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Report to
Calderdale Metropolitan Borough Council

Proposed Gorpley Wind Farm: Assessment of Landscape and Visual Impacts

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Contents

1	INTRODUCTION	1
1.1	Scope of work.....	1
1.2	Project description and development context	1
2	LANDSCAPE AND VISUAL CONTEXT	2
2.1	Description of the site and surrounding area	2
2.2	Landscape character	2
2.3	Landscape designations	3
2.4	Recreation and visual amenity interests	4
2.5	Landscape sensitivity to and capacity for wind energy	4
3	THE LVIA	5
3.1	Adequacy and reliability	5
4	APPRAISAL OF THE IMPACTS OF THE SCHEME	6
4.1	Introduction.....	6
4.2	Fit with landscape character	7
4.3	Impacts on landscape character	7
4.4	Impacts on landscape designations.....	8
4.5	Impacts on visual amenity	9
4.6	Cumulative impacts	10
4.7	Impacts of ancillary infrastructure	11
5	CONCLUSIONS ON LANDSCAPE AND VISUAL IMPACTS.....	12
	Annex 1: Landscape designations around Gorpley (excluding SLA)	13

1 INTRODUCTION

1.1 Scope of work

Julie Martin Associates has been commissioned by Calderdale Metropolitan Borough Council to prepare an assessment of the landscape and visual (including cumulative) impacts of a proposed five turbine wind farm on land above Gorpley Reservoir, Todmorden. A planning application for this development was submitted by Kelda Water Services in November 2012, accompanied by an *Environmental Statement* and other supporting documentation¹. The application was submitted to both Calderdale Metropolitan Borough Council and Rossendale Borough Council as the development straddles the local authority boundary. The majority of the site lies in Calderdale but the proposed site access is in Rossendale.

This assessment has been based on review of the *Environmental Statement* (ES) and a site visit. It presents an independent appraisal of the principal landscape and visual impacts of the proposed scheme, drawing on the information presented in the ES. The report begins by examining the landscape and visual context for the development. It comments briefly on the adequacy and reliability of the landscape and visual impact assessment (LVIA) that is presented in the ES. It then identifies and appraises the main landscape, visual and cumulative impacts that are considered to be significant and of relevance to decision-making on this application. It concludes with a summary of the overall landscape, visual and cumulative impacts of the scheme, and with suggestions as to measures that might help to mitigate the impacts of the scheme should it be consented.

1.2 Project description and development context

The proposal would involve the construction and operation of a wind farm on a 17ha site on Inchfield Moor above Gorpley Reservoir, roughly equidistant between the towns of Todmorden and Bacup. The development would have an installed capacity of between 10 and 15MW and would comprise five turbines with a blade tip height of 110-125m.

Associated infrastructure would include turbine foundations and transformers; crane hardstanding areas (20m by 40m) adjacent to each turbine; a new site access point and 4km of new on-site access tracks (partly shared with the nearby consented Reaps Moss wind farm); a new switchgear/control building (12m by 6m and 5.5m high); underground cabling; and a meteorological mast (78-85m high) of lattice design. The off-site connection to the electricity network would be the subject of a separate consenting process but the connection is expected to be made via an underground connection along Bacup Road to an existing 33kV substation in Todmorden. Two temporary construction compounds are also proposed measuring approximately 0.25ha each, one located close to the site entrance and the other on Inchfield Moor close to one of the turbines.

The proposed turbines would be laid out as a staggered row running roughly west north-west to east south-east across Inchfield Moor, with base heights ranging from 361m to 401m above ordnance datum (AOD). They would lie just below and to the east of the crest of the long ridge that extends from Crook Hill (north-east of Rochdale) to Heald Moor and Thieveley Pike (south-east of Burnley). There is already planning consent for three other wind farms along this ridgeline, namely Crook Hill (12 turbines, 125m to blade tip, 1.5km to the south), Reaps Moss (3 turbines, 125m to blade tip, 750m to the west) and Todmorden Moor (5 turbines, 125m to blade tip, 2km to the north). The proposed Gorpley wind farm would be located between the Crook Hill and Reaps Moss wind farms. A report on the

¹ <http://portal.calderdale.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=MDDCLUDW0D600>

landscape and visual impacts of these proposed wind farms was prepared in 2007² and much of the content of that report is also relevant to the current application.

2 LANDSCAPE AND VISUAL CONTEXT

2.1 Description of the site and surrounding area

The proposed wind farm would lie around 2km from the edges of the built-up areas of both Todmorden (to the east) and Bacup (to the west). It would be located just to the south of the A681, from which it would be accessed, occupying the eastern slopes of the Crook Hill to Heald Moor ridge in the area around Gorpley reservoir. The ridge top here comprises open grass moorlands and blanket bog, with some evidence of historic small scale coal mining activity. The highest point on the site is Trough Edge End (454m AOD) on the southern site boundary; north of this the land falls gently to around 385m AOD at the junction with the A681. To the east the ground falls steeply to Gorpley reservoir and water treatment works at around 250m AOD. Above the reservoir the site includes a waterfall; below the reservoir is Gorpley Clough, an attractive wooded gorge with further waterfalls. To the north and east of the site an electricity transmission line runs across the lower hill slopes.

