Cumulative Impact Assessment

For Two Additional Wind Turbines at Myreton, near Keith, Moray

Prepared by Seren Energy Ltd
On Behalf of Myreton Renewable Energy Ltd

August 2009

This document provides additional information for the proposed additional wind turbines at Myreton, ref: 09/00247/FUL, particularly with respect to the cumulative impact of a number of other wind turbines schemes in the area, both consented and proposed. The response of key consultees has also been summarised.



1. Introduction

This document has been prepared by Seren Energy and it is intended to provide a cumulative impact assessment of the area around the Myreton site taking into consideration the existing, approved and proposed wind turbines in the area. Evaluating the visual impact in this way will ensure that the combined effects of the existing and proposed wind farms in the area will not create a landscape which can not absorb the volume of turbines proposed and result in a local landscape that is overwhelmed by wind turbines.

2. Background

In January 2008, planning permission was granted to install a wind turbine at grid reference NJ 50118, 56999, Planning Ref: 07/01102/FUL. The model of turbine was an Enercon E44 wind turbine, with a 55m tower with a 44m rotor diameter. Following 6 months of wind monitoring, beginning in September 2008, it was recommended by the manufactures that the E48 wind turbine, on a 55m tower with a 48m rotor diameter would be more suitable due to the winds measured at the site being less turbulent than previously anticipated. A planning amendment was submitted and the amendment was granted in July 2009.

Most 800kW schemes connect into the 11kV network. Following detailed grid connection studies undertaken by the network operator for the single wind turbine scheme, it became apparent that the closest 11KV line was too weak to support the grid connection of the single wind turbine without extensive reinforcement. This led to another connection point being located, using the nearby 33kV line. Due to the higher voltages involved, and the additional distance to the 33kV lines, the costs for grid connection were found to be far more than was originally allocated, putting the entire project at risk.

An application for two further wind turbines was therefore submitted, allowing the otherwise prohibitively expensive cost of the grid connection to be split between three wind turbines.

3. Original Planning Document

The original planning document submitted in January 2009 to support this application included the consented wind turbine at Myreton and the single wind turbine at Balnamoon in the visual impact assessment, along side the proposed additional two wind turbines at Myreton. The Balnamoon wind turbine can be seen in photomontages V7 and V11 in the original planning document.

This document is intended to provide a cumulative impact assessment which includes the Aultmore wind farm, the Balnamoon wind turbine as well as the proposed Nethertown wind farm, which was submitted after the application for the additional two wind turbines at Myreton was submitted.

4. Feedback from Moray Council

Following several telephone conversations during which cumulative impact was discussed, Richard Smith of the Moray Council sent a letter formally requesting a cumulative impact assessment on the 13th July 2009. This letter also stated that Scottish National Heritage were keen to see further information included in the landscape and visual impact assessment, so the cumulative impact assessment could also tie in with a more detailed visual impact assessment.

Thirteen photomontages were submitted with the planning application in January 2009. Following discussions with Richard Smith, who suggested that the cumulative impact assessment should take into account the 'proposed development and surrounding turbines/schemes in the area', an additional ten locations were agreed upon. The relevant photomontages have been included in section 7.3 of this document.



5. Other Wind Projects in the Area

The other wind turbines/schemes that the cumulative impact assessment should take into account are listed below in order of completion:

- 1. Balnamoon Single Wind Turbine. 0.8MW. Ref: 04/02472/FUL. The Balnamoon wind turbine has been commissioned.
- 2. Myreton Single Wind Turbine. 0.8MW. Ref: 07/01102/FUL. The Myreton wind turbine is expected to be installed in March 2010.
- 3. Aultmore Wind Farm. 26MW. Ref: 07/02375/EIA. A planning application for 31 wind turbines was originally submitted in 2003. Following advice of landscape consultants this has now been reduced to a group of 13 turbines. The application is still pending consideration.
- 4. Nethertown of Windyhills Wind Farm. 2 Wind Turbines. 4.6MW. Ref: 09/00763/FUL. This application was submitted in April 2009 and is pending consideration.

It should be noted that the application for the Additional Myreton Wind Turbines was registered on the 16th February 2009, approximately 17 weeks before the application for the Nethertown of Windyhills was registered, which was on the 15th June 2009.



