

ELECTRICITY ACT 1989 (SECTION 36 AND SCHEDULE 8)
TOWN AND COUNTRY PLANNING ACT 1990 (SECTION 90)
THE ELECTRICITY GENERATING STATIONS AND OVERHEAD LINES (INQUIRIES PROCEDURE)
(ENGLAND AND WALES) RULES 2007

PUBLIC INQUIRY TO CONSIDER SECTION 36 ELECTRICITY ACT 1989 APPLICATION BY STEADINGS
WIND FARM LIMITED FOR CONSENT AND DEEMED PLANNING PERMISSION TO CONSTRUCT AND
OPERATE A WIND FARM AT KIRKWHELPINGTON, NORTHUMBERLAND (KNOWN AS STEADINGS)

PROOF OF EVIDENCE OF
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CUMULATIVE LANDSCAPE AND VISUAL EFFECTS
ON BEHALF OF STEADINGS WIND FARM LIMITED

BERR REFERENCE: GDBC/001/00278C

TYNEDALE COUNCIL REFERENCE: 20060540

NORTHUMBERLAND COUNCIL REFERENCE: 06/00023/CPC

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This document has been prepared and checked in accordance with BS EN ISO 9001 : 2000

1.0 Introduction

1.1 Introduction

- 1.1.1 My name is Colin Goodrum. I am a landscape architect and I have a Bachelor of Science Honours Degree in Physical Geography with Agriculture and a Diploma in Landscape Architecture. I was elected as a Member of the Landscape Institute in 1984.
- 1.1.2 I am instructed by Banks Ltd and my main proof sets out details of my experience, and the background, brief and objectives of my evidence for the Inquiry on behalf of SWFL. This proof of evidence concerns cumulative landscape and visual effects and their assessment (CLVIA).
- 1.1.3 As indicated as likely in my main proof (para 2.1.6), a common set of graphics between SWFL, Amec and Wind Prospects has now been produced and submitted to the Inquiry at the same time as this proof of evidence. My evidence relates to that material, as well as my main proof and appendices.
- 1.1.4 Section 8 of my main proof of evidence introduces the topic of cumulative effects and given that it has now been possible to progress with the supporting graphics, I am able to provide my evidence on the matter. My evidence comprises this proof, along with various appendices which are bound separately for ease of cross reference (SWFL3.6). My appendices to this proof are numbered in sequence to that of my main proof i.e. Appendices 6.1-6.5.

2.0 Background

2.1 Introduction

- 2.1.1 Paragraph 2.1.6 of my main proof refers to a well progressed draft Statement of Common Ground (SoCG) concerning CLVIA which was lodged with the Programme Officer on 16 November 2007. This draft was in fact the fourth draft. Subsequent to this the Council indicated their view was that the CLVIA should include all schemes at scoping stage or beyond which fell within the study area. I wrote to the Council (copied to Dr Wimble) on the 28th November 2007 and subsequent to this the Director of Planning provided me with a table setting out wind farm proposals in Northumberland, as at that date, prepared by Northumberland County Council. I further responded to this in a letter to the Director of Planning, again copied to Dr Wimble dated 5 December setting out my position on this matter, to which I received a response from the Director of Planning on 11 December 2007 (by email), albeit the letter is dated 12 December. Separately on 11 December I received further comments on the Statement of Common Ground, sixth draft which I had previously provided to the Council with my letter of the 5th, in response to the request to widen the scope of the assessment. I include this correspondence as my Appendix 6.1 to this proof of evidence.
- 2.1.2 At the time of writing, I anticipate the SoCG will be agreed shortly on the basis that the current draft reflects both the agreed position on a number of matters, as well as recording those matters where there is disagreement between the appellant/application parties and Dr Guy Wimble. These matters mainly relate to the scope of the assessment in terms of the schemes to be assessed, as referred to above, as well as the baseline landscape situation as documented in the various studies referred to in my main evidence. That evidence sets out the reason why I consider the appropriate baseline to be the University of Newcastle Study (CD 143) rather than the Knowsegate study (CD 103) and the Tynedale Landscape Character Assessment (2007), both of which remain independent specialist reports.
- 2.1.3 The points I have already made in my main proof remain relevant to the CLVIA. My cumulative evidence should thus be read in conjunction with that earlier, main proof.

