Northumberland National Park Authority
Landscape and Forestry Officer's Response to Highlee Hill Wind Farm August 2016

Application Reference Number: 16NP0071CO

Proposed Development: Neighbouring Authority Consultation in respect of the proposed Erection of wind farm comprising of 11 turbines 176 m high to tip, 2 turbines 150m high to tip and associated works, infrastructure, compounds, building, masts and forestry felling;.

At: Land South West of Lustruther Farmhouse (Highlee Hill) Hawick Scottish Borders.

Applicant: RES Ltd.

Background

An application has been submitted to Scottish Borders Council for the erection of 13 wind turbines, 11 up to 176 meters high to blade tip, a further 2 up to 150 meters high to blade tip and ancillary development including but not limited to an access tracks, crane hardstandings, control building and substation, substation compound, underground cabling and temporary and permanent anemometry masts. Additional temporary infrastructure would include a further 80 meter high anemometry mast, construction compound and security office. The construction period is thought to be between 18 - 24 months and it is anticipated that the development would operate for a period of 30 years.

The centre of the development site is located approximately 4km south of the hamlet of Chesters, approximately 14.7km south east of Hawick and 6.9km west from the boundary of Northumberland National Park at Carter Bar. The site is predominantly occupied by coniferous forestry plantation with one turbine being located on the lower lying mixed agricultural land to the north. The extensive conifer forest forms part of the northern extent of Wauchope Forest. As with most conifer forests, there are numerous compartments comprising trees at different stages of growth from recently clear-felled ground, newly planted trees, young un-thinned stands through to mature trees. The turbine bases would lie between 219m and 298m above sea level with the highest point of the development site being the northern slopes of Scrathy Holes (521m.) lying to the south and the site falls away to the north and the A6088 Hawick to Carter Bar road.

The final choice of turbines will be dependent upon detailed design work and market availability but for the purpose of the Environmental Impact Assessment undertaken it is understood that they will be of three blade construction mounted upon a tapering or cylindrical tubular steel tower. Figure 4.5 implies that the hub heights for the two different types of turbines will be either 91.5 or 117.5 meters and the applicant suggests that the tower, hub and turbine blades will be coloured to a specification yet to be agreed with Scottish Borders Council.

Potential Effects upon the Landscape and Special Qualities of Northumberland National Park as a Result of the Highlee Hill Wind Farm Development

The Environmental Statement (ES) submitted as part of the application for Highlee Hill Wind Farm, in particular the Landscape and Visual impact Assessment (LVIA), has been reviewed and the detail and findings therein checked and verified by additional desktop and site analysis. This response identifies the perceived effects of the proposed development as assessed by the Northumberland National Park Landscape and Forestry Officer and compares these findings with that set out within the ES.

Landscape Visual Impact Assessment

In order to ascertain the likely effects of a development such as a wind farm on the landscape character and views of an area a process of Landscape Visual impact Assessment (LVIA) has been developed. The process is used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views visual amenity. Judgements are made on the sensitivity of landscapes and views affected by the impact, the value placed upon them and the size, scale, duration and reversibility of effects resulting from the proposed development.

Throughout this response the terms 'impact' is used to describe the action being taken and 'effect' is defined as the change resulting from that action. In assessing the sensitivity of the landscape or a particular receptor site, the likely magnitude of change and thus determining the likely significance of the effects. The different levels of sensitivity and magnitudes of change used in this analysis and the descriptions for each level are set out in Appendix 1.

The study area is dependent on the height of the proposed development and nature of the surrounding landscape. Guidance produced by Scottish Natural Heritage[1] (SNH) indicates that for wind turbines of 150 meters or higher in height a Zone of Theoretical Visibility (ZTV) should extend to 45 kilometres. The topography between the north east through to south of the application site is significantly higher than the application site itself, thus extending the theoretical horizon and visibility of the proposed development from receptor sites located in those areas. This fact also means that many of the key receptor sites in these areas will be effectively looking down onto the development and it is likely to be set against a landscape backdrop (see figure 4.14d , dark conifer forest) rather than the horizon or sky.