6. Consultee Responses

6.1 MOD

The MOD has responded to the proposal in a letter dated 30th June 2009 stating that, 'The MOD have no objection to the proposal'.

6.2 NATS

NATS have responded to the proposal in a letter dated 7th July 2009 stating 'The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria'.

6.3 Roads and Transport at Moray Council

The Transportation Manager within the Environmental Services Department at Moray Council has responded in a letter dated 27th February 2009 stating 'The application should be approved, subject to certain conditions'.

6.4 Scottish Environment Protection Agency (SEPA)

SEPA have commented upon several issues. These relate to information they require prior to the commencing of construction work, rather than information required as part of a planning application. The construction method statement and other details will be agreed with the LPA and SEPA prior to construction of the project. Some of the issues SEPA comments on are covered in a separate planning application for the access track for the consented wind turbine, Planning Ref: 09/00966/FUL, sent to the LPA in May 2009, and consented in July 2009.

6.5 Scottish Natural Heritage (SNH)

Scottish Natural Heritage have responded in a letter dated 14th April 2009 stating 'SNH considers that the natural heritage interests affected by this proposal are of lesser importance and has no objections'.

SNH mentions that a cumulative impact assessment has not been provided which would be of particular relevance 'given the proximity of the existing single turbine at Balnamoon and the proposed Aultmore wind farm'. They also suggest the provision of a Zone of Visual Influence (ZVI) map with an increased radius.

With regard to habitat and species SNH mention that 'the habitats on and surrounding the site provide limited shelter for a diversity of species'. They also suggest that any construction work should take place outside of the breeding bird season. If this can not be achieved then the applicant will have to ensure no breeding birds are disturbed during the construction period.



7. Visual Impact

Both ZVI maps and photomontages are presented in this section of the document. Section 7.1 (Maps of Myreton Wind Farm) contains two ZVI maps highlighting the visibility of the Myreton scheme only, including both the single consented wind turbine and the two proposed wind turbines. These maps highlight where the turbines will be visible in green, and have been calculated to a diameter of 50km.

Section 7.2 (Cumulative Impact ZVI Maps of four Existing and Proposed Wind Farms in the Area) contains two cumulative ZVI maps. These again have been calculated to a diameter of 50km and highlight where each of the four wind farms under analysis will be visible from. The green areas highlight where one wind farm will be visible, the blue areas highlight where two wind farms will be visible, the red areas highlight where three wind farms will be visible and the yellow areas highlight where all four wind farms will be visible. Each of the coloured areas represent where at least one wind turbine from each wind farm will be visible.

The photomontages have been prepared using thirteen of the original photomontages as well as ten further locations and they are intended to provide views of the Myreton and other wind farms under analysis from locally sensitive locations. As previously mentioned, the photomontage viewpoint locations have been agreed upon with officers of the planning department of Moray Council.

In locations where the various wind farms theoretically visible are located in different directions, an additional photomontage has been created from the same location, facing a different direction. These multi directional photomontage locations are designated with the letters A and B and are explained within the comments section of the relevant photomontage.

The photographs used for the photomontages have three different included angles. This is due to photographs being taken at different times, with different cameras for the visual impact assessment of different planning applications. The specific photographs from earlier planning applications have been used to allow easy comparison of the photomontages contained within this cumulative impact assessment with these earlier photomontages.

The photomontages of the initial single wind turbine planning application (07/01102/FUL) had an included angle of 49.5°. The additional photomontages contained within the second application for the addition of two further wind turbines (09/00247/FUL) had an included angle of 53°. Finally, the additional photomontages included within this cumulative impact assessment have an included angle of 57°.

