if removed, cannot be replaced within a single generation.

With regards to the landscape effects of the development on the Langthwaite Ridge, it is clear there will be a substantial magnitude of change to the fabric, character and quality of the landscape within a 4km range which would result in significant indirect effects. The magnitude of change in relation to views within 5km of the Galgate-Cockerham-Carnforth LCA would be moderate leading to a major/moderate effect, again resulting in significant indirect effects.

The LVIA has also assessed the landscape effects of the development on neighbouring character areas, concluding significant landscape effects would apply to areas within approximately 5km of the site, although the composite effects for each of these character areas would not be significant.

The areas of potential visibility within the AONB are in the southern and western parts of the designation, predominantly within 10km of the application site. Due to the close proximity of the site to the AONB the magnitude of change within 5km would range from moderate to substantial however the overall effect would not be significant. The Joint Advisory Committee for the AONB has not objected to the development. Natural England comment that there would be an effect on the AONB but not sufficient to justify a refusal. Subsequently, the likely effects on landscape value of the setting of the Forest of Bowland AONB would be considered not significant. PPS22 states that renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily. Designated landscapes are generally afforded greatest protection which in itself means sites outside of such designated areas are more likely to become under pressure to develop and when under growing pressure to support renewable energy proposals, we are going to have to accept such development in non-designated areas possible more often.

One of the key principles of PPS7 is to protect the countryside for the sake of its intrinsic character. Similarly, both regional and local planning policy seek to protect and enhance environmental assets and ensure new development is scale and keeping with the character and natural beauty of the landscape, is appropriate to its surroundings. There is no doubt that the character and appearance of the landscape would fundamentally change and the countryside in this location would be significantly affected. However, the site in question does not occupy a completely uninterrupted landscape. The site is situated in a transitional landscape dominated by communications infrastructure and transport networks. The presence of large pylons, the university buildings (Bowland Tower) and the motorway on either side of the site already have a massive impact on the character of the landscape. However that said, the character of Langthwaite Ridge would dramatically change and would represent a 'wind farm landscape'.

7.6 Visual Effects

Visual effects are concerned wholly with the effect of the development on views and the general visual amenity as experienced by people (receptors). Visual effects are assessed in relation to viewpoints, settlement, properties, tourist and recreational destination and transport routes. The proposed development will be visible from many aspects within a 5km range. The most prominent views will be from the motorway heading northbound and from nearby roads and properties within approximately 1km. The site will also be visible from the adjacent golf course and nearby public rights of way. There are a number of individual residential properties that will have clear site of the proposed turbines. The impact on residential amenity will be discussed under a separate heading.

In terms of visual landscape impact, there would be a significant localised landscape impact associated with the development. The two turbines will appear out of proportion with the small intimate character of the landscape and will dominant the skyline on approach to the site. Due to the low lying character of the landscape where the turbines will be sited, and the character of the adjacent landscape types, the turbines when viewed on approach to the city will have no backdrop and will tower above other vertical structures in the area, such as Bowland Tower and electricity pylons. As noted earlier the sensitivity to wind farm development in this location is regarded moderate – high, despite there being capacity for small scale – medium scale development. The principle of development has not raised immediate objection, however the design and scale of the proposed scheme has raised significant concerns from both the County Council Landscape Officer and Natural England. Despite a reduction to the height of the turbines (from 123.7m at the EIA scoping stage), the County Landscape Officer remains of the opinion that the site and its surrounding landscape does not have the capacity to accommodate a wind farm at the proposed scale. This in the main is due to the relatively small scale of the ridge that the development site is situated, the presence of nearby scale comparators, the landscapes inherent level of sensitivity and the small scale and complex landscape character. These concerns are considered to be exacerbated by the juxtaposition of the turbines over different levels (45AOD and 90AOD), their scale at 100m high and their wide spacing. It is clear that the position of the turbines in relation to each other is not ideal and makes it difficult to read the turbines are one scheme. However, due to site constraints the locations of the proposed turbines are not flexible and as such there is little that can be done to improve the overall design of the scheme.