2.2 Methodology and Scope

- 2.2.1 The CLVIA SoCG confirms that Kirkheaton Wind Farm is included in the baseline study. The assessment is on the basis that only Green Rigg, Steadings and Ray Fell schemes are considered (as none of the previous studies indicated significant effects from other relevant schemes). Thus the following development scenarios are considered, albeit I provide evidence only on scenarios A, C and D:

- A Kirkheaton plus Steadings and Ray
- B Kirkheaton plus Ray Fell and Green Rigg

- C Kirkheaton plus Steadings and Green Rigg
- D Kirkheaton plus Steadings, Green Rigg and Ray

- 2.2.2 Subject to the Council providing the information, I reserve the right to supplement this assessment with a consideration of the potential effect of various other schemes; I should stress that, if I do so, it will be without prejudice to the correctness of my existing view as to what schemes it is appropriate to assess. My existing view and approach reflect good practice and guidance, all as set out in my letters to the Council.
- 2.2.3 Only the cumulative effects of the proposed turbines are considered, as other aspects of the schemes will not give rise to significant cumulative effects
- 2.2.4 Assessment methodology is in accordance with the 'Guidelines for Landscape and Visual Impact Assessment, Second Edition' (Landscape Institute and IEMA, 2002) [CD140], and takes account of the Scottish Natural Heritage guidance 'Cumulative Effect of Windfarms' Appendix 5, (version 2, April 2005) [CD146]. Further detail of the methodology and terminology agreed is included in the SoCG CLVIA. The agreed study area is 30km from each site for ZTVs and 15km for landscape effects.
- 2.2.5 The landscape character baseline is based on the Countryside Character Map of England, Volume 1: North East (1999) (relevant extracts in appendix 1.1) and the regional landscape assessment ('Landscape Appraisal for Onshore Wind Development', University of Newcastle, July 2003), [CD143]). Relevant landscape designations to be considered are Northumberland National Park and North Pennines AONB.
- 2.2.6 11 viewpoints have been agreed representing the main potentially sensitive visual receptors as follows:
- A. Kirkwhelpington
 - B. Trig. Point north of Great Bavington
 - C. Great Wanney
 - D. Throckington Church
 - E. Hadrian's Wall
 - F. Pennine Way south of Bellingham
 - G. Knowesgate
 - H. A68 near Beukley
 - I. A68 near Carrycoats Hall
 - J. Corsenside Common
 - K. Kirkharle

ZTVs and Visualisations

- 2.2.7 ZTVs have been prepared by Phil Marsh (an independent GIS, visualisation and spatial analyst) on behalf of all 3 developers. For each of the 4 identified development scenarios,
- 2587/Proof

both hub and blade tip ZTVs have been prepared. For each viewpoint, wireframes and photomontages have been prepared by Stephenson Halliday on behalf of all 3 developers. The Developer's schemes are indicated in Blue (Steadings), Green (Green Rigg) and Brown (Ray Fell), with Kirkheaton in Black. Both the ZTVs and visualisations comply with one of the recommended formats in the SNH 'Visual Representation of Windfarms: Good Practice' Guidance [CD133].

Other visual receptors

- 2.2.8 The A68 and A696 are assessed for sequential effects. Long distance footpaths are considered as receptors as sequential effects are less pronounced for these routes due to the slower speed of travel and greater distance from the schemes. There has been discussion with regard to the Jacobite Trail being included. It is a series of points and places of historical interest, rather than a specific trail or route, linking these points and is thus excluded. The visual effects on local settlements are also assessed.

2.3 Baseline assessment

- 2.3.1 The baseline landscape character assessment is included in appendix 2.2 to my main evidence. Baseline descriptions and sensitivity assessments for each viewpoint are included in appendix 1 of this proof.

2.4 The Proposals

- 2.4.1 My main proof describes the proposed SWFL scheme. With regard to grid connections, I have been advised that the grid connection for a Steadings-only scenario would be via 66 KV lines supported by 16m high wooden trident poles, typically spaced 100m apart, as illustrated within the SEI (CD4). In the cumulative scenario, in order to minimise the visual effects, it makes sense to combine grid connections in the event of two or more schemes being developed. I have thus been advised that for a two site scenario, 132 KV lines could again be supported on wooden 16m high trident poles, spaced 100m apart. Alternatively a double pole arrangement could be used with similar heights and spacing. This may be particularly applicable in steeper terrain. Should all three sites be approved and developed, the preferred solution would be to run 132 KV lines on two wooden pole lines, and I understand the spacing of the lines is likely to be 1.5 times the height, i.e. 24m apart.
- 2.4.2 With regard to the point of connection to the grid I have assumed that for a Steadings alone solution then the connection would be to either the Cramblington or Bedlington locations. In the two or three scenario scheme, the assumption is that the connection(s) will be to the Stella North/Bedlington location. I refer to the landscape and visual effects of the grid connection options for the SWFL scheme. Similarly no significant cumulative landscape and visual effects will arise from the cumulative scenario grid connection options.

3.0 Assessment of Effects

3.1 Landscape effects

- 3.1.1 My analysis of the ZTV studies, included in the joint graphics bundle, and my site-based assessment indicates that the effects on National and Local Character Areas, will be, in my view, as described in my appendix 2 to this proof and summarised below.