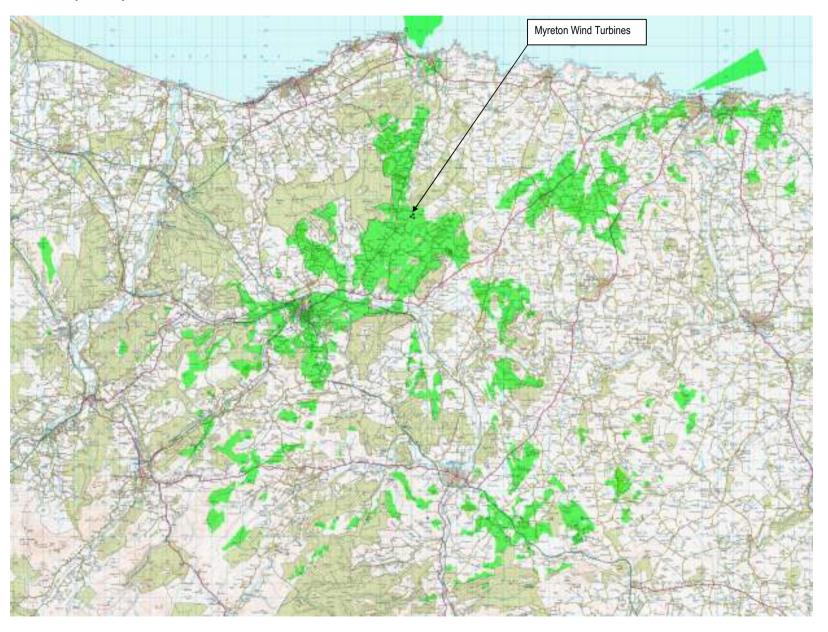
The photomontages have all been set up so the turbines face the viewpoint location. This is to provide a worst case scenario for each showing the turbine from the front when it appears at its largest and most prominent. It also allows the turbines to actually be visible from some of the further away viewpoint locations.

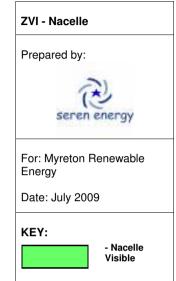
The impact of the individual wind farms on landscape character is most easily analysed using the 28 photomontages provided within this document. The interrelationship between zones of visual influence can be seen between the ZVI diagrams for the Myreton project alone and the cumulative impact ZVI diagrams. Of the 23 viewpoint locations, 14 of them are taken in locations where 4 wind farms are theoretically visible, 7 of them are taken in locations where 3 wind farms should theoretically visible, 1 is taken in a location where 2 wind farm should theoretically be visible and 1 is taken in a location where 1 wind farm should theoretically be visible.

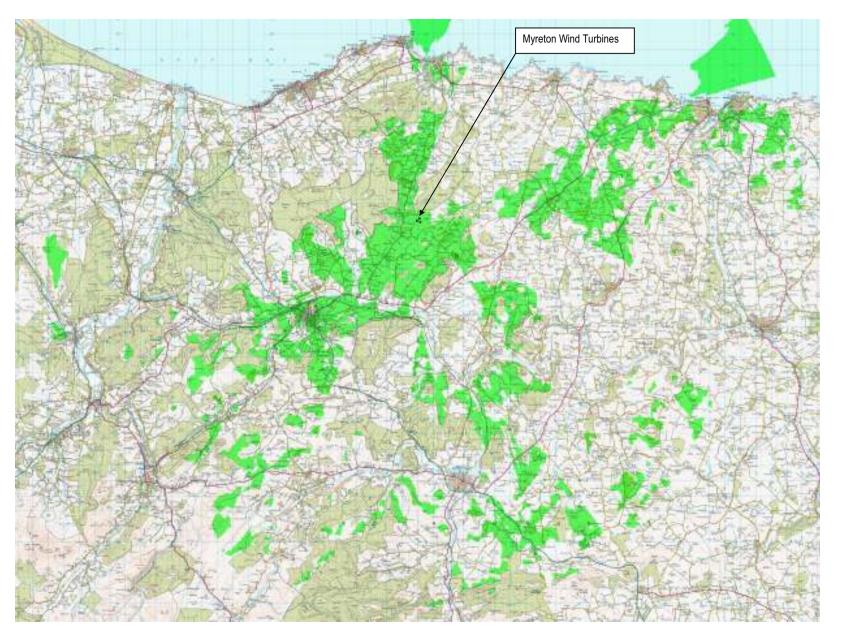
The length of A and B class roads from which the blade tips of the Myreton development will be visible within a 50km diameter (as shown in the second ZVI diagram in section 7.1) were calculated. The Myreton wind turbines will theoretically be visible from 40.7km of A class roads and 39.5km of B class roads. In reality these figures are likely to be considerably lower due to trees and vegetation in the foreground not taken into account within the ZVI calculation. These would obstruct the view of the wind farms from certain sections of the roads.