In terms of the visual effects of the development from nearby settlements, both Bailrigg and Galgate shall experience a major and significant effect. The hamlet of Bailrigg is only 700m from the nearest turbine (northern) but is separated from the site from the motorway. Galgate is some 1.3km from the

turbines. The eastern edge of the settlement is most likely to be affected.

The visual impact from the motorway and adjacent roads is considered not significant. From the Lancashire Coastal Way the LVIM concludes a slight to moderate visual effect despite possible significant effects from viewpoints within 5km. It also concludes slight to moderate visual effects from national cycle route 6 and regional cycle route 90. Notwithstanding this, the overall effects on these routes would not be significant.

The impacts on landscape fabric have been carefully considered and where necessary mitigated, i.e loss of woodland. During the construction and decommissioning phases of the development there is to be significant impacts on the visual appearance of the landscape, these include the large areas of hardstanding required to transport, store and install the turbines. The access track, foundation base to turbine 2 (southern) and overrun areas at the access shall be constructed using a form of grasscrete, the storage compound and spoil areas will be restored and returned back to agricultural use or incorporated into the habitat mitigation plans. The only areas of hardstanding will be the access track at the crest of the hill, which will be screened in part by the proposed planting, and the base and crane pad located at turbine 1. In the long term this impact, whilst not completely reversible, will not have a significant impact on landscape fabric.

It is understood, that landscape concerns raised by the County Landscape Officer and Natural England could be overcome, if the proposal was for one turbine on the site (the northern turbine). Notwithstanding this, as the application stands at present there would be an adverse impact on the character and appearance of the countryside area, contrary to policy PPS1, PPS7, DP7, EM1, E4, E22, E1 and SC3.

7.7 Cumulative Landscape and Visual Effects

The proximity of the proposed turbines to other wind farms has been assessed and forms an important part of the ES. Neighbouring wind farm/turbines considered consist include Caton Moor which are located approximately 9km north east of the proposed site and the consented turbine at Dewley Cheese in Garstang, some 13km south of the proposed site. All three sites are located within different LCAs substantial distances away from one another. In view of this they are able to co-exist without transformation of landscape type and coalescence of character. No objections have been raised in respect of cumulative landscape and visual effects.

7.8 Biodiversity

One of the key aspects of the proposal is the impact the turbines will have on the biodiversity of the area having regard to the relevant legislation and policy. The proposed site comprises agricultural land dominated by grassland, which is intersected by hedgerows and partly bound by mature woodland. There is also a small stream running down the eastern boundary of the site. The site therefore provides a diverse array of habitats for both flora and fauna. The application site falls outside any special designation, however in order to facilitate turbine 2 (southern turbine) 0.39 ha of woodland has to be removed, together with 606m of hedgerow and the culverting of the stream. The ecological impacts of this alone are profound but coupled with the turbine development make this issue a significant concern in the determination of the application. In accordance with PPS9, the applicant must demonstrate where harm or damage is unavoidable, mitigation and compensation for the harm or loss must be commensurate.

In order to mitigate for the loss of veteran trees, woodland, hedgerows and open watercourses, a detailed habitat mitigation/landscaping plan and management strategy have been submitted. This indicates 0.79ha of proposed new planting, 1.74 hectares of woodland and scrub provided by natural regeneration, and approximately 1090m of hedgerow is proposed. To compensate for the loss of 3 veteran trees, 60 replacement trees are also proposed. The mitigation proposals have been designed to protect and enhance existing habitats, provide new habitats in locations far enough away from the turbines, in particular avoid the blade sweep of the turbines, and to improve habitat connectivity. All of the proposals identified have now been accepted by Natural England and the County Ecologist.