National Character Areas - Countryside Character Map of England (1999) – Volume 1: North East [Appendix 1.2 main proof]

- 3.1.2 No national character areas will experience significant effects. The character area which will be most affected is Northumberland Sandstone Hills (Area No. 2) which will experience Moderate to Slight effects in scenarios A and D. These would arise from direct effects on character in the vicinity of the wind farms, and views of the turbines from areas south of Harwood Forest, particularly arising from the Ray scheme which has a greater effect on this character area than the other two schemes (thus the effects are Slight in scenario C). The Tyne Gap and Hadrian's Wall and Mid Northumberland character areas will experience Slight effects in all scenarios.

Regional Character Areas - North East Regional Renewable Energy Strategy [CD142]

- 3.1.3 Only the two character areas which contain the wind farms will experience significant (Moderate or greater) effects. The area of the Upland Fringe Farming character type, which includes almost all of the Steadings site and some of the Green Rigg site and is identified as being of Low-Medium sensitivity would experience Moderate effects in all scenarios. These effects would primarily arise from direct effects on character in the vicinity of the windfarms particularly arising from the Steadings and Green Rigg schemes. The area affected by the Ray scheme would tend to coincide with that directly affected by Steadings. Most of the character area would also have visibility of the schemes.
- 3.1.4 The area of the Outcrop Hills and escarpment character type, which includes the Ray site, most of Green Rigg and a small part of the Steadings site would also experience Moderate effects in scenarios A and D, primarily arising from the influence of the Ray scheme which would occupy a significant part of the southern extent of the character area (thus the effects are Slight in scenario C). Visibility of the schemes would reduce sharply north of the Harwood Forest, leaving the remainder of the character area(s), unaffected.
- 3.1.5 The Parallel Ridges and Outcrops, River Valley with Settlements and Rolling Lowland Farmland character areas would experience Slight effects in all scenarios, in each case arising from views of the turbines.

3.2 Effects on Landscape Designations

Northumberland National Park

- 3.2.1 As described in section 4.5 of my main proof, the special qualities of the Northumberland National Park which form the basis of the designation in respect of landscape matters are the sense of tranquillity and character of the National Park.
- 3.2.2 There is a clear distinction in character between the National Park and the sites which are separated by a distance of 5-15km and the intervening valley landscape. Effects on the landscape character of the National Park arising from the development would be Negligible, except for very minor effects (Slight to No Change significance) along the eastern edges of the designated area.
- 3.2.3 The ZTV studies indicate that visibility of the turbines from within the National Park would be limited, most of the areas indicated to have visibility lie within forested areas, from which outwards views would, in practice, not exist. There is a broad corridor of visibility along the A68 to the northeast of the sites from which the Ray scheme in particular would be visible, with Green Rigg and Steadings also visible from some locations in this area. The primary area in which turbines would be clearly visible would be in the area of Corsenside Common viewpoint J), Hareshaw Common and Troughend Common. The only other areas that may experience significant views of the site are at Simonside, Ealingham Rigg (viewpoint F) and Simonburn Common, Haughton Common and the nearby length of Hadrian's Wall (viewpoint E). For each of the assessed viewpoints, effects would be of no more than Low magnitude for most scenarios, the exception being views from Corsenside Common for scenarios A and D (which include Ray) which would be of Medium to Low magnitude. The grid connections for the proposals would not be visible from the National Park.
- 3.2.4 Effects on Rights of Way within the National Park are assessed as being of Slight to No Change significance. Steadings wind farm would not contribute to these effects, given the distance and general lack of intervisibility (see section 7.5 of my main proof of evidence).
- 3.2.5 The Steadings proposals would not be visible from any of the "gateway settlements" (Otterburn, West Woodburn and Bellingham) identified within the Statement of Case for the National Park Authority. Both Green Rigg and Ray would be visible from Otterburn and areas to the west of West Woodburn. Ray would be visible from West Woodburn and Green Rigg from Bellingham. However, each of these 'gateways' is on the same side of the park as the wind farms, so the views from the settlements looking into the Park would be unaffected. The effects views from these settlements are likely to be of Medium to Low magnitude at most (at West Woodburn which is closest) and views of

turbines would only tend to occur on the eastern edges of the settlements looking away from the National Park.

- 3.2.6 Due to the intervening distance between the sites and the National Park, and the infrequency of views of the wind farms from locations within the National Park, most of the views of the wind farms in which they have any noticeable presence tend to be views in which one is looking out of the National Park, rather than across it. In some of these nearer views, Kirkheaton wind farm is already visible. In no views will it be the case that the wind farms will be perceived as being within the National Park. It is therefore unlikely that the distant visibility of the turbines (the blade movement will not be ‘eyecatching’ over this distance) will affect any perception of tranquillity within the National Park.
- 3.2.7 When one reviews the different scenarios, Steadings contributes little to the effects; areas to the west of the sites tend to be more affected in scenarios C and D which include Green Rigg, whereas areas to the northwest tend to be more affected in scenarios A and D, which include Ray. In no scenario are significant (Moderate or Greater) effects identified on the National Park, or receptors within the National Park.