7.1 ZVI Maps of Myreton Wind Farm







ZVI – Blade Tips

Prepared by:



For: Myreton Renewable Energy

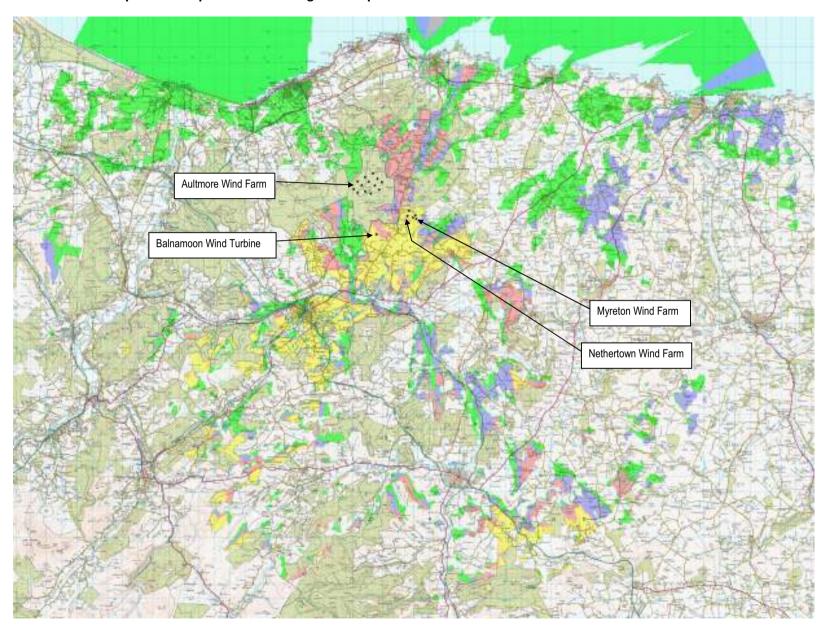
Date: July 2009

KEY:



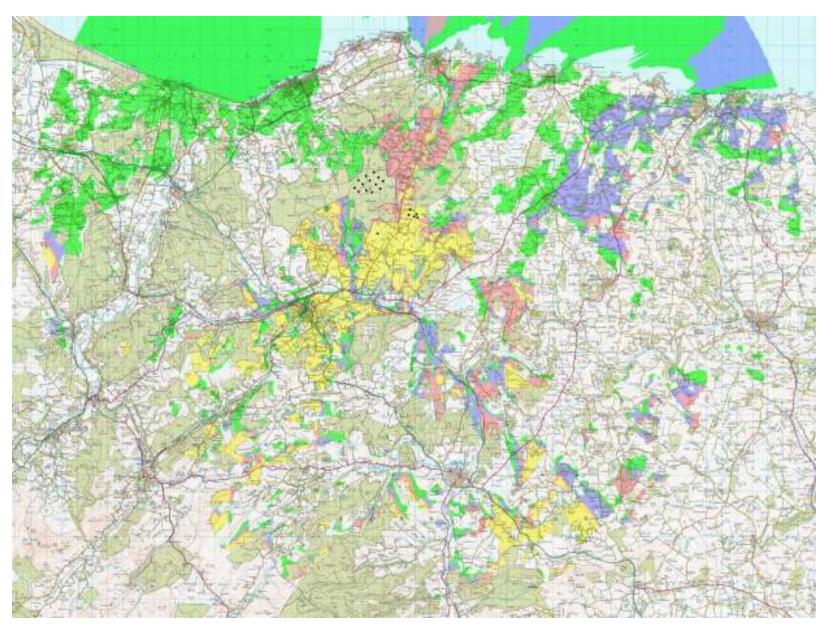
- Blade Tips Visible

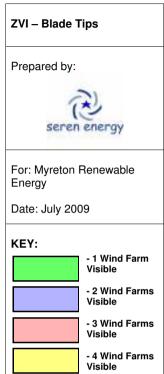
7.2 Cumulative Impact ZVI Maps of four Existing and Proposed Wind Farms in the Area