The element of the scheme which has raised most concern relates to the culverting of the stream at the southern end of the site and the potential loss of water habitat. Stream alignment was initially considered but due to the buffer zone required around the blade sweep of the turbine and the

topography of the site this was considered and unfeasible option. Alternative wetland habitats have been considered, including stream alignment and the creation of ponds elsewhere on the site, however concerns have been expressed that these could result in additional movements of birds and bats in close proximity to the blade sweep buffer zone and may pose further risks to biodiversity and as such have been discarded. One specific option considered was the creation of a pond in the triangular section of field located south west of the southern turbine. This presented a number of problems:

1. The pond (wetland habitat) would not be connected to the existing stream – loss of habitat connectivity;
2. The creation of a larger pond anywhere on the site would encourage birds and bats to travel across or within the blade sweep area/buffer zone – risk to biodiversity not enhancement;
3. The triangular area of land is currently farmed by a tenant farmer. With the exception of the construction and decommission stages of the development, this section of land needs to remain in productive agricultural use. A balance needs to be made with regards to further land take to accommodate the habitat proposals.

Despite the objections received from the Environment Agency, Natural England and the County Ecologist have accepted that the culverting of the stream to the southern end of the site is the only option. As compensation for the culverting of the stream it is proposed to create an oxbow pool that will be developed to provide potential water vole habitats. Enhancements to the northern section of the stream will also provide adequate mitigation. The proposed landscape and habitat mitigation plans are significant and from a biodiversity point of view adequately compensate for the moderate-high impacts anticipated. The compensatory measures are therefore considered commensurate. In the long term it is unlikely that there would be any risk to biodiversity as a consequence of the proposed development - if anything biodiversity should be enhanced, provided the management plan is implemented, monitored and reviewed in accordance with the detail submitted. The application has adequately addressed and mitigated for the impacts on biodiversity and as such the proposal is considered compliant with PPS9 and the relevant regional and local policy listed in section 6. Conditions would be required to ensure the habitat management plan is implemented, together with conditions for tree protection, landscaping, and the felling of woodland to occur outside breeding seasons.

7.9 Visual Impact and Residential Amenity

There are a number of residential properties in very close proximity to the proposed turbines. Issues such as shadow flicker, noise and visual impact are a serious concern.

7.10 Shadow flicker

Shadow flicker is the effect of the sun shining behind rotating blades and creating an intermittent shadow inside nearby buildings. It only occurs when certain meteorological, seasonal and geographical conditions prevail – as such it does not occur very often. However, when it does it can be a source of nuisance. There is no guidance available regarding what levels of shadow flicker may be considered acceptable in the UK. In the absence of this guidance, the applicant has adopted a generally accepted maximum figure of 30 minutes per day; 30 hours per year; or 30 days per year which ever is the greatest. These guidelines are derived from guidance applicable in Germany. As such the applicant has suggested that a significant effect only occurs above these thresholds. The submitted ES indicates that worst case scenario and expected levels of shadow flicker at 21 receptor points. 12 of these 21 points were above the threshold and therefore could have a significant effect. Whilst the applicant suggests that the timing of the potential shadow flicker could help mitigate the significance of the phenomenon. For example, when people are generally away from home (working hours), or early in the morning when people may still be asleep. This alone is not adequate mitigation and would not prevent undue harm to residential amenity. As such, if Members are minded to approve the development, this is a matter which could be appropriately addressed by a condition. This effectively requires a control system to be employed as part of the wider turbine control system to calculate whether shadow flicker may affect a property based on pre-programmed co-ordinates for the properties and wind turbines, and the intensity of sunlight. When the control system calculates that the sunlight is bright enough to cast shadows and the turbine shadows fall on a nearby property, it automatically shuts the turbine down, restating when the shadow has moved away from the property.

Concerns regarding light reflection can be adequately mitigated by conditioning the final colour and finish of the turbine to ensure it has an anti-reflective matt finish.

7.11 Noise

Due to the proximity of the development to nearby residential properties, the issue of noise has been a serious consideration. As such the Council appointed an independent environmental noise consultant to verify the submitted acoustic information and undertake further background noise checks.

In accordance with PPS22, the submitted noise assessments carried out by the applicant and the Council's consultants have had regard to the methodology and guidance in ETSU-R-97. Whilst the document is ten years old, it has become the de-facto standard for assessing the noise from wind farms and as such is appropriate in this case.