North Pennines AONB

- 3.2.8 The North Pennines AONB, at 18km distant from the nearest site (Steadings) will not experience effects on its landscape character and any visibility of the turbines will be of Negligible significance. Effects on the AONB are therefore judged to be Negligible.

3.3 Visual effects

- 3.3.1 For the 11 viewpoints, effects are assessed in detail in my Appendix 3 as follows:

	SCENARIO A - Kirkheaton, Steadings and Ray	SCENARIO C – Kirkheaton, Steadings and Green Rigg	SCENARIO D – Kirkheaton, Steadings, Green Rigg and Ray
Substantial	B, C	B, C, D	B, C, D
Substantial / Moderate	D, G		G
Moderate	A, I, K	A, G, I	A, I, K
Moderate / Slight		K	
Slight	E, H, J	E, F, H, J	E, F, H, J
Slight / No Change	F		
No Change			

- 3.3.2 Effects are assessed to be Adverse in nature, primarily due to scale contrasts between the turbines and existing elements in the view, except for viewpoints F (Pennine Way

south of Bellingham) and H (A68 at Beukley) which are assessed as being subject to Neutral effects in all scenarios, and viewpoint I which is assessed as receiving Neutral effects in scenarios C and D, and Positive effects in scenario A.

- 3.3.3 In general, the different scenarios do not cause significant variation in effects. Viewpoints A, B, C, E, H and J receive effects of the same significance and nature in each scenario. This is generally either because the main effects arise from the presence of Steadings which is included in all three scenarios (e.g. viewpoint B from near Great Bavington), or because the viewpoint is sufficiently distant from the wind farms that the variations in numbers and distribution of turbines does not noticeably alter effects (e.g. viewpoint E from Hadrian's Wall).
- 3.3.4 For those viewpoints which do differ, viewpoint I (A68 near Carrycoats Hall) receives effects of the same significance in each scenario, but effects are judged to be Positive in scenario A and Neutral in scenarios C and D. In the scenario which does not include Green Rigg, the turbines are seen on the horizon in two separate groups (with Kirkheaton as a third group) and add interest to what is otherwise a bland view. The addition of Green Rigg (which is closer than the other two), begins to bring a feeling of 'clutter' to the view.
- 3.3.5 Viewpoints F (Pennine Way, South of Bellingham) and D (Thockrington Church) receive effects of lower significance in scenario A, which excludes Green Rigg. In the case of viewpoint F, this is because Green Rigg is significantly closer to and more visible from the viewpoint than the other schemes (Steadings is barely visible). In the case of viewpoint D, this is because the Green Rigg turbines significantly extend the arc of view occupied by turbines.
- 3.3.6 Viewpoints G (Knowesgate) and D (Kirkharle) receive effects of lower significance in scenario C, which excludes Ray. For both viewpoints, this is because the Ray turbines considerably extend the arc of view occupied by turbines.

3.4 Sequential Effects

Roads

- 3.4.1 The A68 and the A696 are the two major routes that travel north south through Northumberland. These are the roads that would be most frequently used by visitors. As detailed in the Regulation 13 submission for Steadings [CD3], the comparative inter-visibility of the three wind farm schemes from the A68 was investigated by dividing the road into 5X5m grids along its length within the 30km radius of Steadings, and testing for visibility of the schemes again using the bare ground ZTVs for the blade tips.

A68

- 3.4.2 Steadings would be potentially visible from 48% (26.4km, or a total of 20 minutes at 80kph) of the route, Green Rigg for 45% (25km, or a total of 19 minutes at 80kph) and Ray Fell for 61% (34km, or a total of 26 minutes at 80kph) within the 30km study area. The Green Rigg site is immediately adjacent, east of the A68, and the Ray and Steadings schemes are both around 5km east of the road. There is little vegetation or development along the route, so visibility will generally be similar to that indicated by the ZTV studies.
- 3.4.3 The Ray Fell scheme would be the most frequently visible from the A68, particularly when approaching from the North within the National Park where the Scheme would potentially be seen in front of the driver for almost all of the route north of Chesterhope Common as it approaches the sites. The Green Rigg and Steadings schemes would be visible from high points on the road north of West Woodburn, with Steadings not being visible south of West Woodburn (approx 8km from the site) until adjacent to the Green Rigg site. The Green Rigg site is immediately adjacent to the A68 and would be seen at close quarters between Chesterhope Common and Carrycoats Hall.
- 3.4.4 Approaching from the south, the first views of the schemes would be of all three proposals (and Kirkheaton) at Hadrian's Wall and Beukley. The pattern of views of all the schemes from high points on the road, with Ray and Steadings generally in front and to the right, and Green Rigg more directly in front, would continue as the driver approached the sites, with Steadings being visible slightly more often than the other two. Views would become near continuous as the road approaches the Green Rigg site, north of Little Swinburne reservoir.