This assessment focuses on the potential effects of the development on the landscape character and views both into and out from Northumberland National Park. This is a national designation but is overlapped to the south by the Hadrian's Wall World Heritage Site, an internationally acclaimed landscape. The special qualities associated with Northumberland National Park include its distinctive landscape character, a landscape rich in biodiversity, geodiversity, cultural heritage, with a true sense of tranquillity and dark skies. "Land of the Far Horizons!" Predominantly an upland farmed landscape with a mosaic of natural and semi-natural habitats. The landscape itself and the appreciation of it are extremely sensitive to large scale development and the aesthetic appeal is treasured and valued by many who live in and visit the National Park.

A development such as Highlee Hill, comprising eleven wind turbines of 176 meters in height and a further two of 150 meters approximately 6.2km from the National Park is regarded as a substantial infrastructure development. Paragraph 115 of the National Planning Policy Framework states that 'Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Beauty, which have the highest status of protection in relation to landscape and scenic beauty'. In assessing the possible effects on landscape character and views into and out from the National Park consideration is also given to:-

- Visitor's perception of the National Park landscape, particularly in those character areas having sight of the development.

- The setting of the National Park and its place within the wider Northumberland and Scottish Borders Landscape;

[1] Visual representation of Wind farms - Good Practice Guidance: Scottish Natural Heritage, V2.1. 2014

- Visitor's understanding and enjoyment of the National Park, for example when driving on a road or using a public right of way or visiting a scheduled ancient monument, and at the same time, having sight of the development.

To assess the magnitude of the landscape effects, the number, size and location of the wind turbines need to be considered in context to the landscape character and the setting of the development. Consideration also needs to be given to the duration and reversibility of the landscape effects derived from the proposed development.

Landscape Impact Assessment

The landscape impact assessment deals with the effects of change and development on landscape as a resource. The first part of this exercise is to identify and establish the current baseline through site visits and desk study prior to development. As part of its responsibilities in delivering the European Landscape Convention, Natural England has been revising the 159 National Character Area (NCA) profiles across the country. In addition, Northumberland National Park Authority and Northumberland County Council have undertaken more localised landscape character assessments. The table below identifies the respective National and local Character Areas identified by these studies that the development lies within and also those that it is likely to directly affect.

	National Character Area	**Character Type**	**Landscape Character Area**
Site Located outside the Park In	• The Borders	• Sothern Uplands Forest Covered	• Wauchop Forest
	National Character Area	**Character Type**	**Character Area**
Visible from these areas within the National Park	• Cheviots • Border Moors and Forests	• Foothills and Fringe Valleys • Rounded Hills • Rolling Uplands • Moorland Forestry Mosaic	• Northern Hills, Bowmont Water and Glendale • Cheviot Rounded Hills • Cottonshope Valley • Kielder, Wark and Redesdale Forest

Table 1

Northumberland National Park Authority Landscape SPD Guidelines for Development:

Based upon the findings of the Landscape Character Assessment of Tynedale District and Northumberland National Park (June 2007), the National Park Authority has produced a Landscape Supplementary Planning Document in which it identifies the key characteristics for each of 12 Character Types found covering the National Park. Accepting that this development is not in the National Park, the Landscape Character Types that the ZTV suggests will be affected by this proposed development are set out below with the respective guidelines for development:-

Foothills and Fringe Valleys: Northern Hills, Bowmont Water and Glendale

- Man-made vertical structures which detract from the rounded landform of the outlying hills that define the fringe valleys should be avoided, particularly where they would adversely affect views from within the National Park[2];

Cheviot: Rounded Hills

- Man-made vertical structures which detract from the open and rounded landform, or adversely affect uninterrupted skylines and unbroken panoramic views, should be avoided. Care should be taken to prevent landscape and visual impacts associated with wind farm development, whether in Scotland or England, where it may adversely affect the special qualities and setting of the National Park;

Rolling Uplands: Otterburn Plateau,

- New development should not be visually prominent and should not detract from the landscape quality of the area. Any development of communications masts or other tall structures on the open exposed ridgelines of this landscape should be avoided as it could lead to visual clutter and loss of tranquillity as this landscape is highly sensitive visually due to its open character.

Moorland Forestry Mosaic: Redesdale Forest

- Wind farm development proposals (either in Scotland or England) should avoid adverse impact on this expansive upland landscape and the setting of the National Park[3].

