AAH planning consultants

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

LANE END FARM, BRADNOP, LEEK, STAFFORDSHIRE, ST13 7HA

PROPOSED ERECTION OF 1 NO. 34.2M (TIP) HIGH WIND TURBINE INCLUDING ACCESS TRACK AND ANCILLARY KIOSK

CO-ORDINATES OF PROPOSED TURBINE:

X 402683, Y 354507

OUR REF: AAH/1907/13PLA

SEPTEMBER 2013

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1.0 Introduction and Methodology

1.1 AAH Planning Consultants has been commissioned to prepare a Landscape and Visual Impact Assessment (LVIA) for the planning application for 1 proposed wind turbine at Lane End Farm, Bradnop, Leek, Staffordshire, ST13 7HA. AAH Planning Consultants comprises professionally accredited individuals with extensive experience within wind and solar development. Our consultants are members of the Royal Town Planning Institute (RTPI) and the Institute of Environmental Management and Assessment (IEMA).

1.2 This Landscape and Visual Impact Assessment assesses the potential landscape and visual impact of the proposed turbine in isolation and in conjunction with other turbines in the vicinity. The turbine proposed at the application site would have a hub height of 24.6m and an overall height of 34.2m to the blade tip. The Landscape and Visual Impact Assessment is divided into the following sections:

- Introduction to the Methodology
- Zone of Theoretical Visibility
- Landscape Character Assessment
- Visual Impact Assessment
- Cumulative Visual and Landscape Impact
- Proposed Mitigation Measures
- Conclusion

1.3 The format of this assessment is based on the principles described in The Countryside Agency and Scottish Natural Heritage's Landscape Character Assessment Guidance for England and Scotland, published 2002, and The Landscape Institute and Institute of Environmental Management and Assessment Guidelines for Landscape and Visual Impact Assessment, Third Edition, published 2013. The assessment is also in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. The methodology used within this report is attached as Appendix A.

1.4 A desktop study was made of published information to establish the landscape context of the site and identify potential viewpoints which may be affected by the development. The photomontages are held at Appendix C and are referenced throughout this report.

1.5 The application site and surrounding area was visited on 20th August 2013, where the weather conditions were good with clear visibility. The photomontages have been developed using both wireframes and transparent pictures to fully understand the impact of the proposed turbine.

2.0 Site Location

2.1 The site is located within the open countryside, situated between Onecote (1.5km north east), Winkhill (3km south east), and the village of Bradnop (2km north west). The proposal area is located between the A523 to the southwest and Blakelow Road / Morridge Top Road, to the north east, and forms part of an agricultural land holding associated with Lane End Farm. The site comprises of a medium size irregular shaped field used for pastoral farmland. The site slopes upwards in a southwest to northeast direction from 313m AOD to 348m AOD. It lies in close proximity to the Peak District National Park, with the boundary being located along Blakelow Road, approximately 660m north east of the site. The siting point of the turbine is identified in the OS map below:

Figure 2.1 - Turbine location (red circle)

2.2 The proposed turbine would be sited approximately 270m towards the north of the nearest residential property. There are further residential properties located approximately 300m towards the east known as Garstones. These isolated farmstead properties are generally reflective of the dispersed settlement pattern of the local area which gives a predominantly rural character. There are, however, some expanded hamlets, villages and towns situated within 5km which does provide an urban fringe influence. The closest listed building is the Grade II structure known as 'Mile Post 20 Metres South of Cooks Lane' which is located approximately 840m towards the south on the A523. There are other infrequent heritage assets found dispersed across the wider area, including several listed buildings at Bradnop and Onecote.

2.3 The application site lies within Staffordshire Moorlands District Council's administrative boundaries and is designated in the Staffordshire Moorlands Local Plan as being located within a Special Landscape Area. Saved policy N9 states that within this area 'the local planning authority will promote and require especially high standards of design for development'. In addition, the site is located approximately 700m from the southern boundary of the Peak District National Park, and so saved policy N11 is also of relevance. This states that 'in considering proposals for development on land conspicuous from the Peak National Park, the council will have regard to the need to ensure that the visual amenities of that land are not adversely affected to the detriment of the local plan'.

2.4 The site and surrounding area is found within the Gritstone Highland Fringe Landscape Character Type area as defined within the Landscape Character Assessment of Staffordshire Moorlands (2008) prepared by Wardell Armstrong. The Gritstone Highland Fringe is only located in a small section of the plan area and is a landscape type of the Dark Peak area. Within this part of the landscape, the millstone grit forms a deeply dissected plateau which supports upland grassland and small patches of remnant grassland. Stock rearing is the predominant land use, in medium to large sized walled fields of a regular pattern. There are few woodlands in the area in isolated cloughs. Settlement comprises mainly farmsteads in a dispersed pattern at low density, although some expanded hamlets exert an urban fringe influence. Given the above mentioned landscape designations, this part of the landscape is identified as being particularly sensitive to development and land use change, as noted in the Planning for Landscape Change Supplementary Planning Guidance document to the Staffordshire and Stoke on Trent Structure Plan. However, it should be noted that there are existing turbines at Slate House Farm and Garstones Farm, both of a similar scale and situated further up the sloped agricultural land from the application site. It is considered that this has been well absorbed within this relatively large scale landscape and this demonstrates a capability to accommodate turbine development without significantly impacting on the overall character of the Special Landscape Area or, indeed, the setting of the Peak District National Park.

2.5 Access to the site is taken from an existing track leading north from the A523, with a short additional internal track constructed from gritstone hard core providing access to the siting point of the turbine.