Most of the site is open access land and there is a comparatively dense local footpath network. A footpath up Gorpley Clough provides access to the hill tops via footpaths running north and south of the reservoir, and there is also a small car park and interpretation panel near the water treatment works. The paths from the clough connect to two main ridgeline walking routes, the Rossendale Way and the Todmorden Centenary Way, both of which are long distance paths. Given its elevation, the site is very widely visible, especially from the moors to the north and east. It forms a key part of the skyline at the head of the Calder valley. It also fulfils a similar role in respect of the Irwell valley.

2.2 Landscape character

In landscape character terms, the site sits on a north-south ridge in the central section of the *Southern Pennines* National Character Area³, which extends from the outskirts of Bradford, Halifax and Huddersfield as far as west as Bolton and Blackburn. The key characteristics of the National Character Area are:

- Large scale, open, sweeping landscape with high flat topped hills providing extensive views, cut into by narrow valleys with wooded sides.
- Mosaics of moorland vegetation on the plateaux, including blanket bog, and heathlands, supporting internationally important habitats and assemblages of upland birds, invertebrates and breeding waders.
- Enclosed upland pastures and hay meadows enclosed by drystone walls on the hillsides, and narrow valleys with dense gritstone settlements in the valleys, with steep slopes often densely wooded, providing strong contrast with open moorlands.
- Many reservoirs on the moors supplying drinking water to adjacent towns, wintering and breeding habitats for birds and high quality recreation experiences.
- Medieval villages and smallholdings on the higher shelves of land above the valleys, with small fields and a dense network of lanes and paths.
- Local stone buildings, with stone flags on roofs, bring a high degree of homogeneity to towns, villages, hamlets and farmsteads.

² Julie Martin Associates (2007) *Landscape and Visual Impact Assessment of Wind Power Proposals at Todmorden Moor, Reaps Moss and Crook Hill*, report to Calderdale Metropolitan Borough Council, Rossendale Borough Council, Rochdale Metropolitan Borough Council and Lancashire County Council.

³ <http://publications.naturalengland.org.uk/publication/511867?category=587130>

- Rich time depth from prehistoric features such as carved rocks, to medieval boundary stones, old mineral extraction sites, and more recently, mills, factories and non-conformist chapels.
- Historic packhorse routes traverse the moorlands, while more recent road, rail and canal routes are located along valleys.
- Prominent features, including Stoodley Pike, Darwen Jubilee Tower, Rivington Pike, wind farms and communications masts, visible from afar.

At a more detailed level⁴ the site lies wholly within the *High Moorland Plateaux* landscape character type, the key characteristics of which are:

- Rolling high plateau with series of ridges and summits.
- Characteristic stepped topography of interlocking terraces and gritstone edges.
- Unenclosed moorland affording extensive views.
- Open, exposed, with sense of remoteness and 'wildness'.
- Mosaic of upland habitats, of nature conservation importance, reflected in the designation of the South Pennines SSSI/SPA.
- Important archaeological (prehistoric) landscape.
- Resource exploitation visible in the form of power supply structures (pylons and wind turbine developments) plus reservoirs and mineral extraction sites.
- Very sparse settlement – only occasional isolated farmsteads – many now abandoned.

The *High Moorland Plateaux* landscape character type is very closely juxtaposed with two other landscape character types, namely the *Moorland Fringe/Upland Pastures* and *Settled Valleys*, further details of which can be found within the landscape character assessment referenced above.

Locally, the site is part of the *South Pennine Moors* landscape character area, described as:

"a large scale sweeping open landscape with strong skyline ridges and expansive views offering a sense of remoteness, isolation and wildness. These perceptual qualities are reinforced by the proximity to the surrounding urban areas and intersecting industrial valleys. The moorland contains a wealth of natural and cultural features and forms part of the SPA supporting internationally important bird populations. The wild landscape has been a powerful influence and inspiration on the writings of the Brontë sisters. The novels of Wuthering Heights and Jane Eyre, among others, create an extraordinary literary landscape with a strong image in the minds of people worldwide. The South Pennine Moors have a special quality of rugged enduring grandeur, although the landscape is nevertheless very vulnerable".

2.3 Landscape designations

The development site carries no statutory (national) landscape designations. The closest such designations (see map in *Annex 1*) are the Peak District National Park, approximately 16km to the south-east of the development site at its closest point; and the Forest of Bowland Area of Outstanding Natural Beauty (AONB) approximately 18km to the north-west. However the ridge upon which the proposed development lies has received national landscape recognition in the past, having been identified in 1947 by the National Parks Committee, chaired by Sir Arthur Hobhouse, as part of a South Pennines 'Conservation Area' or potential AONB that if designated would have connected the Peak District National Park to the Yorkshire Dales National Park to the north⁵. AONB designation remained under consideration by the Countryside Commission until the early 1970s.

⁴ Land Use Consultants (1999) *South Pennines Landscape Character Assessment*, report to SCOSPA.

⁵ Hobhouse, A (1947) *Report of the National Parks Committee (England and Wales)* HMSO.