The ZTV map identifies that this proposed development will be visible from two of the National Character Areas that cover the National Park and numerous locations within these, including roads, scheduled ancient monuments, other historic sites, The Pennine Way National Trail, other promoted routes, public rights of way and access land. In addition the proposed development will have an effect upon the setting of the National Park when viewed from various sites outside the National Park looking back in, ie in cases where the distinctive high ground of the National Park, in this case the Border Ridge, forms the backdrop to a view.

Appreciating the landscape as it is today is one thing but knowing how the landscape has evolved is fundamental to the value and appreciation that people associate with it. Thus there is a need to identify and understand the historic landscape character and the natural and cultural heritage influences that have shaped it. In this case consideration should be given to the geodiversity of the National Park, and the human activity that has subsequently left its mark on the landscape. The Border Ridge, Cheviot, Deer Street and Russell's Cairn on the Pennine Way are some of the most obvious examples to consider with this application.

In relation to the timescale of the Highlee Hill proposals it is acknowledged that there will be three phases to this development covering a time period of up to 32 years, namely construction, operation and decommissioning. Whilst noted, it is not thought that there will be a significant effect on the special qualities of the National Park during the early *construction or latter decommissioning phases of the project due to the temporary, short-term* nature of this work. Whilst lifting cranes will be involved, the effect of the project on the landscape is likely to become noticeable and regarded as long-term between the erection of the first turbine and dismantling of the last. Work undertaken before and after these points in time is

[2] Guidance on identifying important views is available from SNH http://www.snh.gov.uk/publications-data-and-research/publications

[3] Guidance on identifying important views is available from SNH http://www.snh.gov.uk/publications-data-and-research/publications

not likely to have a significant effect on the landscape character of the National Park or views into or out from the National Park due to topography and distances involved. It is noted that the effects on the landscape character of the National Park are largely reversible after 32 years, should the turbines be dismantled and removed from site.

In summary then, as a nationally important landscape designation highly valued by locals and visitors alike, the areas of the National Park that would be affected by this development are deemed to be of high sensitivity. The expected magnitude of change to the landscape character of these areas covered by the ZTV will vary, largely based upon factors such as distance from the development, topography and current nature of the landscape. Essentially, the magnitude of change on the Cheviot Hills and Border Moors and Forest National Character Areas is likely to range between negligible to high based upon the methodology identified in appendix 1. At present there are no existing man-made vertical structures of a similar scale or size in the vicinity of Highlee Hill and as such the proposed industrial development would be out of keeping with the exposed upland farm and aforested landscape currently viewed from the border ridge. It is acknowledged that wind turbines are increasingly becoming a feature of many upland landscapes these days but this being the case, the views gained from England's first long distant National Trail that runs along the Border Ridge are treasured by many and the unfettered nature of the surrounding landscape is becoming increasingly rare. As figure 4.14d within the environmental statement identifies, the effect when viewed from the Pennine Way at Black Hills is dramatic and the introduction of these turbines would be a visually prominent addition to the features and characteristics within this upland landscape. The Border Ridge is identified as the most sensitive landscape receptor within the National Park that is likely to experience the greatest magnitude of change as a result of this proposed development with the effect generally increasing the nearer one gets to Carter Bar when travelling along the ridge in a south westerly direction.

Thus based upon the methodology set out in appendix 1, it has been identified that the proposed Highlee Hill Wind Farm development would have a significant effect upon the landscape character of the National Park as summarised in the matrix table overleaf.

NNPA Evaluation of Indirect Landscape Effects for Highlee Hill Wind Farm

Magnitude of Change	**Landscape Sensitivity**			
	High	Medium	Low	Negligible
Very High	**Very Substantial**	**Substantial**	**Substantial / Moderate**	Moderate
High	**Substantial**	**Substantial / Moderate**	Moderate	Slight
Medium	**Substantial / Moderate**	Moderate	Slight	Slight / Negligible
Low	Moderate	Slight	Slight / Negligible	Negligible
Negligible	Slight	Slight / Negligible	Negligible	Negligible
Zero	None / No view	None / No view	None / No view	None / No view

Key **Table 2**

Significant

Not Significant

Visual Impact Assessment (VIA)

Analysis of the ZTV map and the GIS system identifies that the proposed development would theoretically be visible from two of the National Character Areas covering the Northumberland National Park and five Landscape Character Areas in the Park; see table 1 above. Based upon this and selective field visits a selection of receptor sites / viewpoints possibly thought to be affected by the proposed development are listed below. This list is not exclusive and it is understood that other sites within and outside the National Park will also be affected by the proposed development but time prevents these being included in this assessment at present.