3.0 Zone of Theoretical Visibility

3.1 In accordance with good practice a Zone of Theoretical Visibility Map has been produced which demonstrates the theoretical extent by which the proposed turbines could be visible within the landscape. This acts as a good starting point for the Landscape and Visual Impact Assessment. The Guidelines for Landscape and Visual Impact Assessment (2nd edition) do not state minimum or maximum zones for Zone of Theoretical Visibilities (ZTVs), however, 10km is often given as a best practice measurement. In addition, paragraph 63 of the Scottish Natural Heritage Visual Representation of Windfarms guidance (2006) also suggests that for turbines between 53m and 85m in height, it is not possible to identify the taper of a turbine tower or identify nacelle detail at distances of 10km. Furthermore, the report notes that while blade movement is visible up to 15km, the casual observer may find movement unnoticeable beyond 10km. At 15km, the attached ZTV assessment within Appendix B is therefore considered to cover a more than sufficient distance from the site, particularly given the small scale nature of the proposals, to judge the potential of the proposed turbine impact on the surrounding landscape. A snapshot of the ZTV is shown below:

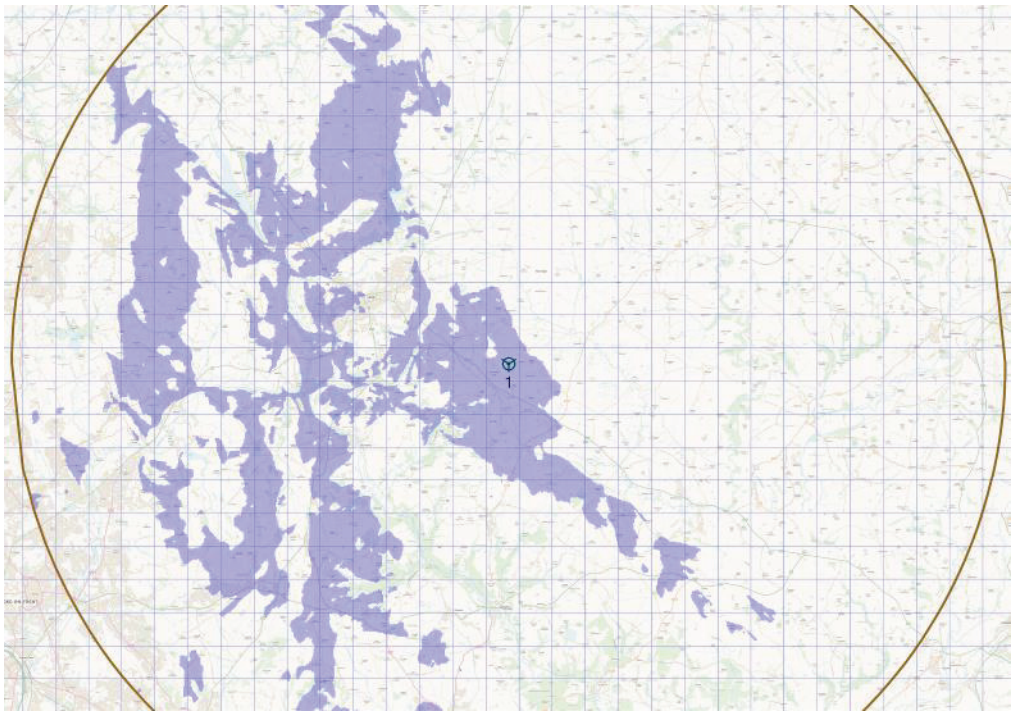

Figure 3.1 – Zone of Theoretical Visibility

3.2 The ZTV indicates that the proposed turbine could theoretically be visible from much of the surrounding lower valley area to the south of the site up to the Ipstones Edge ridgeline. The

turbine would also be visible, in theory, from the Morridge ridgeline to the north of the site which defines the southern boundary of the National Park. The extent of visibility generally extends south east following the contour lines of these valley areas and including the lower level land in between. The turbine would also be visible along the A523 corridor to the west of the site up to the small settlement of Bradnop, however, the changing topography would then shield the site from view from Leek. In terms of distant views, these are more generally achieved from the west of the site, however, this is likely to be limited to elevated vantage points from which open views are possible across the undulating landscape. To the north and east, as well as much of the south, no longer distant views would be possible due to position of the site on the steep valley sides, with more upland areas completely obscuring the turbine from view.

3.3 Notwithstanding the above, due to the small scale of the proposed turbine and the narrowness of the mast and blades, it is unlikely it would be appreciated in the landscape to the naked eye in longer range views. Furthermore, it is also important to note that the Zone of Theoretical Visibility does not take into account any landscape features such as trees, hedges and buildings which would serve to provide further screening of the turbine from many vantage points in the vicinity. Whilst it is noted that the surrounding landscape contains few woodland blocks or thriving hedgerows as is the case in other character areas, intermittent tree coverage alongside roads and bordering fields would offer some screening, as would isolated buildings and small settlements. In summary, any significant visual impact is likely, therefore, to be contained to the more local area where uninterrupted views of the turbine could be achieved, though the limited visibility of the turbine in the landscape would help to reduce the overall impact on the character of the landscape as a whole.

4.0 Landscape Impact Assessment

4.1 The application site lies towards the southern part of the South West Peak National Character Area (No. 153), as identified within National England's 'Character of England' map. The identification of the regional character areas has been based on a combination of topography and geology. The key characteristics for the South West Peak Character Area comprise:

- Integrated mosaic of landform and vegetation patterns comprising tracts of wild expansive moorland with heather on hill tops and ridges and small scale enclosed farmland with herb-rich hay meadows and rushy pastures in valleys.
- Area of upland flanked by lower hills to the south and west and indented by valleys which broaden to the west into gently undulating lowland as the rivers drain to the Shropshire, Cheshire and Staffordshire Plain.
- Isolated 'gritstone' edges at Ramshaw Rocks and the Roaches providing a dramatic contrast to rolling uplands.
- Long, uninterrupted views from margins to upland areas and vice versa, and contained and intimate around the foothills.
- Fringes to the upland dissected by river valleys with fast flowing streams which create an intricate ridge and valley landscape of distinctive pattern and character.
- Main rivers of the Goyt, Dove, Dane, Manifold, Churnet and Hamps all with their sources in the upland area.
- Economy of the area based on stock rearing (sheep and beef) with some dairy farming and grouse shooting on the moorland.
- Intricate and distinctive field patterns often with historic associations including gritstone walls at higher elevations and hedgerows at lower elevations, with holly prevalent in the lower valleys.
- Farm buildings and villages built predominantly of local stone reflecting local geology and history.
- Small nucleated settlements with extensive dispersed farm landscape, commonly with distinctive and recognisable area of intake.