In the absence of AONB designation, the landscape of the South Pennines was given special attention from the 1970s onwards by the Standing Conference of South Pennines Authorities (SCOSPA). In 1996 SCOSPA designated the non-statutory South Pennines Heritage Area (SPHA) in recognition of the area's high landscape and heritage value. More recently, in 2005, Pennine Prospects⁶ was formed to act as champion for the SPHA, coordinating regeneration activity to conserve and enhance the area's landscape and heritage and improve access for all. Pennine Prospects has made a successful bid to the Heritage Lottery Fund for the award-winning Watershed Landscape Project⁷. This focuses on the narrow band of landscape along the Pennine watershed or backbone, and includes the land on which Gorpley wind farm would sit. *Annex 1* shows these designations.

In planning terms the Calderdale Special Landscape Area (SLA), designated under Policy NE12 of the Calderdale Replacement Unitary Development Plan, coincides closely with the part of the SPHA that lies within Calderdale. The policy states that development within the SLA "*which would adversely affect landscape quality will not be permitted*" and that "*special attention should be paid to conserving and enhancing the visual quality and minimising the environmental impact of development.*"

2.4 Recreation and visual amenity interests

As part of the SPHA (and the Watershed Landscape) the site and surrounding area are of some considerable importance for recreation and visual amenity. The Pennine Prospects website flags up the fact that, with 7 million people living within an hour's drive, the SPHA is a strategic resource for recreation and acts as the "green heart" of three city regions (West Yorkshire, Greater Manchester and east Lancashire). As well as having extensive tracts of land which are open to public access and extremely accessible to nearby urban populations, there is an extensive network of public rights of way, many of them following the edges of the moorland plateaux, where they afford outstanding views into the valleys below and across the valleys to other areas of moorland.

The development site is typical of the wider SPHA in this respect. Specific recreational interests in and around the proposed Gorpley wind farm include the extensive access land above and around Gorpley reservoir; and the Rossendale Way and Todmorden Centenary Way, which cross the western part of the site and are long distance walking routes of regional or strategic importance. Within a wider radius of around 5km there are a number of other such routes including the Burnley Way and Calderdale Way to the north, the Irwell Sculpture Trail to the west, the Rochdale Way to the south – all of them directly overlooking the development site. Finally, of national importance, the Pennine Bridleway and Pennine Way National Trails run north-south across the moorlands to the east of the proposed development, passing within 3-4.5km, with clear views towards the site.

2.5 Landscape sensitivity to and capacity for wind energy

The *Landscape Capacity Study for Wind Energy Developments in the South Pennines*⁸ forms part of the evidence base for the emerging Calderdale Local Plan and as such is a material consideration in determining this application. It provides guidance on landscape sensitivity to and capacity for wind energy development in the vicinity of the proposed development site. It is based on a detailed analysis of the landscape against a range of sensitivity criteria; and on appraisal of the emerging cumulative impacts of wind energy development within the South Pennines.

⁶ <http://www.pennineprospects.co.uk/>

⁷ <http://www.watershedlandscape.co.uk/>

⁸ Julie Martin Associates (2010) *Landscape Capacity Study for Wind Energy Developments in the South Pennines*, report to Calderdale Metropolitan Borough Council and others, <http://www.calderdale.gov.uk/environment/planning/local-plan/evidence-base/index.html>

Sensitivity is assessed by landscape character type. The relevant type is A: High Moorland Plateaux (pp 55-56 of the report). The sensitivity assessment states that: *“Overall, this type is of high sensitivity over most of its area. It is important to the continuity of the Pennine backbone and is highly sensitive for this reason, particularly where the moorlands narrow, as between Crook Hill and Heald Moor”*.

In terms of capacity, the site falls within area 5: South Pennine Moors (pp 91-92 of the report). Here the assessment states under ‘opportunities’ that: *“Opportunities for further wind energy development should largely focus on existing development sites... Opportunities for expansion of wind energy development on the Crook Hill to Heald Moor ridge are however much more limited due to space constraints on this relatively narrow ridge, as well as potential cumulative impacts... In this area the preferred long term landscape strategy is one of decommissioning and restoration of an open moorland character.”*

Under ‘overall capacity’ the assessment notes that any further development in the western part of area 5 (i.e. any development on the Crook Hill to Heald Moor ridge beyond that already consented at Todmorden Moor, Reaps Moss and Crook Hill), *“could easily tip the balance to a ‘wind farm landscape’ i.e. creation of a fundamentally new character, and therefore should be avoided.”*

In summary, the capacity study clearly indicates that there is little or no landscape capacity for any further wind energy development in the vicinity of the proposed Gorpley wind farm.

3 THE LVIA

3.1 Adequacy and reliability

The LVIA contained within the ES is broadly adequate in scope, except in relation to cumulative impacts (see below). The visualisations supplied are clear and appear to be accurate and to have been prepared in accordance with good practice. However there are also a number of notable weaknesses in the LVIA that may affect the usefulness and reliability of its findings.