Key receptor sites identified within the National Park looking out included:-

View point	Sensitivity	Magnitude of change	Significance
• Pennine Way (Black Halls)	High	Medium	Substantial / Moderate
• Pennine Way (Lamb Hill)	High	Small	Moderate
• Pennine Way (Cheviot Plateau)	High	Small	Moderate
• Pennine Way (The Schil)	High	Negligible	Slight
• Alwinton Footpath 53 (Brownhart Law)	Medium	Medium	Moderate
• Deer Street (MOD Publicly Accessible Road between Chew Green and Outer Golden Pot)	Medium	Small	Slight
• Users of public rights of way east of the development site	High Medium	Medium None	Substantial / Moderate to None
• Users of Access Land east of the development site	Medium Medium	Medium None	Moderate to Slight / None
• Carter Bar A68 Border Crossing and View Point	High	None*	None*

*This assumes that there will be forestry cover between Carter Bar and the proposed development site. As Figure 4.28 indicates, the turbines may be visible in situations where no ground vegetation exits between the two sites.

The review did not identify any key receptor sites outside the National Park that when looking back in through the development would have the backdrop of the National Park and in particular the Border Ridge directly affected/obscured by the development.

The ZTV indicates that the proposed development at Highlee Hill will be visible from sites such as the Cheviot Plateau (31.0Km.) and sites along the Pennine Way north east of Lamb Hill (18.9Km.) as indicated in figure 4.5 of the Environmental Statement. However, the distances between these receptor sites and the development mean that the turbines are likely to be seen on the horizon, and even then blade movement is unlikely to be discernible with the naked eye at these distances. There will not be a significant effect upon the views out from the National Park from these locations or access land in-between. However for closer sites such as at Black Halls, (15.9Km.) the magnitude of change will be greater and

significance increase, particularly because the development will be looked down upon and set against the dark conifer background of Wauchop Forest (see picture 4.14d).

As figure 4.29f within the Environmental Statement identifies, for Pennine Way walkers travelling is a south-westerly direction from the summit of Cheviot, along the 22km Border Ridge, the Highlee Hill development will lie directly in front of them for much of the way and the significance of the effect would increase the nearer to the development one got. In my view this unfortunate alignment of the proposed development with the Pennine Way would exacerbate the effect that this proposed development would have on the views gained from the Pennine Way as one's eye is naturally drawn to views directly ahead as opposed to those set off to one side.

The proposed development will have a significant effect upon the views looking out from the National Park, particularly at locations along the Pennine Way on the Border Ridge such as at Black Halls.

The assessment of viewpoint sensitivity and expected magnitude of change is summarised in the table below and this identifies the suggested significance of the Highlee Hill development on views both into and out from the National Park.

NNPA Evaluation of Visual Effects for Highlee Hill Wind Farm

Magnitude of Change	**Landscape Sensitivity**			
	High	Medium	Low	Negligible
Very High	**Very Substantial**	**Substantial**	**Substantial / Moderate**	Moderate
High	**Substantial**	**Substantial / Moderate**	Moderate	Slight
Medium	**Substantial / Moderate**	Moderate	Slight	Slight / Negligible
Low	Moderate	Slight	Slight / Negligible	Negligible
Negligible	Slight	Slight / Negligible	Negligible	Negligible
Zero	None / No view	None / No view	None / No view	None / No view

Key

	Significant
	Not Significant

Cumulative Landscape and Visual Effects

As previously identified there are no similar significant man-made vertical structures currently in the Highlee Hill area and the nearest Windfarm Scheme currently approved I believe would be that at Windy Edge some 14.4Km to the south west. As such I do not believe that there would be a significant cumulative effect on the landscape or views with

other schemes currently approved. This therefore reinforces the fact that this proposed development would be the first, if approved, to significantly affect the unfettered skyline and views of this part of the Scottish Borders and sensitive views out from the Northumberland National Park.