- Remains of former coal mining activity particularly in the area around Flash.

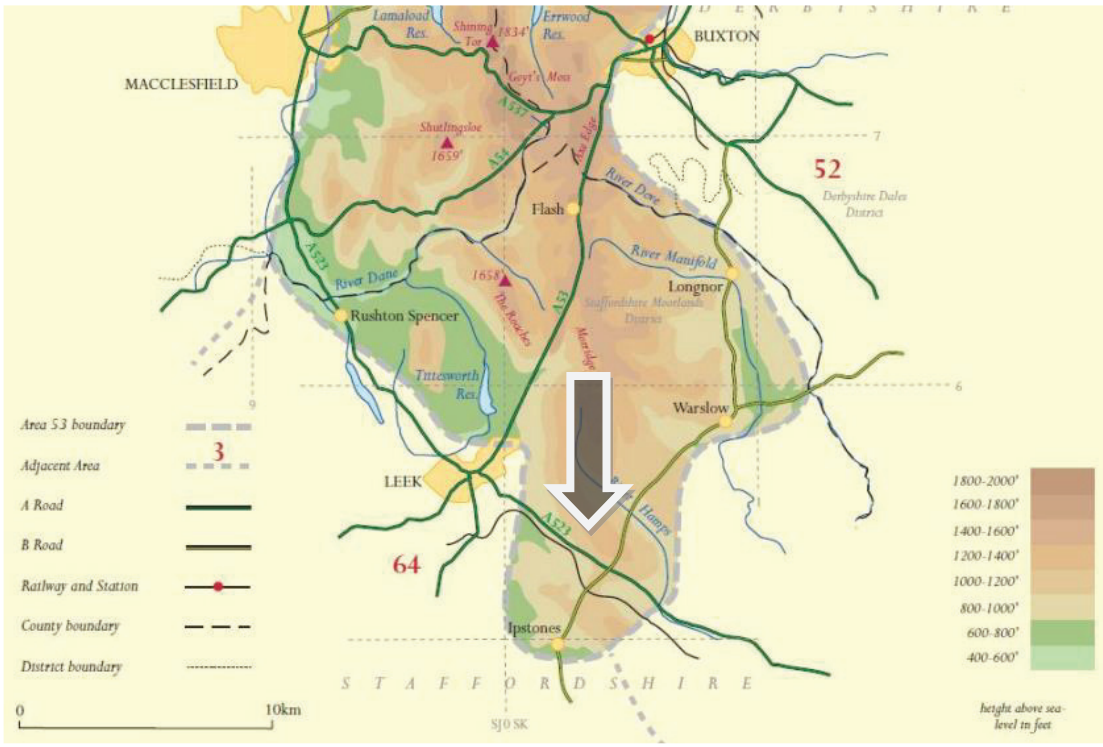

Figure 4.1 - Site location within context of NCA South West Peak

4.2 Though much of the key characteristics of the South West Peak Character Area relate to its upland core, which is designated as part of the Peak District National Park, the application site is located to the south of the area where its lower hills are indented by valleys, and within which herb-rich hay meadows and damp rushy pastures are a common feature of valley sides and foothills. This part of the landscape provides semi-improved pasture and grassland used for pastoral farming, which slopes up towards the Morridge ridgeline that runs in a west-east direction and shields much of the upland core to the north from view.

4.3 Whilst the above does help to inform the overriding landscape features and characteristics of the site within a wider landscape context, the Landscape Character Assessment of Staffordshire Moorlands (2008) prepared by Wardell Armstrong arguably provides a more localised assessment of landscape character. As outlined earlier, the site lies within the Gritstone Highland Fringe Landscape Character Type area, which retains the following key characteristics:

- Large scale, steeply sloping, smooth rolling upland landscape with plateaus and steep slopes and valleys.

- Skyline ridges with long distance panoramic views.
- Large rectangular fields enclosed in the main with gritstone walls, with some hedgerows.
- Heathland areas encroached by sparse scrubby woodland.
- Conifer plantations and broadleaf woodland following narrow valleys.
- Tittesworth Reservoir.

4.4 The area to the east of the Landscape Type, which is situated within the South West Peak Joint Character Area (JCA), has been identified as generally high or very high quality landscapes, with few limiting factors to accommodate change. The most critical of which is 'the incipient decline in the condition of some of the characteristic landscape features'. Ipstones Edge within this area is 'one of the Structure Plan's few landscapes which are regarded as sensitive to woodland planting, which could erode existing character and quality'. In the west, the area is identified as an area of landscape maintenance and to the east as an area of active landscape conservation.

4.5 Given that the application site lies within a locally designated Special Landscape Area, and in close proximity to the Peak District National Park, it is clear that the sensitivity of this part of the landscape would be high. However, the site remains outside of the National Park boundary and, furthermore, is situated down the slope ensuring the turbine will not be visible from this national landscape designation. The existing turbines at Slate House Farm and Garstones Farm are located closer to the National Park and further up the slope, ensuring that they have a greater potential to impact on the setting than this proposed turbine. This is shown within the ZTV contained within Appendix B. Furthermore, there are incongruous features already present in the landscape which would mitigate the impact of the proposals on the area's character, including urbanised improved commuter dwellings, quarrying sites and busy roads such as the A523 to the south of the site. The operational 50kW turbines at Slate House Farm to the north of the site and at Garstones Farm, which is directly comparable in scale to the turbine proposed as part of this application, also provides a somewhat incongruous existing feature on the valley sides. However, these existing turbines also demonstrates the capacity of this part of the landscape to accommodate carefully designed development of a modest scale, without harming the important characteristics of the area, which relate to the large scale, steeply sloping landform with

prominent skyline ridges and rectangular enclosed pastoral fields bounded by gritstone walls, or the visual amenities of the Peak District National Park. It is clear from this that there is the potential to site an additional turbine in the vicinity.