The baseline description (ES Volume 1, section 5.3) makes no reference to the designation history of the South Pennines, the SPHA or the Watershed Landscape even though the development site lies close to the heart of both these areas. It therefore tends to underestimate the value and importance of the landscape setting to the development. It also appears to ignore the very clear statements on landscape sensitivity and capacity that are included in the *Landscape Capacity Study for Wind Energy Developments in the South Pennines*, as detailed above.

The significance of impacts – especially landscape impacts – seems to be underplayed in at least some cases, notably in relation to the *High Moorland Plateaux* landscape character type and the Calderdale SLA. Both would be directly affected by the development but impacts are assessed as moderate or moderate/minor only, partly on the grounds that these landscapes extend over a wide area whereas the impacts would be localised. This is not a valid argument – the significance of an impact should not depend on the size of the assessment unit.

In terms of visual impacts, there is also a tendency to underestimate the impacts, particularly those on the nearby settlements of Todmorden, Bacup and Whitworth, where effects at the

settlement edges are assessed as moderate to negligible. In addition, only a generic assessment (by distance from the development) is provided of the visual impacts on users of the many public rights of way and transport routes in the area. This is of very limited use or relevance to decision-making. Given the national or regional importance of many of the walking routes concerned, a more detailed assessment – for example one giving details of the length of route affected by views of the site – would have been appropriate.

The LVIA's approach to the assessment of cumulative impacts – generally defined as the additional changes caused by a proposed development in conjunction with other similar developments – is questionable. The assessment appears to assume that, where wind farms are already operational or consented, these form part of the baseline and therefore there will be no cumulative impacts above and beyond the impacts identified in the main assessments of landscape and visual impacts (see ES Volume 1 Tables 5.11 and 5.12). This is not in accordance with good practice guidance, which indicates that cumulative impacts need not simply be the sum of the effects of multiple developments but can be more or less; and that cumulative impacts should be assessed (*inter alia*) where a new development is proposed in combination with one or more existing or approved but unbuilt developments⁹.

The cumulative zone of theoretical visibility (ZTV) mapping that has been provided (ES Volume 2 Figure 5.12) is almost impossible to read as the underlying colours cannot be distinguished clearly and all operational/consented wind farms have been grouped together. A series of such maps showing the individual ZTVs of specific wind farms in combination with the proposed Gorpley wind farm should have been provided so that the extent of the new wind farm's visibility could be compared with that of other wind farms in the vicinity.

Finally it should be noted that the photomontages and wirelines provided need to be viewed and interpreted with care. Although consistent with good practice guidance, they do not necessarily give an accurate impression of what the human eye would see at any given viewpoint. This is because they include a wider view angle than the 40-50 degrees that most people can see; which in turn tends to make turbines appear smaller in view, even when the image is seen at the correct viewing distance. In the case of the cumulative wirelines no viewing distance has been given but they should probably be viewed from around 200mm (i.e. uncomfortably close) if they are to give any realistic impression of turbine size.

4 APPRAISAL OF THE IMPACTS OF THE SCHEME

4.1 Introduction

In appraising the landscape and visual impacts of this proposal, a key issue relates to the influence on the baseline landscape and visual environment of the three consented wind farm developments on the Crook Hill to Heald Moor ridge. The impacts of the Gorpley wind farm *in the absence* of these developments would be very different from its impacts *with* the consented developments. This appraisal assumes that these other developments will take place. If the other developments for some reason did not take place, the landscape and visual impacts of the Gorpley wind farm would almost certainly be of greater significance. However, as things stand, the precedent of wind energy development along the landscape- and visually-sensitive Crook Hill to Heald Moor ridge line has already been set and impacts must be assessed in that context.

⁹ See Scottish Natural Heritage (2012) *Assessing the Cumulative Impacts of Onshore Wind Energy Developments*, paras 7, 8 and 24, <http://www.snh.gov.uk/docs/A675503.pdf>

The key aspects considered in the appraisal are: fit with and impacts on landscape character; impacts on landscape designations; impacts on visual amenity and enjoyment of the landscape; cumulative impacts with other operational and consented wind farms in the surrounding area; and the landscape and visual impacts of ancillary infrastructure.

4.2 Fit with landscape character

The development site is located on a shallow terrace of land east of and around 50m below the crest of the Heald Moor to Crook Hill ridgeline. The turbines would be arranged in a staggered row broadly following the west north-west to east south-east orientation of the ridgeline in this area. All of the turbines would be sited above very steep slopes close to the tops of the bluffs that overlook Gorpley Reservoir. The base heights of the three easternmost turbines would be significantly higher than those to the west, with a height difference of around 40m between turbine 5 and turbine 2.

The 'fit' with landscape character has been considered in terms of scale, landform, landcover, built environment and skylines and settings¹⁰. The landform within the site is relatively smooth and flowing with few obvious topographic or built features to provide scale comparators – factors that would tend to suggest that turbines may be accommodated successfully in landscape terms.

However, the location of the wind farm on the very edge of the steep slopes above Gorpley reservoir tends to heighten the turbines' perceived scale and visual prominence (especially in shorter range views) as do the significant variations in turbine height, which may be perceived as distracting and unsettling. Although the turbines would be set below the crest of the ridge, and so would be partly backclothed by land, they would still appear as a very visible skyline feature in most views, especially those from the east and north where the ground falls away rapidly. This is significant as the site is a key part of the skyline at the head of the scenic Calder valley. It is also an important component of the distinctive landscape setting of the historic market town of Todmorden, which is a focal point for views from the surrounding South Pennine Moors.