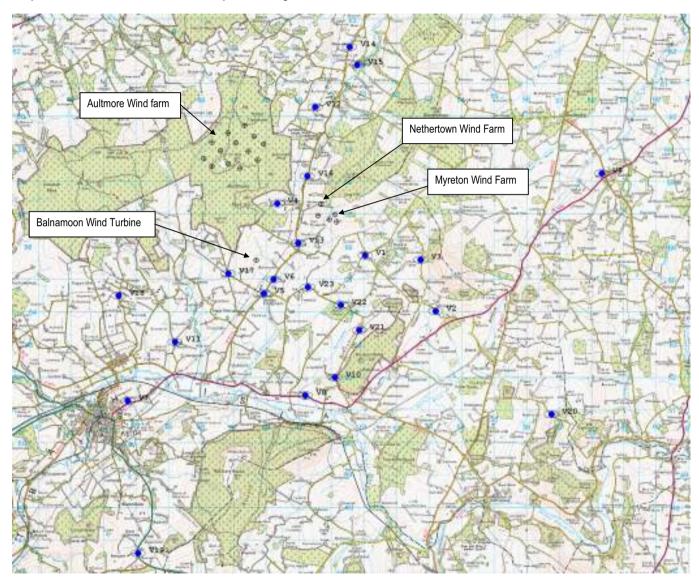






7.3 Photomontages

Photomontages have been produced to show how the proposed additional wind turbines at Myreton will look if all the other wind projects proposed for the area are given planning consent. Therefore the photomontages presented in this document offer a worse case scenario. Several of the viewpoint locations have photomontages taken in different directions. This is to provide views of each of the potential wind farms visible from each photomontage location.









Location: V1 Minor Road Near Westerton

Grid Reference: NJ 51038 55735

View Direction: 323°

Altitude: 166m

Distance to nearest turbine: 1355m

Height of Camera: 2m Date of Photograph : October 2008 Included Angle: 53°

Comments:

The three wind turbines at Myreton are the only wind turbines clearly visible in this photomontage. The blade tips of one of the proposed Nethertown wind turbines can also just be seen over the tops of the trees to the left of the Myreton turbines.







Location: V2 White Hill

Grid Reference: NJ 53220 54033 View Direction: 324°

Altitude: 170m

Distance to nearest turbine: 4100m

Height of Camera: 2m

Date of Photograph : January 2007 Included Angle: 49.5°

Comments:

Although all four wind farms are theoretically visible from this location, in this photomontage only the Myreton, Nethertown and Aultmore wind farms are visible. Much of the Aultmore wind farm is obstructed from view by the trees in the foreground.







Location: V3 Knock Hill

Grid Reference: NJ 52756 55611

View Direction: 304° Altitude: 214m

Distance to nearest turbine: 2836m

Height of Camera: 2m

Date of Photograph : January 2007 Included Angle: 49.5°

Comments:

The three Myreton wind turbines are the most clearly visible wind turbines within this photomontage as they are the closest to the viewpoint location. The hubs and blades of the proposed Nethertown wind turbines are also visible and the blade tips of the Aultmore wind turbines can be seen in the background.







Location: V4 Near Myreside Grid Reference: NJ 48344 57337 View Direction: 98°

Altitude: 202m

Distance to nearest turbine: 1314m

Height of Camera: 2m

Date of Photograph : January 2007 Included Angle: 49.5°

Comments:

The two proposed Nethertown wind turbines are clearly visible in the foreground of this photomontage with the three Myreton wind turbines located further up the hill behind. From this angle it appears as if the two wind farms are one but by more detailed inspection, the rotor diameters of the Nethertown wind turbines are considerably larger. The Aultmore wind farm is not visible from this location (in a different direction) due to the trees of the forest it is situated within.







Location: V5 (A) Grange Crossroads Grid Reference: NJ 47936 54575 View Direction: 47°

Altitude: 132m

Distance to nearest turbine: 2920m

Height of Camera: 2m

Date of Photograph : January 2007 Included Angle: 49.5°

Comments:

The three Myreton wind turbines are visible in the centre of the photomontage. The two proposed Nethertown wind turbines are also visible in the left of the photomontage, although the turbine to the left of the photomontage is slightly camouflaged due to the white sky background.







Location: V5 (B) Grange Crossroads

Grid Reference: NJ 47936 54575

View Direction: 355° Altitude: 132m

Distance to nearest turbine: 1054m

Height of Camera: 2m

Date of Photograph: July 2009

Included Angle: 57°

Comments:

This photomontage is taken from the same location as the previous photomontage V5 (A), but in a different direction. The Balnamoon turbine which has already been commissioned can be seen in the foreground on the left. Several of the wind turbines from the Aultmore Wind Farm can also be seen in the background but most are obstructed from view due to the local topography and the forest that the wind farm is located within. The Balnamoon wind turbine is located at just over 1km away from this viewpoint location.