PPS22 Companion guide requires that turbines should be located so that increases in ambient noise around noise-sensitive developments are kept to acceptable levels, in comparison with background noise levels. Noise from modern wind turbines, particular the RePower types indicated in the application, will be associated with aerodynamic noise only. Tonal noise from mechanical components has virtually been eliminated from modern machines.

ETSU-R-97 suggests that noise from wind energy developments in terms of 10 minute LA90 index should be limited to 5dB above prevailing background noise levels during the day (07.00h – 23.00h). During the night, the lowest night time limit for wind farm noise should be 43dB (LA90) or 5dB above night-time prevailing background noise.

In this case it is surprising how high the existing background noise is. This is clearly a consequence of being close to the M6 motorway. Many of the nearby residents have raised concerns about noise associated with the turbines and the background noise levels indicated in the ES. The consultants acting on behalf of the Council have verified the applicant's data and from their own measurements they indicate that they would have no reason to differ from the developer's description of the noise environment or the predictions made in ES. All nearby properties fall within the range prescribed by ETSU-R-97 and as such it is unlikely that the proposed development would have any adverse impact on nearby residents in terms of noise disturbance. Conditions can be imposed to ensure noise levels do not exceed the accepted limits. This would safeguard the residents of nearby dwellings in terms of noise.

Concerns regarding Ultra Low Frequency Sound (ULF) or infrasound are unlikely to be substantiated. The Council's noise consultant has considered this in their report and concludes that there is no evidence that ground transmitted ULF sound from wind turbines is at sufficient levels to be above perception levels within residential properties [let alone be harmful to human health], nor that ETSU-R-97 is deficient in this respect.

7.12 Visual Impact

Due to the proximity of the turbines to nearby residential dwellings it is understandable that local residents have stressed significant concern. Unlike Scotland and Wales, there are no standard separation distances for wind turbines in relation to nearby dwellings. It is also clear from recent appeal decisions (Gargreave, Sillfield and Carlisle) that Inspectors are paying greater regard to the effects of wind turbine development on the living conditions of nearby properties, particularly within c650m from wind turbine development. With due consideration to these decisions, and by judging the submitted application on its own merits, the development is considered to have a significant impact on several nearby properties. Turbine 2 presents the greatest level of concern. Here there are six properties all virtually within 350m of the southern turbine, with the nearest property only 255m away. The case officer has visited the properties most affected by the development to assess the impact on residential amenity.

Eastrigg is positioned 255m from turbine 2 with its principle elevation, primary living windows and garden area facing directly towards the turbine. There is no doubt in this location that turbine 2 would have a significant adverse effect. The outlook from this property would be completely dominated by the 100m high rotating turbine which would be exacerbated by the removal of woodland. In view of this, the proposed turbine would be significantly detrimental to the residential

amenities of this property. There is no mitigation that would remove this concern. The northern turbine is also relatively close to the property (c 500m). At present the rear garden is not used for domestic purposes, although it could be should the occupier wish to do so, and is used for grazing sheep. If the area was utilised as garden the turbine would be clearly visible, however given that the main aspect of the garden faces east there could be mitigating factors that would regard this relationship acceptable.

1 and 2 Hazelrigg Barns are located within 279m of the southern turbine. These two properties form a group of barn conversion. For the purposes of clarification, the southern barn (no. 1) has a granny annex associated with it which forms nearest part of the dwelling to the site. The barns are positioned fronting Hazelrigg Lane with their principle elevations overlooking the landscape towards the AONB (east). The rear elevations face the application site but to a certain degree are screened by the belt of woodland which runs down the eastern boundary of the site. Notwithstanding this, the ground floor windows to the granny annex, first floor windows to the adjacent barns and private garden areas would be affected to an unacceptable degree. The turbines would be overbearing and intrusive and significantly harmful to the enjoyment of their dwellinghouses and associated garden areas. To my mind this relationship and perception of overbearingness would not diminish over time and can not be mitigated. The presence of existing woodland and outbuildings would not provide sufficient screening. At such close proximity the turbines would tower above the adjacent outbuilding buildings and woodland dominating the views from these properties and gardens to the point where living conditions would be completely blighted by the development. The northern turbine is located further away but on elevated land. This turbine will not be visible from rear or front windows but may be visible from gardens. As a consequence of the orientation of these properties this turbine alone is unlikely to cause undue impact. However the fact that both turbines will be visible in both north and south aspects from the rear gardens exacerbates the overbearing and inappropriate relationship this scheme has with these nearby residential properties.