From this analysis it is concluded that the fit with landscape character of the proposed Gorpley wind farm would be moderate to poor.

4.3 Impacts on landscape character

The key characteristics of the *High Moorland Plateaux* landscape character type are well represented in and around the proposed development site. The landscape is broad, open and gently rolling, affording extensive views to Gorpley reservoir below and eastwards along the Calder valley to Stoodley Pike. The site has an exposed and relatively wild character and a mosaic of upland habitats including grass moor and moss. Limers Gate path, which crosses the upper part of the site, is believed to be an ancient routeway of some historic interest. Within the site itself landscape quality is good, although in the surrounding area transmission lines (to north and east) and some industrial development and quarrying along the A681 locally affect landscape quality.

From the ZTV mapping provided, the visibility and landscape influence of the Gorpley wind farm on the surrounding area would extend roughly from the boundary with Rochdale Metropolitan Borough Council in the south to Todmorden Moor and Thieveley Pike in the north. There would also be wide visibility at distances of less than 5km from high ground both north and south of Todmorden (to the east) and north and south of Bacup (to the west). Visibility would primarily affect the *High Moorland Plateaux* landscape character type – which

¹⁰ See Table 3, pp14-15 of the *Landscape Capacity Study*.

has been identified as being of high landscape sensitivity to wind energy development. Extensive areas of *Moorland Fringe/ Upland Pastures* would also be affected and are also of high landscape sensitivity¹¹.

In most areas the new turbines would be seen together with the turbines at consented sites nearby and therefore would not introduce new features into the landscape but rather extend wind turbine influence both numerically and spatially. The extent of the Gorpley wind farm's visibility relative to that of existing wind farms is uncertain due to the deficiencies in the cumulative ZTV mapping outlined earlier. While it is probably quite similar to that of Reaps Moss and Todmorden Moor, it seems likely that turbine visibility would extend for the first time to the area around Gorpley reservoir. Here the turbines would be seen directly above the reservoir and, at 125m, would be roughly as high again as the hill slopes that rise from the water's edge to the skyline. They would have an overwhelming influence on landscape character in this area. In addition, the Gorpley turbines would affect larger areas within and around Todmorden where the skyline impacts of consented wind energy development are still generally confined to views of the Todmorden Moor wind farm. Following this development, a much more substantial section of the skyline would be affected.

The wind farm would have an especially strong influence on the character of the central section of the Crook Hill to Heald Moor ridgeline (*High Moorland Plateaux*), as can be seen from ES Volume 2 Figure 5.18 which shows the view looking south from Todmorden Edge. This indicates that, as a result of the development, the whole width of the ridge would appear to be occupied by wind turbines. A similar effect would also apply in views further south along the ridge, for example near Freeholds Top (ES Volume 2 Figure 5.22). This is because of the predominantly east-west orientation of the turbines on the narrowest section of a mainly north-south ridge. Within the wider landscape, the turbines would also form part of an apparent 'line' of turbines extending for around 7km along the Crook Hill to Heald Moor ridge. This would become a much more continuous line than exists at present (discussed further under 'cumulative impacts' below).

In conclusion, the development is located on a very sensitive, narrow section of a key ridgeline that connects the northern and southern parts of the *High Moorland Plateaux* landscape character type and would have a defining influence on the character of the landscape character type as a whole for the reasons outlined above.

Even taking account of the effects of the consented wind farms on the Crook Hill to Heald Moor ridgeline, the landscape character impacts of the Gorpley wind farm are considered to be significant and adverse.

4.4 Impacts on landscape designations

The development would have limited impacts on nationally designated landscapes in the surrounding area. It would have a minor impact on the character and setting of the Peak District National Park and Pendle Hill (part of the Forest of Bowland AONB), as it would be seen at distances of 16km or more together with a considerable number of operational and consented wind farms.

The impacts on the Calderdale SLA, which forms part of the wider SPHA which in turn includes the Watershed Landscape, would be more significant. The *Landscape Capacity Study for Wind Energy Developments in the South Pennines*¹² summarises the 'special qualities' or values that have been ascribed to the landscapes of the SPHA. These include the presence of relatively intact and unspoilt landscapes sandwiched between urban

¹¹ See *Landscape Capacity Study* pp 61-62.

¹² *Landscape Capacity Study*, pp 32-33.

conurbations; the isolation, remoteness and relatively wild character of the moorland summits and cloughs, which is increasingly rare; and the access and recreation opportunities offered by the tracts open access land.

All these special landscape qualities would be adversely affected by Gorpley wind farm as a result of direct impacts on the landscape fabric and character of Inchfield Moor, Gorpley reservoir and Gorpley Clough. In addition, at a broader scale, the wind farm would fragment and adversely affect the landscape character and quality of a highly vulnerable part of the SLA and SPHA. In the case of the Watershed Landscape, the wind farm would further undermine the physical integrity and continuity of the narrow watershed landscape at one of its narrowest points. Its perceptual influence would extend across wide areas of designated landscape, with the wind farm being visible, potentially, from around two-thirds of the SLA area.