A696

- 3.4.5 Steadings would be potentially visible from 48% (26.4km, or a total of 20 minutes at 80kph) of the route, Green Rigg for 42% (20.2km, or a total of 15 minutes at 80kph) and Ray Fell for 73% (34.7km, or a total of 26 minutes at 80kph) within the 30km study area. The Ray Fell scheme would be the both the closest to the road and the most frequently visible from the A696 being at its closest 0.75km to the west. The Steadings scheme is more distant at 2.3km west of the road, and the Green Rigg scheme more distant still, at 6.7km west. There is minimal vegetation along the route to the north of Kirkwhelpington, whilst south of the village, roadside vegetation is more frequent.
- 3.4.6 For drivers approaching from the north, the first views would be of all 3 schemes at distances of 12-15km from north of Otterburn. In the vicinity of Otterburn, the Green Rigg scheme would be generally visible, with some views of Ray. There would be a 4km 'gap' in visibility of turbines around Raylees with views of all three schemes returning as the driver approaches the transmitter masts near Ottercops Moss. Views of all three

schemes and Kirkheaton would then steadily increase in frequency and proximity until the driver passed beyond the Ray turbines at Kirkwhelpington and beyond the Steadings site near Kirkharle. In the stretch of road between Ottercops Moss and Kirkharle, Ray would be both the closest and the most frequently visible, with Steadings less so (though having more impact between Kirkwhelpington and Kirkharle for southward bound drivers), whilst Green Rigg would add little to the effects.

- 3.4.7 For drivers approaching from the south, roadside vegetation will tend to reduce visibility from that indicated by the ZTV studies, with significant views being unlikely from areas south of Belsay. Between Belsay and Kirkwhelpington, there would be variable views of between 1 and 4 of the wind farm schemes along much of the route, but no continuous open views of all three proposed schemes. South of Kirkwhelpington, Steadings is likely to be the most prominent, though it would rarely be visible without Ray. Between Kirkwhelpington and Ottercops, the Ray scheme would be the only scheme visible in front of the driver and would be seen at close quarters. Green Rigg would add little to the effects for any part of the route.

Summary

- 3.4.8 The varying scenarios do not therefore make a significant difference to the views of drivers approaching from the South on the A68. For drivers approaching from the North, scenario C (omitting Ray) would result in considerably less frequent views of turbines north of Chesterhope Common and scenario A (omitting Green Rigg) would result in significantly reduced effects between Chesterhope Common and Carrycoats Hall from where the Green Rigg scheme would be visible at close quarters.
- 3.4.9 Scenario A (omitting Green Rigg) only makes a difference to effects on the A696 for drivers heading south near Otterburn (about 10km from the Green Rigg site). Scenario C (omitting Ray) would make a significant difference to effects between Ottercops Moss and Kirkwhelpington where the Ray scheme would be visible at close quarters.

Footpaths and Cycle Routes

- 3.4.10 In line with the approach taken by Inspectors at previous Inquiries, long distance footpaths are assessed as High to Medium sensitivity receptors. This is due to the fact that although they are used by people who will generally be walking and appreciating the views, long distance routes tend to pass through a wide variety of landscapes, including those near to urban and industrial areas. Long distance cycle routes are rated as Medium sensitivity as cyclists are less sensitive to views and similar considerations regarding long distance routes apply.

ASSESSMENT OF EFFECTS

ROUTE	CLOSEST APPROACH TO SITES	SCENARIO A - Kirkheaton, Steadings and Ray	SCENARIO C – Kirkheaton, Steadings and Green Rigg	SCENARIO D – Kirkheaton, Steadings, Green Rigg and Ray	COMMENT
Pennine Way	Steadings - 11km Green Rigg – 6.5km Ray – 10km	No Change overall, Slight / No Change and Neutral at most, near Bellingham.	Slight to No Change and Neutral overall, Moderate/Slight and Neutral at most, near Bellingham.	Slight to No Change and Neutral overall, Moderate/Slight and Neutral at most, near Bellingham.	North of Bellingham there are very few views of the schemes from this route, with Padon Hill being the only location which is likely to receive clear views, but these would be at distances of 14km or more. In the Bellingham area there will be views of the Green Rigg and Ray schemes. These are likely to be of Medium or Medium-Low magnitude for scenarios C and D which include the Green Rigg scheme and Low to Negligible for scenario A. South of Bellingham, there will be intermittent views of all three schemes, though these will diminish in the Haughton common area where the route passes through forest.
Hadrians Wall Path	Steadings - 10km Green Rigg – 10.5km Ray -13.5km	Slight/No Change	Slight/No Change	Slight/No Change	Visual effects are Low to Negligible magnitude at most, and Negligible for most of the route.
St Oswald's Way	Steadings - 1km Green Rigg – 5.5km Ray -3km	Moderate / Slight and Neutral overall, Substantial and Neutral from some viewpoints in the Catcherside to B6342 stretch.	Slight and Neutral overall, Substantial and Neutral from some viewpoints in the Kirkwhelpington to B6342 stretch.	Moderate / Slight and Neutral overall, Substantial and Neutral from some viewpoints in the Catcherside to B6342 stretch.	As with all long distance routes, St Oswald's Way passes through a variety of landscapes, including passing within 2km of Kirkheaton wind farm. Effects will be of High magnitude from some viewpoints in the immediate vicinity of the Steadings and Ray sites, decreasing with distance.
Hadrian's Cycleway (National Route 72)	Steadings - 12km Green Rigg – 12km	No Change	No Change	No Change	ZTV studies indicate that there will be very little visibility of the turbines.