Hazelrigg House is located 304m to the southern turbine and approximately 450m to the northern turbine. The principle aspect and primary windows of this property face east towards the AONB and south towards the application site. The garden wraps around the west and north of the property and as such will suffer the impacts of two turbines in extremely close proximity with approximately 20m difference in land levels from the northern turbine. The combination of both represents a significant impact. There are no habitable windows facing the northern turbine but several facing the southern turbine – some of which will be screened or obstructed by intervening vegetation and outbuildings on the adjacent plot however the prominence and sheer presence of such large, moving structures would be severely damaging to the living condition of those residents.

Barrow Greaves Farmhouse and bungalow are located to the south of the application site beyond Hazelrigg Lane. These two properties are situated in the valley bottom with the two turbines situated on significant higher land to the north. Views from principle windows of both the bungalow and farmhouse will be adversely affect together with garden areas. The garden to Barrow Greaves is enclosed by the house itself to the east and agricultural buildings to the south and southwest. The main aspect from this garden shall face north directly up towards the proposed turbines. The southern turbine is within 356m of this property on elevated land. The main outlook from Barrow Greaves farmhouse garden would be a landscape completely dominated by wind turbine development. At this close range, this can not be regarded acceptable in planning terms.

There are a number of residential units located at Blea Tarn situated approximately 590m north east of the northern turbine at c105m AOD. The building facing the application comprises maisonette accommodation. To the rear of this building are two converted barns with a bungalow located to the east of the main building. The principle windows of the converted barns are in the large restricted from views of the turbines, other than a large window on the western barn which faces south. This is a single storey building with floor levels set lower than ground levels at Blea Tarn Farm. As such whilst the turbine will be visible from this location, there are boundary trees which wood protect intervening screening to the extent that the harm would not be significant. Beachcroft (the bungalow) is orientated west east and as such has the benefit of principle views to the east. Whilst the turbine would be visible from the access track and gardens the nature of surrounding boundary treatment and the presence of other large manmade structures in the immediate vicinity, it is unlikely the turbines would cause significant undue harm to residential amenity. Blea Tarn Farm however has principle windows facing the northern turbine. Notwithstanding this the turbines will be in peripheral vision as a large pylon immediately in front dominates views in this location. This in itself does not mitigate the impact of the turbines. It is considered in this location that the presence of

both turbines and their relationship to one another, in relatively close proximity to this property would exacerbate an already cluttered and interrupted landscape which is regarded harmful to the residential amenities of occupiers of the maisonettes at Blea Tarn Farm. The design of the turbines, i.e their separation and different heights as a response to the site contours, intensifies the concerns in this case with the turbines appeared stacked on top of each other. From both up-close and distant viewpoints in the location, amongst others, views will be obstructed by effectively the diameter of rotating blades of one turbine on top of the other.

Kit Brow and Studley Hill off Kit Brow Lane are approximately 720m south east of the application site. These properties have main garden areas and principle windows facing north and west. These properties are situated on slighted elevated land but will have both turbines in their main sight of vision, particularly from the first floor lounge and balcony of Studley Hill. In this regard, despite the 720m separation from the southern turbine, the orientation, topography and lack of intervening structures would mean the development is detrimental to their residential outlook.

In addition the above properties, there are many others that will have clear views of the wind turbines which is inevitable in an urban fringe location such as this. However the majority of these properties are over 800m from the site and generally enjoy other views from main windows and garden areas.