4.6 Clearly there would be some change in the appreciation of the site and surrounding landscape as a result of introducing a single small scale turbine on land associated with Lane End Farm, however, as outlined in the previous section, theoretical visibility would be relatively low and limited to close range views taken from between the Morridge and Ipstones Edge ridgelines, along with some longer distant views from elevated vantage points to the west of the site. On this basis, and given that the proposals involve the introduction of a single small scale turbine outside of the more sensitive National Park landscape area to the east, it is considered that the proposal is in the main consistent with the council's saved policies for controlling development in the Special Landscape Area and its strategy for the preservation of the visual amenities associated with the Peak District National Park. Furthermore, whilst not relating specifically to wind turbine development, the landscape planning guidelines as set out within the Landscape Character Assessment of Staffordshire Moorlands (2008) document looks to maintain open skylines and wide open views. In this regard, it is considered that the proposed development is also in compliance with these general aims, as the turbine would be set down from the Morridge ridgeline to the north and would be seen against the backdrop of a small pocket of mature trees further up the hill which provides a sense of scale.

4.7 However, it is recognised that a more detailed and robust assessment of the impact on the landscape is required, both in terms of potential individual and cumulative effects. Attached as Appendix D is a tabulated Landscape Impact Assessment, which breaks the landscape character area into individual landscape features and assesses the impact of the proposed development on each feature. This provides an overall summary of the resulting landscape impact. Overall, within this area, the introduction of the proposed small scale turbine would see a low to medium level of impact on these features mainly resulting from the location of the site within a distinctly rural landscape of relatively high quality, largely free from human influence. The impact would also be increased slightly as a result of the turbine being read together with the existing turbines at Slate House Farm and Garstones Farm. However, these operational turbines and the proposed turbine remain of a comparable scale so as to aid the absorption of additional proposed turbines within the landscape, ensuring some consistency in design and a degree of uniformity area.

4.8 The Visual Impact Assessment will deal specifically with the views of the turbine and their resulting impact, however, in pure landscape character terms it is clear that there is scope for development within this area. The existing turbines at Slate House Farm and at Garstones Farm, helps to demonstrate the suitability of the site for this form of development, though this does also illustrate the need to consider the impact from a cumulative perspective. Nevertheless, as shown within the attached Landscape Impact Assessment table in Appendix D, the main features of interest within the landscape area which contribute more significantly to the character, such as the rolling landform and steep valley sides, would remain largely unaffected. Yet there would be a number of landscape characteristics which would be slightly or moderate adversely affected, with the effects increased where there would be a cumulative impact with the existing Slate House Farm and Garstone Farm turbines. Overall, the impact on landscape character as a whole can be considered **moderate adverse**, though the nature of the landform restricting longer distant views at lower levels does help to contain the associated effects. In all cases the impact would be over the long term (5 + years) however the effects would, ultimately, also be reversible due to the life cycle of the turbine (approx 25 years), and thus any impact would not be permanent.

5.0 Visual Impact Assessment

5.1 This Visual Impact Assessment (VIA) has been prepared taking into account a number of different visual receptors in the area, and in particular those closest most sensitive receptors taking into account residential properties, road users, recreational routes of recreational places of value and heritage assets. As can be seen within the resultant VIA table in Appendix E there is often a cross-over where, for example, a heritage asset is also a residential property or the photomontage has been prepared from a road but reflects the view from a residential property as well.

5.2 The VIA has been based on the most sensitive locations within approximately 5km of the site, though with a focus on those in the immediate vicinity. The location of these viewpoints has also been informed by the ZTV maps that were produced to illustrate the theoretical visibility of the turbine within the surrounding landscape, which demonstrate that the turbine would be mainly visible from closer range vantage points situated between the Morridge and Ipstones Edge ridgelines, rather than from any longer distant receptors. It is clear that the undulating topography of the landform across the broader area does serve to preclude views of the turbine from many viewpoints ensuring no effects, particularly to the north, east and south. In addition, though vegetation is generally restricted to woodland blocks on valley sides and mature woodland areas along valley bottoms, some intermittent tree cover along roadsides and bordering fields do provide additional screening and, at some locations, an improved sense of scale. Set within this context, it is considered that the proposed wind turbine can be accommodated without adding significant adverse visual effects to important receptors in the local area, though there would inevitably be some slight and moderate adverse effects from the proposed turbine from closer range viewpoints, mainly from vantage points to the south and west.

5.3 In accordance with the methodology within Appendix A, the proposed turbine would always have a long term impact as they would be a feature of the vista for more than 5 years. However, the turbine would also have reversible effects in all cases due to the lifecycle of the turbine (generally 25 years). Whilst clearly 25 years remains long term, this reversibility is a material consideration within LVIA's in comparison to a permanent irreversible form of development.

Recreational Receptors

5.4 Vantage Point 1 shows the proposed views from the picnic area on the B5053. This vantage point has wide open views of the locality and also demonstrates the agricultural features of the landscape. The turbine would be visible from this location, however it is not an isolated feature on the landscape and would be viewed in relation to telegraph poles, vegetation and the existing turbines.

Residential Receptors

5.5 Vantage point 3 demonstrates the likely impact from the residential receptors. Although the turbine is visible from this location, the scale of turbine proposed and the distance to the site ensures that the outlook from the residential properties in the area would not change to a significant degree.

Road Users Receptors

5.6 The majority of the vantage points have been taken from the country lanes that are located within the vicinity of the area. The montages have demonstrated that although the proposed turbine would be visible from these locations, the impact is not significant. In particular from a number of locations the turbine would not be skylined and would be viewed in relation to the landscape behind. The turbine would not be an isolated feature and would be viewed in relation to telegraph poles and vegetation which ensures that it can be accommodated within the landscape. The small scale nature of the turbine also ensures that it would not be a prominent feature and would not dominate any of the views from the country lanes.