ASSESSMENT OF EFFECTS

ROUTE	CLOSEST APPROACH TO SITES	SCENARIO A - Kirkheaton, Steadings and Ray	SCENARIO C – Kirkheaton, Steadings and Green Rigg	SCENARIO D – Kirkheaton, Steadings, Green Rigg and Ray	COMMENT
	Ray -15km				
Pennine Cycleway (National Route 68)	Steadings - 7km Green Rigg – 4km Ray -4km	Slight and Neutral overall, Moderate / Slight and Neutral from some viewpoints in the Catcherside to B6342 stretch.	Slight and Neutral overall, Moderate / Slight and Neutral from some viewpoints in the Catcherside to B6342 stretch.	Slight and Neutral overall, Moderate / Slight and Neutral from some viewpoints in the Catcherside to B6342 stretch.	ZTV studies indicate that there will be little or no visibility of the Steadings proposal from this route as it passes through areas within 15km of the turbines. The Green Rigg and Ray proposals will be visible for much of the route between Otterburn Camp and Bellingham (the route is generally not within the National Park through this stretch) and would generally be of Medium magnitude. Views of turbines would decrease south of Bellingham as the route passes inot forested areas.
Reivers Regional Cycle Route	Steadings - 1km Green Rigg – 1.5km Ray – 4km	Moderate / Slight and Neutral overall, Substantial and Neutral from some viewpoints in the Thockrington to B6342 stretch.	Slight and Neutral overall, Substantial and Neutral from some viewpoints in the A68 to B6342 stretch.	Moderate / Slight and Neutral overall, Substantial and Neutral from some viewpoints in the A68 to B6342 stretch.	As with all long distance routes, the Reiver’s route passes through a variety of landscapes, including passing within 2km of Kirkheaton wind farm. Effects will be of High magnitude from some viewpoints in the immediate vicinity of the Steadings and Green Rigg sites, decreasing with distance.

3.4.11 Settlements

3.4.12 As I am not assessing scenario B within my evidence, I have only included settlements that I have identified as experiencing effects from the Steadings proposal in my assessment. In each of the scenarios assessed, the Green Rigg and Ray proposals are likely to have effects on settlements to the North and West of the sites, but these will not be contributed to by the Steadings turbines.

SETTLEMENT	DISTANCE FROM NEAREST TURBINE	SCENARIO A - Kirkheaton, Steadings and Ray	SCENARIO C – Kirkheaton, Steadings and Green Rigg	SCENARIO D – Kirkheaton, Steadings, Green Rigg and Ray	COMMENT
Knowesgate	Steadings - 3.1km Green Rigg – 6.7km Ray – 2.8km	Substantial / Moderate	Moderate	Substantial / Moderate	Open views towards the sites from the main crossroads.
Kirkwhelpington	Steadings - 2.5km Green Rigg – 3.8km Ray – 3.8km	Slight	Slight	Slight	Main body of village is screened by vegetation. Views mainly from roads approaching the village from the A696.
Capheaton	Steadings - 5.7km Green Rigg – 10km Ray – 9km	Slight	Slight	Slight	Vegetation will screen almost all views of the turbines, Green Rigg and Ray will not noticeably contribute to the effects.
Kirkheaton	Steadings - 5.2km Green Rigg – 9.5km Ray – 9km	Slight	Slight	Slight	The existing wind farm nearby will be a more dominant factor, Green Rigg and Ray will not noticeably contribute to the effects.
Thockrington	Steadings - 1.3km Green Rigg – 3.8km Ray – 4.6km	Substantial / Moderate	Substantial / Moderate	Substantial / Moderate	Turbines would sometimes be screened by buildings on the north side of the road through the village *(particularly the two more distant schemes), but the Steadings turbines will be generally visible nearby.

ASSESSMENT OF EFFECTS

SETTLEMENT	DISTANCE FROM NEAREST TURBINE	SCENARIO A - Kirkheaton, Steadings and Ray	SCENARIO C – Kirkheaton, Steadings and Green Rigg	SCENARIO D – Kirkheaton, Steadings, Green Rigg and Ray	COMMENT
Great Bavington	Steadings - 0.8km Green Rigg – 5.5km Ray – 4.5km	Substantial / Moderate	Substantial / Moderate	Substantial / Moderate	Turbines will not be visible from the historic core of the village but the Steadings turbines will be visible nearby from the roads through the village and the northern and western edges. The Green Rigg and Ray proposals will be hidden behind the high ground that surrounds the village to the north and west.