The applicant has provided additional residential amenity surveys in light of recent appeal decisions and the concerns raised by Officers. Equally, Officers have viewed the site from numerous properties and consider that the appearance of turbine 1 and the combination of turbine 1 and 2 from some sites would be detrimental to residential amenity. The appearance, design and scale of the turbines at close quarters, together with the motion of turbine blades would be intrusive and intimidating and would significantly detract from the enjoyment of both houses and gardens surrounding them. There is little in the way of mitigation which would resolve these concerns.

7.13 Other Matters – Highways And Access

Highway implications associated with wind turbine development are concentrated over three phases; construction; operation and maintenance and; decommissioning.

The submitted highway/traffic chapter within the ES considers all three phases. The site is situated on the eastern side of the M6 motorway, adjoining Hazelrigg Lane approximately 1.7 miles north of Junction 33 of the motorway.

The primary highway considerations relating to wind turbine development focus on the transportation of the turbines to and from the site during construction and decommissioning stages. In this case, the route shall be run from the M6, along the A6 through Galgate to the hazelrigg/A6 junction at the southern end of the University campus. This was considered the most appropriate route – leaving the M6 at junction 34 has been discounted due on inaccessible points through the centre of the city.

Highway and transportation issues are principally associated with abnormal loads; the blades come in one piece and as such require vehicles which can accommodate 41m blades. Swept path analysis has been carried as part of the proposal to demonstrate ease or adaptation required to existing road networks, to deliver the turbine parts to the site. As part of the route analysis the route from the M6 has been broken down into 9 legs. The route from the M6 to Scew Bridge (Galgate) is relatively straight forward, other than the transport vehicle overrunning opposite lanes or preventing vehicles taking-over. At Scew Bridge (West Coast main Line Masonry Arch) abnormal loads will overrun both lanes and the pedestrian kerb line. Due to the width of the road and the dimensions of the abnormal load vehicles, vehicles travelling in the opposite direction will be forced to slow down and give way for this vehicle. There is no physical impact on the network at this point, other than a street light on the western side of the road needing to be temporarily relocated and on-street parking to be regulated during transportation stages. At the junction of the A6 and Hazelrigg Lane, signals, bollards, signs and pedestrian guards will all need to be removed to allow the vehicle to overrun when manoeuvring and turning right into Hazelrigg Lane. Once on Hazelrigg Lane, the abnormal loads will predominantly extend across both lanes until the vehicles have entered the site.

The formation of the site access is noted in the proposal section of this report. The main issue associated with this is the impact this has on the character and appearance of the landscape. This has been noted in the section on landscape impact. County Highways have raised no objection to the proposal, subject to relevant conditions ensuring that the effects on the highway network during

transportation is minimised. This will require the applicant to agree a Transport Management Plan with the local planning authority.

The traffic generation associated with component transport equates to:

- 4 abnormal load vehicles for the transportation of the tower sections;
- 3 abnormal load vehicles for the transportation of the turbine blades;
- maximum of 3 abnormal load vehicles for the transportation of the nacelle, rotor hub and drive train;
- 4 HGV vehicles for miscellaneous internal and external equipment.

There will be a in the region of 60 additional HGV trips associated with the preparation of the site (crane pads and foundations), together with approximately 20 heavy goods vehicles for the connection of the equipment to the grid.

The construction of the turbines and associated work is anticipated to take 5 months and as such, whilst there will inevitably be some disruption to the local road networks and neighbouring properties, this would be in the short term.

Operation effects mainly relate to the impact of the turbines on drivers; driver distraction. County Highways and the Highways Agency have raised no objection to the proposal. The Highways Agency is satisfied that because long range views of the turbines can be obtained there would be no adverse impact upon safety of the users of the M6 motorway. PPS22 Companion Guide states in paragraph 54 covers this issues and states:

'At all times drivers are required to take reasonable care to ensure their own and others' safety. Wind turbines should therefore not be treated any differently from other distractions a driver must face and should not be considered particularly hazardous'.

The turbines are positioned to adhere to the required set-back distances and as such raise no highway objections. Once operational there are very few traffic movements associated with the development other than periodic checks and maintenance.