6.0 Cumulative Landscape and Visual Impact

Nearby Wind Energy Schemes

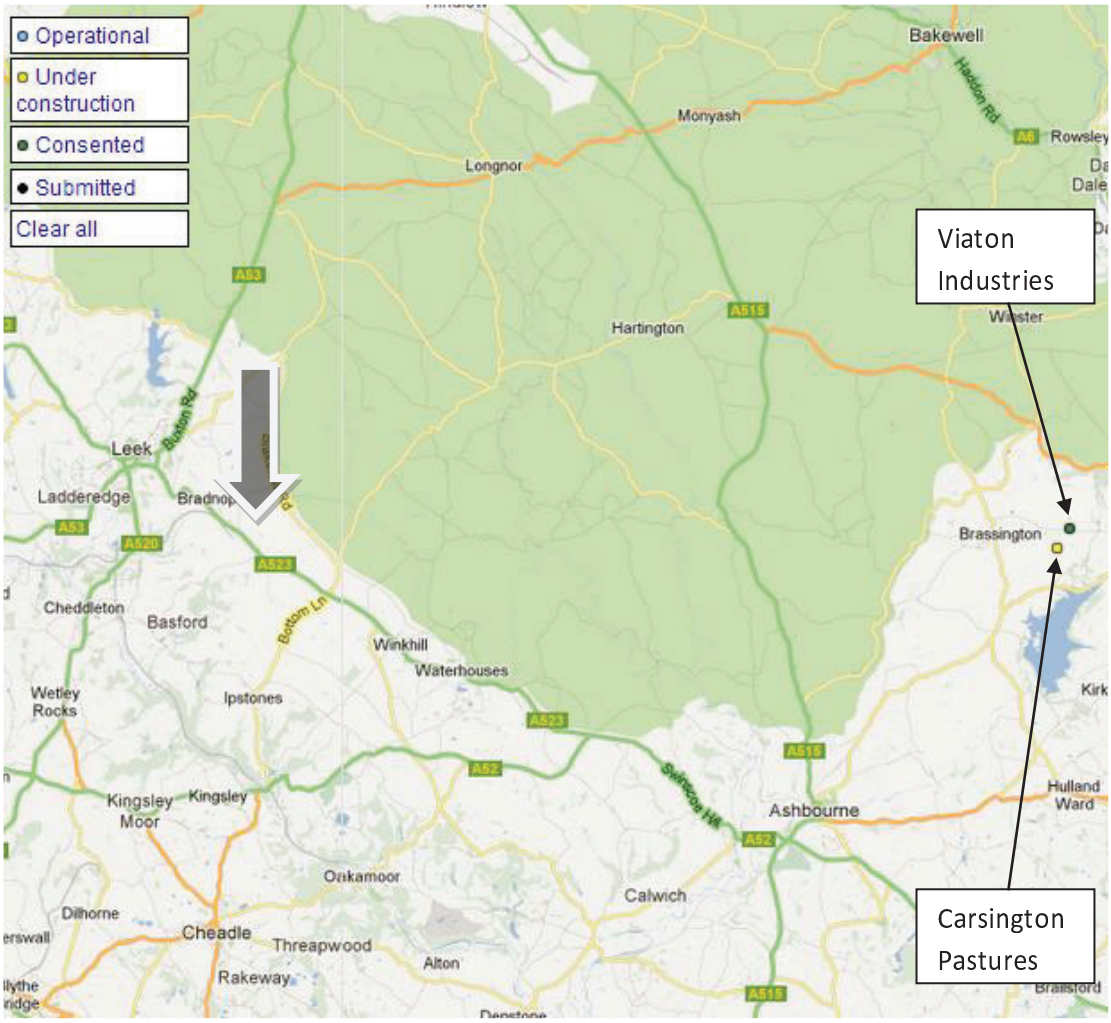

Figure 6.1 - Proximity of commercial wind schemes in the wider area

6.1 Presented above is a map showing the nearby commercial scale wind energy schemes which should be considered in terms of any cumulative visual and landscape impact. As shown, there is a significant distance between the application site and the closest of these commercial sites found to the north of Carsington Water in Derbyshire, approximately 23km to the east. At this distance, and given the intervening topography and land cover, there would be no inter-visibility between these consented developments and the small scale turbine proposed at Lane End Farm.

6.2 As alluded to above, however, there are existing turbines situated in the locality in relation to Slate House Farm and Garstones Farm. The montages have demonstrated that the proposed turbine would be viewed in relation to these existing turbines.

6.3 The existing turbines are 50kw and are of a similar scale to the turbine proposed. The siting of the proposed turbine would be set further down the side of the valley. This ensures that from a number of vantage points where the turbines would be viewed together there would appear to be a similar distance in-between and the turbines would be stepped down the valley side.

6.4 Both the existing turbines and the proposed turbine would be of a similar scale and of similar appearance. This ensures that although there would be some cumulative impacts, these would not equate to unacceptable impacts as the similar scale, appearance and careful siting ensures that there would be a sense of order, and the turbines would not appear to be 'scattered' across the landscape.

Simultaneous Cumulative Visual Effects

6.3 Simultaneous effects include viewing a number of schemes from a single fixed viewpoint, within the viewer's field of view without moving. It is simultaneous cumulative effects that have the greatest potential to have an unacceptable impact. The proposed turbine would be viewed in relation to the existing turbines at Slate House Farm and Garstones Farm. Although these turbines would be viewed together, this would not necessary equate to an unacceptable impact. In particular the turbines would be of a similar scale and appearance. This ensures that there would be a sense of order to their appearance. The proposed turbine would also be sited a similar distance away from the existing turbines and slightly down the valley side. When the turbines are viewed together they would be stepped down the slope and this would create a further sense of order.