3.5 Summary table (as per CLVIA SoCG)

	LEVEL OF EFFECT AND SIGNIFICANCE				
	APPLICANTS SITE - STEADINGS	SCENARIO A: RAY + STEADINGS*	SCENARIO B: RAY + GREEN RIGG*	SCENARIO C: STEADINGS + GREEN RIGG*	SCENARIO D: RAY + STEADINGS + GREEN RIGG*
LANDSCAPE RECEPTORS					
Northumberland Sandstone Hills (No. 2)	Slight	Moderate / Slight	Not assessed	Slight	Moderate / Slight
Mid Northumberland (No. 12)	Slight	Slight	Not assessed	Slight	Slight
Border Moors and Forests (No. 5)	No Change	No Change	Not assessed	No Change	No Change
Hadrian's Wall (No. 11)	Slight	Slight	Not assessed	Slight	Slight
Upland Fringe Farming (including Steadings site area and part of Green Rigg)	Moderate	Moderate	Not assessed	Moderate	Moderate
Upland Fringe farming (other 3 areas to south of and west of site.)	Negligible	No Change	Not assessed	No Change	No Change
Rolling Uplands	Negligible	Slight / No Change	Not assessed	No Change	Slight / No Change
Upland Forest and Moorland	Negligible	No Change	Not assessed	No Change	No Change
Parallel Ridges and Outcrops	Slight	Slight	Not assessed	Slight	Slight
Outcrop Hills and escarpment (includes Ray and Green Rigg sites and small part of Steadings)	Slight	Moderate	Not assessed	Slight	Moderate

	LEVEL OF EFFECT AND SIGNIFICANCE				
	APPLICANTS SITE - STEADINGS	SCENARIO A: RAY + STEADINGS*	SCENARIO B: RAY + GREEN RIGG*	SCENARIO C: STEADINGS + GREEN RIGG*	SCENARIO D: RAY + STEADINGS + GREEN RIGG*
River Valley with Settlements	No Change	Slight	Not assessed	Slight	Slight
Open Upland Valley	No Change	Slight / No Change	Not assessed	Slight / No Change	Slight / No Change
Rolling Lowland farmland	Slight	Slight	Not assessed	Slight	Slight
Northumberland National Park	No Change	Slight / No Change	Not assessed	Slight / No Change	Slight / No Change
North Pennines AONB	No Change	No Change	Not assessed	No Change	No Change
VIEWPOINT ANALYSIS					
Viewpoint A, Kirkwhelpington	Moderate, Adverse	Moderate, Adverse	Not assessed	Moderate, Adverse	Moderate, Adverse
Viewpoint B, trig point north of Great Bavington	Substantial, Adverse	Substantial, Adverse	Not assessed	Substantial, Adverse	Substantial, Adverse
Viewpoint C, Great Wanney	Moderate, Neutral	Substantial, Adverse	Not assessed	Substantial, Adverse	Substantial, Adverse
Viewpoint D, Thockrington	Substantial/ Moderate, Adverse	Substantial/ Moderate, Adverse	Not assessed	Substantial, Adverse	Substantial Adverse
Viewpoint E, Hadrian's Wall	Slight, Adverse	Slight, Adverse	Not assessed	Slight, Adverse	Slight, Adverse
Viewpoint F, Pennine Way south of Bellingham	No Change	Slight / No Change, Neutral	Not assessed	Slight, Neutral	Slight, Neutral
Viewpoint G, Knowesgate	Moderate, Adverse	Substantial / Moderate, Adverse	Not assessed	Moderate, Adverse	Substantial / Moderate, Adverse
Viewpoint H, A68 at Beukley	Slight, Neutral	Slight, Neutral	Not assessed	Slight, Neutral	Slight, Neutral