Location: V6 (A) Near Balnamoon

Grid Reference: NJ 48232 55011

View Direction: 52° Altitude: 137m

Distance to nearest turbine: 2390m

Height of Camera: 2m

Date of Photograph: January 2007

Included Angle: 49.5°

Comments:

In this photomontage the 3 Myreton wind turbines are visible in the centre of the photomontage and the 2 Nethertown wind turbines are visible on the left of the photomontage. The wind turbines within this photomontage have been artificially brightened to give them greater visibility for the purposes of this photomontage. Due to the overcast weather when the photomontage was taken, the turbines would actually appear darker and less visually prominent in real life.







Location: V6 (B) Near Balnamoon

Grid Reference: NJ 48232 55011 View Direction: 335°

Altitude: 137m

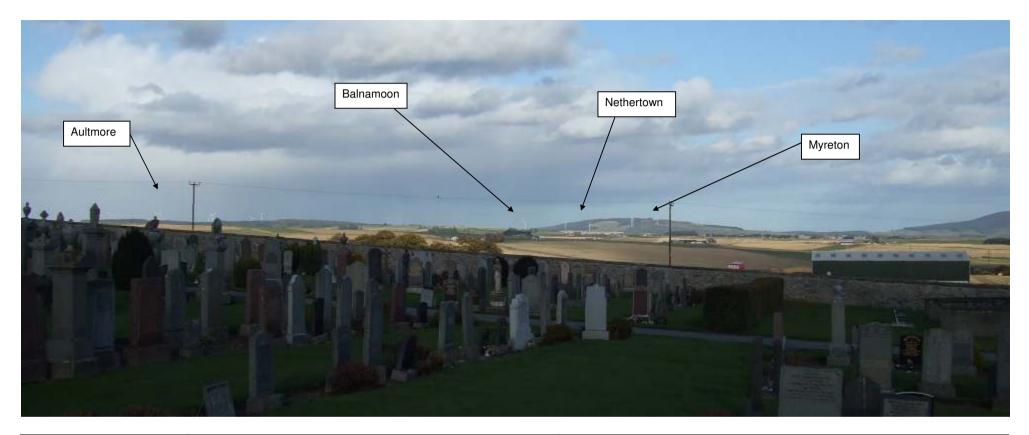
Distance to nearest turbine: 795m

Height of Camera: 2m Date of Photograph: July 2009 Included Angle: 57°

Comments:

This photomontage is taken in the same location as the previous V6 photomontage but in a different direction, taking into view the Balnamoon wind turbine in the foreground and the Aultmore Wind Farm just visible over the tops of the trees to the right in the background.







Location: V7 Keith Cemetery

Grid Reference: NJ 43752 51281 View Direction: 48°

Altitude: 145m

Distance to nearest turbine: 5854m

Height of Camera: 3m

Date of Photograph : October 2008 Included Angle: 53°

Comments:

All of the four wind developments can be seen from this viewpoint location. The turbines have been artificially brightened to allow them greater visibility for the purpose of this photomontage. To gain this clear unobstructed view the photograph was taken from on top of the wall of the churchyard. This view would not be seen when walking within the churchyard.







Location: V8 A95 south of site

Grid Reference: NJ 49215 51453 View Direction: 12°

Altitude: 99m

Distance to nearest turbine: 4417m

Height of Camera: 2m

Date of Photograph : October 2008 Included Angle: 53°

Comments:

Only the Myreton wind turbines are visible within this photomontage. This view of the turbines was only achievable from within the field adjacent to the road rather than the road itself, and the photograph location had to be carefully selected in order for the Myreton wind turbines to be visible. The other wind farms in question are obstructed from view by the local topography and the vegetation in the foreground.







Location: V9 Cornhill

Grid Reference: NJ 49326 58259 View Direction: 260°

Altitude: 103m

Distance to nearest turbine: 8290m Height of Camera: 2m Date: October 2008 Included Angle: 53°

Comments:

From this viewpoint location only one of the Myreton wind turbines will be visible. This is visible just to the left of the telegraph pole in the centre of the photomontage.