Successive Cumulative Visual Effects

6.4 Successive cumulative effects arise whereby the viewer can see a number of turbine schemes from a fixed viewpoint, while turning around at the same point. Such effects are likely to be most notable on the network of public footpaths to the east of the site, as well as from some residential properties located in this direction. However, the proposed turbine would only be read together with the existing turbines at Slate House Farm and Garstones

Farm within this small part of the landscape, and as demonstrated above and within the Visual Impact Assessment table held in Appendix E, the similar appearance and scale would provide order on the landscape. The slim nature of the turbine and the relatively low height would also provide further mitigation to potential successive cumulative visual effects.

Sequential Cumulative Visual Effects

6.5 Possible sequential effects are most likely to occur when travelling along the public footpath network and the A523. As there are few turbines in the locality outside of the existing turbines at Slate House Farm and Garstones Farm, the sequential cumulative effects would be minimal. The speed of the traffic along the A523 would reduce the sequential cumulative effects further as would the hedgerows that border the public highways.

6.6 The proposal is for one small turbine that would not be prominent within the wider area and would only be occasionally visible from some vantage points. Any interaction with the existing turbines would be occasional due to the fact that this is also a small scale turbine. The distance and intervening landscape would also provide further mitigation and any cumulative impacts that would arise from the proposal would not be significant. When the benefits of the scheme are taken into consideration, it is considered that these would far outweigh any small cumulative effects.

7.0 Proposed Mitigation Measures

7.1 Given the scale of the proposed turbine there are no mitigation measures possible that would fully screen the turbine from view. Indeed due to the visual impact beyond the land ownership of the applicant there is limited mitigation measures that can be offered that would have any significant benefit. Nevertheless, the following measures have been utilised in the formulation of the final scheme design forming the basis of this application in order to mitigate the impact on sensitive receptors and the character of the surrounding landscape:

- The model of turbine chosen is considered to match well with the available wind resource at the site and is of a small scale so as to be more easily absorbed into the landscape with a reduced visual effect on key receptors. The cumulative impact is also mitigated against by the uniformity in design and appearance and the fact that only a single turbine is proposed.

- The siting point of the turbine ensures that it would be unaffected by turbulence whilst also maintaining an appropriate relationship with the existing landscape pattern and form. Furthermore, the siting points have been carefully selected in order to respect nearby properties and heritage assets, recreational footpaths and values and local ecology interests.

- The transport route of the turbine and access arrangements have been carefully chosen so that it has a minimal impact on local users and roadside boundary edges and elements.

- The decommissioning of the turbine would see all structures and components taken down and the ground reinstated.

7.2 It is considered that the above mitigation measures would aid in limiting the visual and landscape impact resulting from the proposals and ensure any harm is less than significant.

8.0 Conclusion

8.1 The introduction of the proposed turbine at the site would have a limited impact on the main features of interest within the landscape which contribute more significantly to the character, such as the rolling landform and steep valley sides. Whilst there would be a number of landscape characteristics which would be slightly or moderate adversely affected, with the effects slightly increased due to the cumulative impact with the existing turbines at Slate House Farm and Garstones Farm. Overall the impact on the local landscape character as a whole can be considered no more than moderate adverse. Furthermore, the effects of the proposed scheme would be localised to a relatively small area of the landscape close to the site, as described below, and would see a negligible impact on the setting of the Peak District National Park by comparison with the existing turbines.

8.2 In terms of visual impacts the proposed turbine would be mainly visible from closer range vantage points situated between the Morridge and Ipstones Edge ridgelines, rather than from any longer distant receptors. It is clear that the undulating topography of the landform across the broader area does serve to preclude views of the turbine from many viewpoints ensuring no effects, particularly to the north and east. In addition, though vegetation is generally restricted to woodland blocks on valley sides and mature woodland areas along valley bottoms, some intermittent tree cover along roadsides and bordering fields does provide additional screening and, at some locations, an improved sense of scale. The proposed turbine would also be viewed in relation to the mature vegetation in close proximity. Set within this context, it is considered that the proposed wind turbine can be accommodated without adding significant adverse visual effects to important receptors in the local area, though there would be inevitably be some slight and moderate adverse effects from the proposed turbine from closer range viewpoints, mainly from vantage points to the south and west.

8.3 There would clearly be some cumulative effects resulting from the introduction of the proposed turbine in relation to the existing turbines at Slate House Farm and at Garstones Farm, with this combining simultaneous, successive and sequential effects taken largely from the network of footpaths to the west of the site and the public highway and country lanes towards the south. However, it is considered that the actual impact would be relatively low, with this helped by the small scale nature of all three turbines, with a reduced level of visibility of the proposed turbine in particular, and the uniformity in design and

appearance thereby avoiding any visual confusion. In addition to this the photomontages have demonstrated that the proposed turbine would not be a prominent feature, which further reduces the significance of any cumulative impact.

8.4 In all cases the impact would be over the long term (5 + years), however the impact would ultimately, also be reversible due to the life cycle of the turbine (approx 25 years) and thus any impact would not be permanent. Though there is little opportunity to offer any mitigation of value, given the technical requirements associated with this form of development, the proposed scheme has nevertheless been carefully designed to an appropriate scale considering the visual and landscape impact, being sited away from the more sensitive parts of the surrounding landscape including the National Park to the north. It is considered that these sensitive mitigation measures would aid in limiting the visual and landscape impact resulting from the proposals and ensure any harm is less than significant.

APPENDIX A

METHODOLOGY

APPENDIX A – METHODOLOGY ADOPTED

The process of assessing the visual and landscape impact of this application has been guided by the document 'Guidelines for Landscape and Visual Impact Assessment'(2002). The interpretation of this document and the approach taken in our assessment is set out below.