However, I do believe that there would be a significant cumulative effect should the schemes currently known to be at the pre-application stage of the planning process, specifically with the proposed 50 turbine scheme at Wauchope Forest East (748m.) and the 20 turbine scheme at Wauchope Forest West (3.7Km). The cumulative effect of all three developments being approved would result in the landscape character of Warchope Forest being one dominated by wind turbines rather than the dark forestry mosaic landscape currently present.

Review of the Highlee Hill Environmental Statement, Specifically Chapter 4 – Landscape and Visual Impact Assessment.

Initial observations have been made using the sticky note function of Adobe Reader whilst reviewing Chapter 4, the LVIA within the Highlee Hill wind farm application. This report should be read in conjunction with the comments embedded within file Highlee Hill 16NP0071CO ES Main Text Chapter 04 with RM comments (see attached).

Essentially whilst the methodology of the Landscape Visual Impact Assessment is generally sound, I do disagree with some of the technical aspects, ie the study area should have extended to at least 45km in order to identify all potential effects of the development as per paragraph 52 of the SNH current guidance[1]. The applicant only looked within a 40km radius, quoting the same reference document that then makes me wonder whether they were assessing just the 150m. high turbines rather than the 176m. turbines?

It was also disappointing not to see that A3 single frame photomontage images included in the information documents on the application CD provided as per guidance set out in SNH current guidance[1] to facilitate comparison in the field. It is difficult to ascertain the true effect of the development on the chosen viewpoints by purely using the panoramic images provided.

Some of the distances quoted between receptor sites and the development are inconsistent in that the distance between the development and Carter Bar is quoted as being 5.5km in paragraph 4.100 and then 6.21km in table 4.6 and Figure 4.28a.

I also have a differing view with certain aspects of the LVIA assessment set out in Tables 4.8a and 4.8b of the Environmental Statement and table 4.3 of the Technical Report. In table 4.8a the applicant assesses the character sensitivity of viewpoint 7 to be Medium where as I would advocate this being High given both the exposed nature of the location on a National Trail and in a National Park and industrial nature of the development concerned. In Table 4.2B of the Technical Report the sensitivity of the landscape character found at viewpoint 7, namely BDR6 – Cheviot Upland Cocklaw Group LCT was assessed as being medium to high whilst in table 4.3 the sensitivity drops to just medium for this LCT. In my view the residual effect on the landscape character found along much of the Pennine Way in Northumberland National Park would be major in that the proposed development is likely to be visually prominent, lying directly in front of Pennine Way walkers travelling south west along much of the Border Ridge, and clearly standing out against the dark conifer backdrop of Wauchope Forest.

Interestingly there is no mention as to the implications of viewing this development site from receptor sites that in some cases are several hundred meters higher than the development site itself. Viewing from height is likely to increase viewing distances and reduces the effect of nearby vegetation in providing screening of the turbine structures.

CONCLUSION

The fact that the applicant has chosen to look at the effects of this proposed development within a study area of only 40km. in my mind indicates that the full effects of the Highlee Hill development have not been fully identified or assessed. The substantial height of the proposed turbines, 176m. and the implications of altitude extending the possible visible range from many of the receptor sites found within the National Park and giving rise to a landscape rather than skyscape backdrop to the turbines are important aspects of this proposal.

For the reasons identified above I do not believe that the LVIA section of the ES to the Highlee Hill wind farm development has adequately identified the significance of the effects that this development would have on the landscape character and views of Northumberland National Park. I believe that there would be significant effects on both the landscape character and views out from the National Park, in particular from the Pennine Way National Trail and other sections of the Border Ridge and as such **I object to this application**.

Appendix 1 LANDSCAPE VISUAL IMPACT ASSESSMENT

Summary of parameters used during assessment and the associated descriptions.