Again, it is accepted that these designated landscapes are already affected or potentially affected by operational and/or consented wind energy development and that further changes would be incremental. Nonetheless, ***the impacts on the Calderdale SLA, the wider SPHA and the Watershed Landscape are considered significant and adverse, reflecting the value of the landscape resources and the nature of the changes that would occur.***

4.5 Impacts on visual amenity

As noted earlier, the visibility of the proposed Gorpley wind farm would broadly correspond to that of the consented Reaps Moss and Todmorden Moor wind farms. However from review of the ESs for those developments, there appear to be some differences, with land around Gorpley reservoir and parts of Todmorden potentially acquiring views of wind turbines on the Crook Hill to Heald Moor ridge for the first time.

The selected viewpoints that are illustrated in Volume 2 of the ES include wireline images that show the Gorpley turbines together with all operational and consented turbines in the surrounding area. The principal visual impacts of the new wind farm in this context are summarised below.

From the north-east (VPs 12-17, Figures 5.28-5.34) the turbines are seen at a range of distances from the part of the South Pennine Moors that lies north of the Calder valley and Cliviger gorge. In these views the turbines are seen 'face on' as part of a line of turbines occupying a wide field of view along the Crook Hill to Heald Moor ridge. From some viewpoints, such as Gib Slack (Hebden Bridge), Hoof Stones and Bride Stones, the line appears almost unbroken, the Gorpley wind farm turbines more or less filling the only noticeable gap along the crest of the ridge. The turbines also appear widely separated as the full length of the array can be seen. Similar views are also obtained from the south-west (VP 9 Cowpe Moss, Figure 5.24). This type of view is considered to result in ***moderate or major*** impacts, depending on the viewing distance and type of viewer affected.

From the east and south-east (VPs 1-3 and 18, Figures 5.13-5.15 and 5.36), the turbines are viewed obliquely from the section of the South Pennine Moors that lies south of the Calder valley, on or close to the Pennine Bridleway or Pennine Way. From these viewpoints (for example Langfield Common) the turbines tend to appear as part of an overlapping cluster with Reaps Moss that is distinctly separate from Crook Hill and Todmorden Moor. In these views the marked variation in turbine height within the Gorpley site is evident and tends to draw the eye, with turbines 5 and 4 being especially prominent due to their higher elevation, for example in the views from the Shepherd's Rest (Lumbutts) and Bottomley. The impacts are generally ***moderate*** but ***moderate to major*** at the Shepherd's Rest and Bottomley.

Long views from the north-west (VP 6, Figure 5.20) and south-east (VPs 10 and 11, Figures 5.26 and 5.27) tend to view the ridgeline 'end-on' and in these views the Gorpley wind farm turbines fall within or next to denser clusters of turbines that occupy a relatively narrow field of view. Impacts are generally *minor or moderate* as a result.

Views **from surrounding settlements** include those from Huttock Top (VP 7, Figure 5.21) and Weir (VP19, Figure 5.38) on the western and northern outskirts of Bacup. The impact at these viewpoints is minor or moderate, as the turbines are partly hidden behind the ridgeline and are closely juxtaposed with consented turbines. Typical views from other parts of Bacup and from Todmorden and Whitworth have not been provided in the ES. However in the case of Todmorden, at least some areas are expected to experience moderate to major visual impacts, with clear views from distances as close as 2km. In these views the turbines would occupy a focal point on the town's south-western skyline, the north-western skyline also being occupied by turbines at Todmorden Moor. At Whitworth impacts are expected to be minor or moderate as partial visibility of some turbine tips only is expected.

The principal impact on **travellers** through the area would be on those using the A681 between Todmorden and Bacup. This view is illustrated in ES VP 20, Figure 5.39 – although the impacts would probably be even more severe travelling west above Todmorden, where the Gorpley Moor wind turbines would be seen overhead together with those of Reaps Moss and Todmorden Moor – a total of 13 turbines within 1-1.5km for around 2km of the route. The contribution of the Gorpley wind farm to these major impacts would be significant.

Recreational visitors to the site and surrounding area, including walkers, would also experience adverse visual impacts. These would be most severe in the case of visitors to Gorpley Clough and reservoir and walkers and riders using the ridgeline long distance paths (Rossendale Way and Todmorden Centenary Way), whose landscape experience would completely change. Around 2km or more of these walking routes would become enclosed on both sides by wind turbines, with outward views towards the Calder valley and the moors to the east being especially affected. Impacts would be major. Impacts on views from routes in the wider area, including the Pennine Way and Pennine Bridleway, would generally be more modest (minor or moderate), especially where views towards the site are oblique or along the line of the ridge, so that the turbines would be seen in close conjunction with consented turbines. 'Face on' views of the Crook Hill to Heald Moor ridge line, for example from the north side of the Cliviger gorge, would be more seriously affected.

The visual impacts of the Gorpley wind farm would vary according to the location and type of viewer. Significant adverse impacts are expected in a number of areas, as described above.