The decommissioning of the wind farm once the 25 year lifespan has been reached will take place over an estimated 3 months and will in part be a reverse of the commissioning stages of development.

7.14 Other Matters - Socio-Economic Implications

There have been a number of concerns raised regarding the impact of the development on nearby businesses, tourism and the local economy. The submitted ES has provided a thorough assessment of likely socio-economic impacts, concluding that any effects would occur at the local and regional level and are deemed to be minor and in the short term not significant. There will be clear employment opportunities associated with the development (construction, supply chain and indirect and direct financial savings it offers to the University). It is also thought that the development would contribute positively towards improvements towards the socio-economic profile of the area. There is no reason to believe that wind turbine development will adversely affect the local economy and tourism in particular. Indeed the reverse may be the case.

Concerns' regarding the impact of wind farms on animals has been raised by nearby residents, in particular Valley View kennels and local residents with horses. Unfortunately there is no legislation or guidance regarding this matter to comment. However, it is noted in the submitted ES that the high frequency tonal noise associated with turbines, which may affect animals, is unlikely to occur in this case as noted in the noise section of this report.

With regards to tourism, there are no public rights of way affected by the development, other than those footpaths identified to experience visual effects within certain ranges of the development. The proposed golf course sits immediately adjacent to the site where the turbines will be visible. The effects of the turbines on recreation and tourism uses in the area depend on the attitude of the individual (receptor). The information provided in the ES indicates through studies undertaken that the majority of the public are in favour of generating energy from renewable sources.

7.15 Other Matters - Archaeology/Historic Environment

The submitted ES has appropriately assessed the impacts of the development on the historic environment and archaeology to the satisfaction of the County Archaeologist submit to a condition requiring the implementation of a programme for archaeological works prior to the commencement of any works.

The indirect impacts of the installation of the turbines in relation to nearby listed buildings, Schedule Monuments, Registered Historic Parks and Conservation Areas has been undertaken within a 10km radius of the proposed site. Of the 30 sites considered, 24 may be visually impact by the development and of the 17 conservation areas study 15 may be affected. Whilst these sites are to be considered of high importance, the impact of the development would be indirect and temporary in terms of the lifespan of the landscape they sit in. As such the magnitude of the impact is considered to be small.

7.16 Other Matters - Aviation and Electromagnetic Interference

No objections have been received from the Ministry of Defence, the National Air Traffic Service, the Civil Aviation Authority or Blackpool Airport.

With regards to electronic interference, there are still ongoing discussions with the Joint Radio Company Ltd regarding interference with the adjacent National Grid Gas telemetry link. The outcome of these discussions will be verbally presented to Members.

With regards to television interference, there will be possible signal degradation 4km around each turbine to properties receiving from Lancaster broadcast station. Notwithstanding this, the best server for this area is Winter Hill not Lancaster. Winter Hill is not adversely affected and as this should not pose a problem.

8.0 Conclusions

8.1 National and regional planning policies, together with local planning policy seek to promote and encourage proposals of renewable energy development. PPS22 clearly states that the wider environmental, social and economic benefits of such proposals should be given significant weight in the determination of planning applications. However, all other material considerations must be considered and balanced against the benefits of the proposal.

There is no doubt that the proposal offers significant benefits and would wholly comply with national and regional policy with regards to its contribution towards meeting the UK's government targets. Having regard to the submitted Environmental Statement, planning policy and the consultation responses both statutory, non-statutory and neighbouring representations, the main issues to be weighed against the proposal are:

- Landscape and Visual Impact
- Ecology
- Residential Amenity

8.2 One of the key principles of PPS22 requires that proposals should demonstrate how environmental and social impacts have been minimised through careful consideration of location, scale, design and other measures. Similarly, national, regional and local policies seek to ensure the Districts environmental assets are protected and enhanced and where appropriate mitigated.