Landscape Impact Assessment

The Landscape Impact Assessment describes the likely nature and scale of changes on individual landscape elements known as 'receptors' and the resultant effect on the landscape character due to the proposed development. The extent to which a landscape can accommodate change due to development varies according to a range of factors such as land use, the scale and pattern of the landscape, visual enclosure, and quality of view and the value of the landscape. Changes to the fabric and character of a particular landscape area may affect the perceived value of that landscape, giving rise to changes in its quality. The scale or magnitude of landscape effects ranges from negligible, through to minor, moderate and major. Such changes are described as either adverse or beneficial.

The Countryside Agency's guidelines make a clear distinction between the characterisation process (in which the attributes of the landscape are described) and the judgment making process. This section of the assessment, the characterisation process, is considered and later sub-sections make judgments about the potential effects of the proposed development based upon the characterisation.

The Countryside Agency guidelines describe how landscape character assessment can be applied at different scales, from the national or European level, to the parish level. Assessments are ideally prepared at different scales that should fit together as a nested series or a hierarchy of landscape character types and/or areas, such that each level of assessment adds more detail. The three main levels identified by The Countryside Agency are: national and regional scale; local authority scale; and local scale. This assessment uses and presents a summary of the relevant published assessments at national and regional scale and local authority scales. These wider character assessments are then used to provide the context for the local scale landscape assessment for the application site.

The Countryside Agency's guidance recommends that the characterisation process should be based on an assessment of natural, cultural and social factors and aesthetic and perceptual factors. These factors have been examined for the site's surroundings, the existing site as it stands today and the site, as it would be, following completion of the development.

The assessment of visual effects describes the changes in the visual character of available views and in the visual amenity of local receptors arising from the development. The sensitivity of visual receptors and views will be dependent on the context of the view, the importance of the view and the nature of the receptor. The scale or magnitude of visual change is affected by scale, the degree of contrast, the permanence of the effect, angle of view, distance and the extent of change.

Principal viewpoints are selected on the basis of which points provide the clearest views of the site, are accessible, and considered most sensitive to development.

Significance Criteria

The potential significance of landscape and visual impact is determined by a combination of the magnitude of the potential impact and the sensitivity of the receptor to change. These two variables can be correlated as illustrated in Table 1.1, below. Thus, a landscape impact of low magnitude may nevertheless be assessed to have a moderate impact in a highly sensitive landscape such as an Area of Outstanding Natural Beauty (AONB) or a National Park. In general the following principles apply:

	Magnitude of Impact			
Sensitivity of Receptor to Change	**Negligible**	**Low**	**Medium**	**High**
High	Negligible	Slight/Moderate	Moderate	Moderate/Substantial
Medium	Negligible	Slight	Slight/Moderate	Moderate
Low	Negligible	Negligible	Slight	Slight/Moderate

Table 1.1 – Principles of Assessing Significance of Landscape and Visual Impacts Magnitude of Impact Sensitivity of Receptor to change

The above consideration of the sensitivity of the receptors with the magnitude of the potential impacts provides an overall assessment of the potential significance of impacts. However, this process is not a quantitative process; there is not an absolute scoring system. And although considerations are made according to recognised features and methods of working, as outlined in this report, the correlation of the two factors is in the end a matter of professional judgement.

Table 1.2, shown overleaf, provides a brief definition of the full range of significance criteria. It must be emphasised that both landscape and visual impacts can be either adverse or beneficial in nature.

These ratings reflect the existing site condition, established use and existing planning consents, but also the nature and scale of the proposed development. The visual impacts arising from visual changes in the appearance of the landscape associated with the development and perceived by the visual receptor may be beneficial or adverse and are assigned a significance rating.

Significance	Definition
Negligible	The proposed scheme is appropriate in its context. It may be difficult to differentiate from its surroundings and would affect very few or no receptors.
Minor	The proposed scheme would cause a barely perceptible impact, and would affect few receptors.
Moderate	The proposed scheme would cause a noticeable difference to the landscape, and would affect several receptors.
Major	The proposed scheme would completely change the character and/or appearance of the landscape for a long period of time or permanently. It would affect many receptors.

Table 1.2 – Landscape and Visual Impact Significance Definitions

Determining Landscape Capacity and Sensitivity

Topic Paper 6 of Landscape Character Assessment Guidance for England and Wales seeks to define concepts of Capacity and Sensitivity. The following definitions are suggested:

- Overall Landscape Sensitivity refers primarily to the inherent sensitivity of the landscape itself, irrespective of the type of change that may be under consideration.
- Landscape Sensitivity to a specific type of change is used where it is necessary to assess the sensitivity of the landscape to a particular change or development.
- Landscape Capacity describes the ability of a landscape to accommodate different amounts of change or development of a specific type.

Sensitivity is the degree to which a particular landscape type or area can accommodate change arising from a particular development, without detrimental effects on its character and will vary with:

- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure/openness of views, and distribution of visual receptors;
- The scope for mitigation, which would be in character with the existing landscape;

- The value placed on the landscape.

Overall landscape sensitivity to change will be judged using a three point verbal scale of high, medium or low. Judgements are then made for each of the constituent aspects of sensitivity and these assessments are tabulated to provide a profile of a particular landscape area. An overview is than taken of the distribution of the assessments of each aspect and this is used to make an informed judgement about the sensitivity of the landscape to accommodate the specific change. The following table provides the appropriate definitions for determining the sensitivity of specific components of a landscape character.

Sensitivity	Definition of Landscape Sensitivity
High	Important components of landscape of distinctive character susceptible to relatively small changes.
Medium	A landscape of relatively common characteristics, reasonably tolerant of changes.
Low	A relatively unimportant landscape, the nature of which is tolerant of substantial change

Table 1.3 – Criteria for Assessing Sensitivity of landscape Receptors

Determining the Sensitivity of Visual Receptors and the landscape

Principal viewpoints are selected on the basis of which points provide the clearest views of the site and are also the most accessible to the public. Secondary viewpoints represent views from areas which are not commonly used by the public, or which would provide less clear views of the proposed development. Secondary viewpoints also represent areas which may be perceived to be sensitive to the visual impact of the proposed development due to their nature or proximity, but which in reality have restricted views of the site.