	LEVEL OF EFFECT AND SIGNIFICANCE				
	APPLICANTS SITE - STEADINGS	SCENARIO A: RAY + STEADINGS*	SCENARIO B: RAY + GREEN RIGG*	SCENARIO C: STEADINGS + GREEN RIGG*	SCENARIO D: RAY + STEADINGS + GREEN RIGG*
Viewpoint I, A68 near Carrycoats Hall	Moderate, Positive	Moderate, Positive	Not assessed	Moderate, Neutral	Moderate, Neutral
Viewpoint J, Corsenside Common	Slight / No Change, Adverse	Slight, Adverse	Not assessed	Slight, Adverse	Slight, Adverse
Viewpoint K, Kirkharle	Moderate / Slight, Adverse	Moderate, Adverse	Not assessed	Moderate / Slight, Adverse	Moderate, Adverse
RECEPTOR GROUPS: RESIDENTS IN SETTLEMENTS (OVERALL)					
Knowesgate	Moderate	Substantial / Moderate	Not assessed	Moderate	Substantial / Moderate
Kirkwhelpington	Slight	Slight	Not assessed	Slight	Slight
Capheaton	Slight	Slight	Not assessed	Slight	Slight
Kirkheaton	Slight	Slight	Not assessed	Slight	Slight
Thockrington	Substantial / Moderate	Substantial / Moderate	Not assessed	Substantial / Moderate	Substantial / Moderate
Great Bavington	Substantial / Moderate	Substantial / Moderate	Not assessed	Substantial / Moderate	Substantial / Moderate
RECEPTOR GROUPS: WALKERS / CYCLISTS (OVERALL)					
Pennine Way	No Change	No Change	Not assessed	Slight to No Change and Neutral	Slight to No Change and Neutral
Hadrians Wall Path	No Change	No Change	Not assessed	No Change	No Change
St Oswald's Way	Slight and Neutral	Moderate / Slight and Neutral	Not assessed	Slight and Neutral	Moderate / Slight and Neutral
Hadrian's Cycleway (National Route 72)	No Change	No Change	Not assessed	No Change	No Change

	LEVEL OF EFFECT AND SIGNIFICANCE				
	APPLICANTS SITE - STEADINGS	SCENARIO A: RAY + STEADINGS*	SCENARIO B: RAY + GREEN RIGG*	SCENARIO C: STEADINGS + GREEN RIGG*	SCENARIO D: RAY + STEADINGS + GREEN RIGG*
Pennine Cycleway (National Route 68)	No Change	Slight and Neutral.	Not assessed	Slight and Neutral	Slight and Neutral
Reivers Regional Cycle Route	Slight and Neutral	Moderate / Slight and Neutral	Not assessed	Slight and Neutral	Moderate / Slight and Neutral
RECEPTOR GROUPS: ROAD USERS (OVERALL)					
A68	Slight and Neutral	Slight and Neutral	Not assessed	Moderate and Neutral	Moderate and Neutral
A696	Slight and Neutral	Moderate / Slight and Neutral	Not assessed	Slight and Neutral	Moderate / Slight and Neutral

3.6 Summary

3.6.1 As can be seen from the preceding assessment, each of the individual proposals has differing effects on receptors, and each of the cumulative scenarios has advantages or disadvantages in terms of effects. The main receptors that would be additionally affected by the construction of more than one of the schemes, rather than just one scheme, would be those that are equidistant from two of the proposals – i.e. Knowesgate, Great Wanney, Thockrington, the Reivers Cycle Route; as well as the receptors that are only affected by one of the schemes, e.g. Great Bavington in the case of Steadings, Bellingham in the case of Green Rigg, and East Woodburn in the case of Ray. However, it is clear from my assessment that any increase in effects from the construction of more than one scheme tends to be minor, even if all three schemes were to be constructed.

3.7 Capacity

3.7.1 I review and comment on the capacity studies in section 5 of my main proof. In assessing landscape capacity, most studies work on the basis of capacity meaning how much wind farm development a landscape can accept without undergoing significant change in character. This fundamental (but often unstated) assumption affects the results of such studies as it tends to lead to each landscape character area within the study area being assigned a certain quantity of development. Such an approach would

mean that almost every character area would have some turbines, making them a common feature; not characteristic of any particular landscape.

- 3.7.2 An alternative approach would be to identify high capacity landscapes and examine what the effects of clustering wind farms into those areas would be. Whilst it may result in a higher degree of effect in the clustered areas, it would have the benefit of making turbines part of the characteristic of those landscapes. Clustering also has benefits in terms of reducing overall visual effects. In my experience cumulative studies tend to indicate that from most viewpoints, the effects of more than one wind farm are similar to that of the nearest wind farm, or only very slightly greater. The main exception to this is viewpoints that are in between and at similar distance to more than one wind farm, where the increase in arc of view occupied by turbines is a significant factor. By closely grouping wind farms, the incidence of 'in between' viewpoints is reduced and the total affected area would also be reduced compared to more separated development. Such an approach may also reduce pressure for the use of lower capacity landscapes, enabling better protection of landscape character on a regional basis.
- 3.7.3 Thus, while neither the regional capacity study [CD142] or Knowesgate Area capacity study [CD104] indicate that the area has the capacity to accept 60 turbines, these studies make an underlying assumption about what degree of change is 'acceptable' in order to come to their assessments. In the case of the Knowesgate area study, the study repeatedly indicates that only very minimal change is deemed to be acceptable. Whilst this may be a viable approach for highly valued, low capacity landscapes, it is questionable for an area which has been indicated as a regional resource for wind development where maximising, rather than minimising, utilisation would be a more appropriate aim.

4.0 Summary and Conclusion

- 4.1.1 In my opinion, if one of the schemes were to be constructed, the additional effects arising from constructing two or all of the schemes would not be significantly greater.