Evaluation of Landscape and Visual Effects

Magnitude of Change	**Landscape or Visual Sensitivity**			
	High	Medium	Low	Negligible
Very High	**Very Substantial**	**Substantial**	**Substantial / Moderate**	Moderate
High	**Substantial**	**Substantial / Moderate**	Moderate	Slight
Medium	**Substantial / Moderate**	Moderate	Slight	Slight / Negligible
Low / Small	Moderate	Slight	Slight / Negligible	Negligible
Negligible	Slight	Slight / Negligible	Negligible	Negligible
Zero	None / No view	None / No view	None / No view	None / No view

Key

Significant

Not Significant

Landscape Sensitivity and Magnitude

Examples of Potentially Sensitive Landscapes	
High	Landscape character, characteristics, and elements where, through consideration of the landscape resource and characteristics, there would generally be a lower landscape capacity or scope for landscape change and higher landscape value and quality. Often includes landscapes which are nationally or internationally valued.
Medium	Landscape character, characteristics, and elements where, through consideration of the landscape resource and characteristics, there would be a medium landscape capacity or scope for landscape change and generally medium landscape value and quality. Often includes landscapes which are locally designated.
Low	Landscape character, characteristics, and elements where, through consideration of the landscape resource and characteristics, there would be a higher landscape capacity or scope for landscape change and generally lower landscape value and quality. Usually applies to landscapes that may have been subject to very intensive agriculture, blanket forestry, un-mitigated / partly naturalised mining operations or similar.
Negligible	Landscape character, characteristics, and elements where there is a high landscape capacity, a planned desire for landscape change and generally lower landscape value and quality. Usually applies to derelict landscapes, spoil heaps, and de-graded urban fringe areas that require restoration or re-development / re-planting and where this is supported by planning policy.

Examples of Magnitude	
Very High	A total change that would be large in scale and / or extent and include the loss of key landscape characteristics, or the addition of new characteristic features or elements, that would become the dominant characteristics of the landscape and change the overall landscape quality, and character.
High	A prominent change that may be large in scale and / or extent and include the loss of key landscape characteristics, or the addition of new features or elements that would become the characteristics of the landscape, changing the overall landscape quality and character.
Medium	A noticeable / prominent change of more limited scale and extent including the loss of some key landscape characteristics or elements, or the addition of some new features or elements, that would potentially change the landscape character.
Low	A noticeable change affecting small areas of landscape character and quality, including the loss of lower value landscape elements, or the addition of new features or elements of limited characterising influence.
Negligible	A change affecting smaller areas of landscape character and quality, including the loss of some landscape elements, or the addition of features or elements, which are either of low value or hardly noticeable.
None	There would be no change to the receptor.

Visual Receptor Sensitivity and Magnitude

Examples of Potentially Sensitive Landscapes	
High	Generally, people in residential properties or settlements and on long distance, strategic footpaths or popular / local footpaths and at tourist destinations, viewing important landscape features, beauty spots and picnic areas, where the activities are focused on the landscape. Receptors include walkers, cyclists, and horse riders travelling through the landscape. The location, numbers, frequency of use and visual context of the viewpoint would be higher.
Medium	Generally, people within recreational space, local and less well used footpaths or tracks. Receptors include walkers, cyclists, horse riders, skiers, minor road users, and rail passengers travelling through the landscape. The location, numbers, frequency of use and visual context of the viewpoint would be medium.
Low	Generally, people within non-designated landscapes of lower value or quality with low footpath or recreational use. Receptors are likely to include people at their place of work, or taking part in activities not involving an appreciation of the landscape, and drivers on motorways and other busy trunk roads. The location, numbers, frequency of use and visual context of the viewpoint, would be low.
Negligible	Generally not used, but would apply to waste disposal sites and derelict land.

Examples of Magnitude	
Very High	A major change or obstruction of a view that may be directly visible, appearing as the dominant and contrasting feature appearing in the foreground.
High	A major change or obstruction of a view that may be directly visible, appearing as a prominent and contrasting feature and/or appearing in the foreground / middle ground.
Medium	A moderate change or partial view of a new element within the view that may be readily noticeable, directly or obliquely visible including glimpsed, partly screened or intermittent views, appearing as a noticeable feature in the middle ground.
Small	A small level of change, affecting a small part of the view that may be obliquely viewed or partly screened and/or appearing in the background landscape. May include moving views at speed.
Negligible	A small or intermittent change to the view that may be obliquely viewed and mostly screened and/or appearing in the distant background or viewed at high speed over short periods and capable of being missed by the casual observer.
None	There would be no change to the view.