Location: V10 Forest at Limehillock

Grid Reference: NJ 50123 51999

View Direction: 335° Altitude: 145m

Distance to nearest turbine: 4342m

Height of Camera: 2m

Date of Photograph : October 2008

Included Angle: 53°

Comments:

All 4of the wind farms included within this cumulative impact assessment are visible within this photomontage. The Balnamoon wind turbine can be seen on the left. The blades and nacelles of most of the wind turbines within the Aultmore Wind Farm can bee seen in the centre of the photomontage over the horizon of trees and the towers and blades of the Myreton and Nethertown wind turbines are visible over on Lurg Hill to the right.







Location: V11 Bonnethill

Grid Reference: NJ 45204 53089 View Direction: 51°

Altitude: 157m

Distance to nearest turbine: 3543m

Height of Camera: 2m Date of Photograph : October 2008 Included Angle: 53°

Comments:

The Nethertown and Myreton Wind Farms are visible within this photomontage. The nacelle of the closer Balnamoon wind turbine can be seen to the left of the other two wind farms.







Location: V12 (A) Minor Road off B9018 north of Myreton Grid Reference: NJ 49428 60178

View Direction: 170° Altitude: 151m

Distance to nearest turbine: 2990m

Height of Camera: 2m Date of Photograph : October 2008 Included Angle: 53°

Comments:

The two wind turbines to the right of the picture make up the Nethertown wind farm, with the three Myreton wind turbines to the left with smaller rotor diameters.







Location: V12 (B) Minor Road off B9018 north of Myreton Grid Reference: NJ 49428 60178

View Direction: 243°

Altitude: 151m

Distance to nearest turbine: 1954m

Height of Camera: 2m Date of Photograph: July 2009 Included Angle: 57°

Comments:

Taken from the same location as V12 (A), this photograph was taken facing the proposed Aultmore Wind Farm. The light conditions of the two photomontages are different as they were taken at different times. Several of the wind turbines in the Aultmore Wind Farm will be visible from this location.







Location: V13 Near Myreton Entrance

Grid Reference: NJ 48995 56122 View Direction: 57°

Altitude: 150m

Distance to nearest turbine: 1043m

Height of Camera: 2m

Date of Photograph : October 2008 Included Angle: 53°

Comments:

This photomontage was originally taken to gain a close view of the Myreton wind turbines from the nearest public road. The two proposed Nethertown wind turbines, with larger rotor diameters than the Myreton wind turbines, can be seen on the left of the photomontage.







Location: V14 Kirktown of Deskford

Grid Reference: NJ 50576 62143

View Direction: 204°

Altitude: 92m

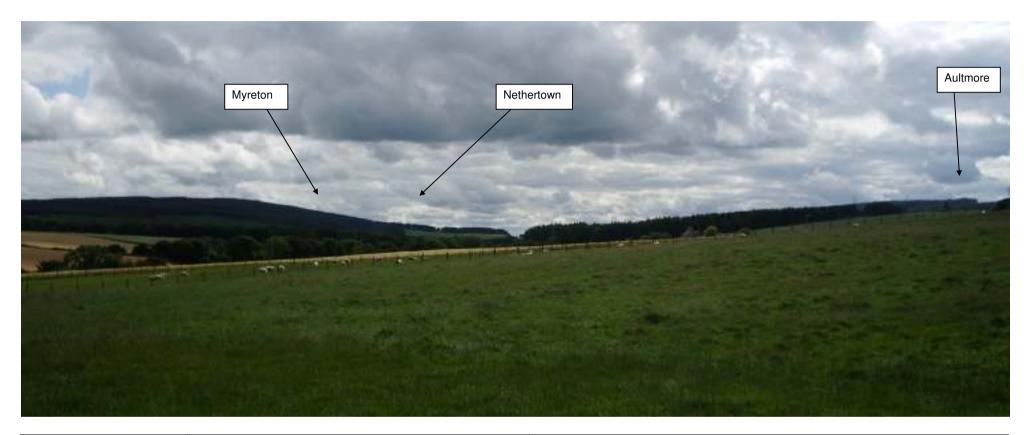
Distance to nearest turbine: 3989m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

This photograph was taken facing all four wind farms. Using a topography only model all four wind farms should be theoretically visible from this location, but in reality only the Aultmore Wind Farm is visible on the right of the photomontage. This is due to foreground vegetation blocking the view of the other wind turbines.