Sensitivity of visual receptors is typically assessed by ascribing one of the following levels: very high, high, medium or low sensitivity to change. The sensitivity of visual receptors and views will depend on the context of the view, the importance of the view and the nature of the receptor.

Table 1.4 below provides a description of the criteria used to define the sensitivity of the visual receptors:

Sensitivity	Definition of Visual Receptor
High	The principal views from residential buildings; beauty spots and picnic areas. Users of outdoor recreational facilities including recreational footpaths, cycle routes or rights of way, whose attention would be focused on the landscape; important landscape features with physical, cultural or historic attributes. Designated Scenic drives.
Medium	People engaged in outdoor sports or recreation (other than appreciation of the landscape), attractive rural lanes and 'B' roads. Secondary views from residential buildings.
Low	Views from heavily industrialised areas or commercial buildings or commercially engaged pedestrians, whose attention may be focused on their work or activity rather than the wider landscape, people travelling through or past the landscape on main A roads, train lines or other main transport routes.

Table 1.4 – Criteria for Assessing Sensitivity of Visual Receptors

Determining Magnitude of Impacts on Landscape Character and Visual Receptors

Magnitude is determined by the distance from the viewer, the extent of change in the field of vision, the proportion or number of views affected and the duration of each from each viewpoint, or a sequence of viewpoints that may have transient views (e.g. along a road).

Generally, greater weight is given to visual impacts on public viewpoints than on private properties. Table 1.5, provides a description of the criteria used to assess the magnitude of impacts on landscape and visual receptors:

Visual Receptor Magnitude	Assessment
High	Total loss of or major alteration to key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements considered to be totally uncharacteristic when set within the attributes of the receiving landscape.
Medium	Partial loss or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that may be predominant but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape.
Low	Minor loss of or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that may not be uncharacteristic when set within the attributes of the receiving landscape.
Negligible	Very minor loss or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that are not uncharacteristic within the surrounding landscape – approximating the 'no change' situation.

Table 1.5 – Assessing Magnitude of Impacts on Landscape and Visual Receptors Magnitude: Typical Criteria

Determining Significance of Impacts on Landscape Character and Visual Receptors

Due to access restrictions, the magnitude of effect on view character for all receptors, including residential property within the visual impact assessment, is assessed on the basis of ground level views (e.g. from ground floor and garden level in the case of residential property).

An assessment of the significance of an impact can be derived from the combination of the 'sensitivity' of a landscape or visual receptor and the 'magnitude' of the impact. This has been interpreted as follows:

Sensitivity		Magnitude		Significance
High	+	High	=	Substantial
High	+	Medium	=	Moderate
High	+	Low	=	Slight

Medium	+	High	=	Moderate
Medium	+	Medium	=	Moderate
Medium	+	Low	=	Slight
Low	+	High	=	Moderate
Low	+	Medium	=	Slight
Low	+	Low	=	Slight

Impacts are described as being either beneficial or adverse.

Negligible impacts can be derived from high, medium or low sensitivity combined with negligible magnitude.

The following standards are used in assessing whether the impacts are short, medium or long term.

- Short term – < 12 months
- Medium term – one to five years
- Long term - + five years.

In this application the proposed wind turbine due to its life cycle would have long term effects but would not be permanent with the effects ultimately being reversible in the long term.

Cumulative Effects

In order to assess cumulative impact it is necessary to understand and define what cumulative effects are in relation to wind turbines. Onshore wind energy development (consisting of single turbines, wind clusters of 2-5 turbines and windfarms of 6-100 or more turbines) may have a cumulative landscape effect, either directly or indirectly affecting landscape character and qualities, as well as a cumulative visual effect. The Landscape Institute defines cumulative landscape and visual effects as:

'Additional changes to landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it) or actions that have occurred in the past, present or are likely to occur in the foreseeable future'.

Cumulative Landscape Effects may be described as follows:

Cumulative landscape effects include changes to landscape elements, characteristics, character, and qualities of the landscape as a result of two or more on-shore wind energy developments.

Wind development is cited in 'state of the countryside reports' as an area of anticipated landscape change connected with climate change. The effects on the landscape could well be as marked as the advent of commercial forestry and changes to agricultural practices which have occurred over the last century.

Cumulative Visual Effects may be described as follows:

Cumulative visual effects are a subset of landscape effects and are concerned wholly with changes in the character of available views and the changes in the visual amenity perceived by receptors as a result of two or more on-shore wind energy developments. Cumulative visual effects may occur as follows:

- **Simultaneously** - where a number of turbines may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view without moving;
- **Successively** - where a number of turbines may be viewed from a single viewpoint successively by turning around at a viewpoint; and
- **Sequentially** - where a number of turbines may be viewed sequentially or repeatedly from a range of locations when travelling along a route.

The potential for a cumulative effect itself arises from a number of specific factors related to scheme layout and turbine selection, these include:

- Overall scale of development in relation to landscape capacity for development;
- Proportion of the view occupied by developments and interaction with how the view may be appreciated; and
- Composition of the combined scheme (coherence of design, extent of blade overlap from key viewpoints, rotational speed variation, etc.).

One important point to note is that once considered acceptable individually, multiple wind turbines in the landscape should be sited in a manner that presents 'order' to the extent that the developments may appear as relatively simple and easily understood components of the landscape. A consistency of image by the use of similar turbine heights, specification, and layout design is a

reasonable approach to take when assessing the cumulative impact of turbines and how they relate to each other.

References

Countryside Agency and Scottish National Heritage (2002); Landscape Character Assessment Guidance for England and Scotland.

Countryside Commission (1998); Countryside Character. The Character of England's natural and man-made landscape, Volume 1: North East.

The Landscape Institute and Institute of Environmental Management and Assessment, Second Edition (2002); Guidelines for Landscape and Visual Impact Assessment.