4.6 Cumulative impacts

As noted earlier, the cumulative impacts of a proposed wind energy development are those additional changes caused by a proposed development *in conjunction* with other similar developments. Many of the actual impacts have already been described above, so this section focuses on the implications of the changes that would occur in aggregate.

In terms of landscape impacts the principal cumulative effect would be to reinforce the adverse landscape character and quality changes that will affect the Crook Hill to Heald Moor ridgeline when wind farm development at Crook Hill, Reaps Moss and Todmorden Moor takes place. This would tend to 'tip the balance' towards the creation of a wind farm landscape – an outcome considered undesirable in the *Landscape Capacity Study for Wind Energy Development in the South Pennines*. The creation of a wind farm landscape would also run counter to the SLA designation, which aims to conserve and enhance landscape and visual quality.

In terms of visual impacts, as noted above the wind farm would have the effect of significantly altering the appearance of consented wind energy development along the Crook Hill to Heald Moor ridgeline, especially in views from the north-east and south-west, by creating an almost unbroken line of turbines over a distance of around 7km from a considerable number of viewpoints. The effect would be of a 'wall' of turbines at the head of the Calder valley and above the Cliviger gorge whereas at present some visual separation still remains between Todmorden Moor and Reaps Moss. This is a cumulative impact of some significance.

The *Landscape Capacity Study* includes general guidance on cumulative impacts and spacing between wind farms. It highlights the importance of retaining areas of undeveloped landscape between wind farms through a strategy of separation and clustering¹³. The proposed Gorpley wind farm is not consistent with this guidance. There is very limited separation from consented wind farms, with Crook Hill lying just 1.5km to the south, Reaps Moss 750m to the west and Todmorden Moor 2km to the north. Nor is there any effective clustering. The Gorpley wind farm does not read as part of an existing wind farm in the majority of views and is frequently seen as separate from its nearest neighbour, Reaps Moss. Indeed the ES acknowledges (Volume 1 Table 3.1) that "*it was not considered possible to obtain a more cohesive layout which might mirror Reaps Moss*".

Despite the presence of consented wind farms nearby and the relatively small number of additional turbines proposed, the Gorpley wind farm would give rise to significant cumulative impacts that would be greater than the sum of the individual site impacts.

4.7 Impacts of ancillary infrastructure

Site assessment suggests that ancillary infrastructure associated with the Gorpley wind farm would give rise to a number of landscape and visual impacts in the immediate vicinity of the development.

The proposed construction compounds, sited near Clough Head and above Gorpley reservoir, would have direct impacts on the moorland landscape fabric as well as impacts on views, with views from the Todmorden Edge area, Sharneyford, Gorpley reservoir and Freeholds Top being particularly affected during the construction period.

Much of the access infrastructure, including around half of the proposed access track, would be shared with Reaps Moss, and has already been consented as part of that development. The proposed site access points from the A681 would be widely visible and would affect the character of that part of the moor, which still retains traditional landscape features, including the Limers Gate path and a number stone walls and ditches. The associated straightening, widening and earthworks would have landscape character and visual significant impacts, as would the location of the access track which run parallel to and between the Rossendale Way and the Todmorden Centenary Way.

The additional access tracks proposed as part of this development would probably not be widely visible from below, but would be very noticeable from the two walking routes above the development site, especially since, at 5m wide, they would be wider than any of the existing tracks on this ridge top and would require cut and fill in at least some areas.

The substation (switchgear/control building) is not expected to be widely visible as it would be located in a slight dip in the landscape. However the permanent meteorological mast would be open to view over a considerable area. The structure would appear intrusive and

¹³ See Table 7, p 21 of the *Landscape Capacity Study*.

industrial in character because of its relatively 'heavy' latticework construction. A simple guyed structure would be much less intrusive. The proposed 2.8-3m high palisade fencing around both the substation and the meteorological mast would also be intrusive at a local level on the moorland top.

The proposed turbine transformers appear to be separate from the turbine towers and it should be noted that they would give rise to additional visual impact. The siting of transformers within the base of the turbine towers would result in a simpler, less cluttered wind farm appearance that would be beneficial in this skyline location.

5 CONCLUSIONS ON LANDSCAPE AND VISUAL IMPACTS

In conclusion, the Gorpley wind farm, despite its relatively small size and location close to other consented wind farms, would have significant, adverse landscape, visual and cumulative impacts.