The University's application site is unfortunately constrained by a number of factors, such as habitat buffer zones and highway set-back distances, resulting in the proposed locations being virtually fixed. Whilst this may be the case, it does not necessarily indicate that they will be acceptable. Having undergone thorough consultation through the planning process, it is clear that landscape impact is one of the main concerns. A number of statutory consultees comment that the separation of the two turbines, their scale, the difference in heights as a consequence of the changes in land levels, and the presence of other vertical comparators in the landscape results in a significant effect. As set out in the analysis of this report, this results in the turbines appearing as two separate schemes and not one. The landscape is described as small, low lying, complex and intimate. There

is no doubt that the proposed turbines will appear out of proportion with the landscape, but with pressure to preserve and protect designated areas there is going to be ever increasing pressure to develop landscapes such as this. The presence of the motorway, electricity pylons and the university campus already have an urbanising effect on this rural landscape and as a consequence it may be possible that wind turbines in this landscape could be acceptable. The principle concern relates to the design of the scheme. Both the County Landscape Officer and Natural England have suggested in their responses that the site could accommodate one turbine rather than two in order to alleviate the bulk of the landscape objections. Notwithstanding this, a significant factor to be considered is the fact that the turbines have a lifespan of 25 years and after that it likely the land will be reinstated to its former condition within reason. A recent appeal Inspector comments that *'twenty-five years is a tiny proportion of the history of the landscape...and if landscape is to survive in the long-term future then consideration must be given to accepting short-term harm to its character'*. This is a valid point, and as such it is recommended that the short-term adverse effects on this landscape, which is already interrupted with other man-made features, is limited to a relatively small area and located outside any special designated area, and is therefore outweighed by the long-term environmental benefits of the proposal.

- 8.3 Despite objections from the Environmental Agency, the impacts on biodiversity are equally harmful in the short term, however the mitigation strategy proposed, together with long term management and monitoring of habitats and wildlife within the application area is considered commensurate and therefore compliant with PPS9. The loss of woodland from a visual amenity perspective is significant and one that can not be replaced within a single generation. However this loss is outweighed by the long-term environmental benefits of the proposal.
- 8.4 Finally, the impacts on residential amenity are considered profound particularly to the properties listed earlier in the report. Recent appeal decisions have concentrated on impacts of wind farms within generally 650m of properties and in most cases the impacts have been regarded unacceptable. The applicant has provided two cases where turbines have been located within 650m of nearby properties; one of these being the approved turbine in Garstang. There will clearly be cases where turbines will be accepted in close proximity to residential properties and others that will not, and in the absence of any specific guidance in legislation each case will have to be judged on their own merits. The proposed wind turbines are located extremely close to nearby residential dwelling. Whilst issues such as shadow flicker and noise can be appropriately addressed by condition, the issue of visual impact can not. In comparison to landscape impact, twenty-five years when consideration residential amenity is considered long-term. The proposed wind turbines would have a significant adverse effect on a number of properties, by virtue of their design, scale and sheer proximity to them. The proposed wind turbines would adversely affect their living conditions to a degree that would not be outweighed by the long-term environmental benefits of the proposal.
- 8.5 It is clear from the above discussion that the southern turbine is the most contentious in terms of landscape character, visual impact, biodiversity and residential amenity. The northern turbine presents landscape character and residential amenity concerns when considered in context with the southern turbine. There may be an argument to suggest that one turbine at the top of the site may eliminate the many of concerns in order for the benefits to outweigh the impacts associated with this turbine.

Given the above, Members are reluctantly advised that the proposed development cannot be supported.

Recommendation

That Planning Permission **BE REFUSED** for the following reasons:

1. The proposed development, by reason its of scale, design, close proximity and visual impact, would exert a significant harmful influence on the living conditions currently enjoyed by neighbouring residents and as a consequence is contrary to PPS22 and saved policies E4 and E22 of the Lancaster District Local Plan.

Human Rights Act

This recommendation has been reached after consideration of the provisions of The Human Rights Act. Unless otherwise stated in this report, the issues arising do not appear to be of such magnitude to override the responsibility of the City Council to regulate land use for the benefit of the community as a whole, in accordance with national law.

Background Papers

None.