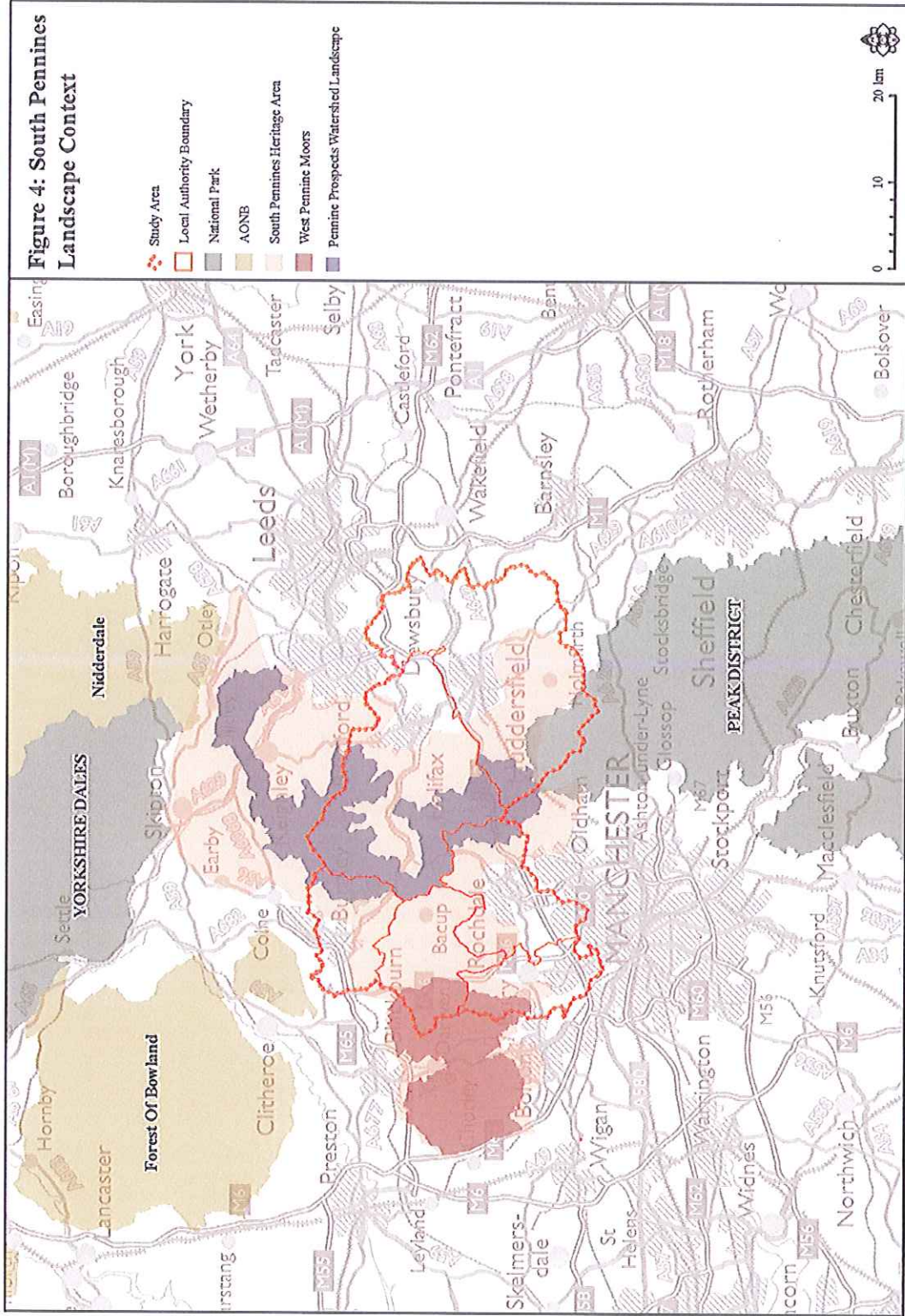
It would be located in an area that has been identified in *Landscape Capacity Study for Wind Energy Developments in the South Pennines* as having little or no capacity for further wind energy development. The 'fit' with local landscape character is considered moderate to poor. The development would be located on a very sensitive, narrow section of a key ridgeline that connects the northern and southern parts of the *High Moorland Plateaux* landscape character type. It would adversely affect the landscape quality and integrity of the South Pennines Heritage Area and the Watershed Landscape as well as the Calderdale Special Landscape Area. There would also be significant visual impacts, particularly affecting sensitive views from Todmorden and the Calder valley and from that part of the South Pennine Moors north of the Calder valley and the Cliviger gorge. The cumulative impacts would be to noticeably 'tip the balance' towards the creation of a wind farm landscape along the Crook Hill to Heald Moor ridgeline; and to link consented sites in such a way as to form a 7km long line of turbines that would appear almost unbroken from many viewpoints.

If planning consent should be granted for the Gorpley wind farm, the consent should be subject to conditions aimed at reducing the wind farm's landscape and visual impacts. These should include:

- Removal or re-siting of turbines 4 and 5, which are especially prominent in a number of views due to their relatively high elevation;
- Use of turbines of similar height and design to other wind farms along the Crook Hill to Heald Moor ridge (to minimise any obvious visual inconsistency);
- Reinstatement of traditional landscape features such as stone walls within and adjacent to the site boundaries;
- Careful choice of track surfacing materials to match the dark colour of existing on-site tracks and hence reduce visual intrusion;
- Substation building to be single storey with a pitched roof and finished in local stone;
- Detailed design of substation and any permanent fencing or other enclosure to be subject to separate approval;
- Use of a simple guyed rather than a latticework meteorological mast if possible;
- Inclusion of transformers in the turbine towers if possible.

Annex 1: Landscape designations around Gorphey (excluding SLA)

Extract from Julie Martin Associates (2010) *Landscape Capacity Study for Wind Energy Developments in the South Pennines*.



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