Location: V15 Deskford Church

Grid Reference: NJ 50895 61650

View Direction: 201°

Altitude: 81m

Distance to nearest turbine: 3875m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

The only wind turbines with their towers visible within this photomontage are the two Nethertown turbines. The blades of one of the Aultmore wind turbines can be seen on the right and the blade tips of one of the Myreton wind turbines can be seen on the left. These are highlighted on the photomontage.







Location: V16 B9018 north of Nethertown

Grid Reference: NJ 49275 58173

View Direction: 155° Altitude: 141m

Distance to nearest turbine: 954m

Height of Camera: 2m

Date of Photograph : July 2009 Included Angle: 57°

Comments:

Only one wind turbine, from the Nethertown wind farm, is visible form this location. Although the viewpoint location is only 1km from the nearest turbine, foreground trees and vegetation block the view of the second Nethertown turbine as well as the Myreton wind turbines. A second photomontage was also taken in the direction of the Aultmore Wind Farm but none of these turbines were visible from this location at the bottom of the valley floor so the photomontage was not included within this assessment.







Location: V17 (A) Minor roads west of Balnamoon Grid Reference: NJ 46846 55191

View Direction: 55° Altitude: 206m

Distance to nearest turbine: 949m

Height of Camera: 2m Date of Photograph: July 2009 Included Angle: 57°

Comments:

Taken in a different direction but in the same location as photomontage V17 (A), this photomontage shows the commissioned Balnamoon wind turbine in the foreground and the Myreton and Nethertown wind farms in the background.







Location: V17 (B) Minor roads west of Balnamoon Grid Reference: NJ 46846 55191 View Direction: 10°

Altitude: 206m

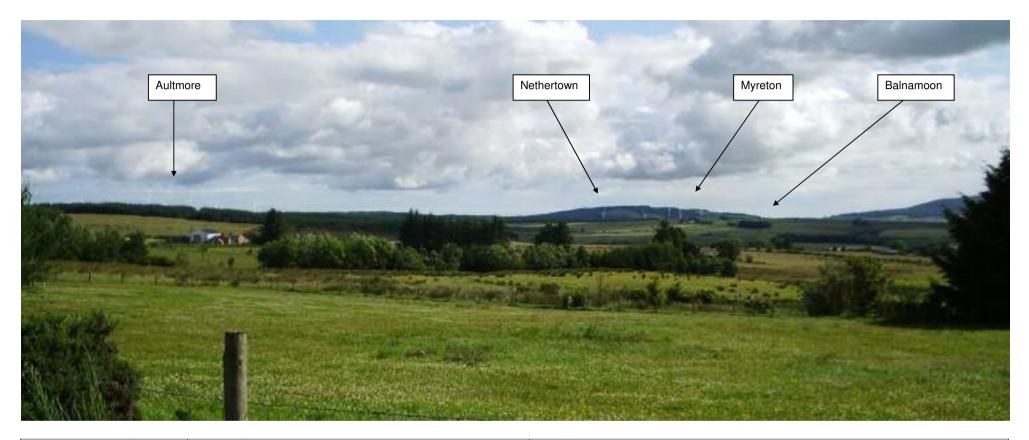
Distance to nearest turbine: 3250m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

This photomontage is taken facing the Aultmore Wind Farm. Several of the turbines within the wind farm are visible on the horizon line above the trees.







Location: V18 Glen of Newmill

Grid Reference: NJ 43472 54507

View Direction: 55°

Altitude: 211m

Distance to nearest turbine: 4368m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

This is the most westerly of the photomontages taken for this cumulative impact assessment and it is taken from a minor road in the rural countryside. All four wind farms are visible, but are small due to their distance from the viewpoint.







Location: V19 A96 South of Keith

Grid Reference: NJ 44070 46608

View Direction: 30° Altitude: 207m

Distance to nearest turbine: 9700m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

This viewpoint location is the furthest from the proposed Myreton wind turbines under investigation in this document. All four wind farms are visible but at this distance the turbines appear very small. The Myreton and Nethertown wind farms can be seen on the side of Lurg Hill on the right hand side of the photomontage, with the Aultmore turbines in the centre.







Location: V20

Grid Reference: NJ 56778 50871

View Direction: 310° Altitude: 217m

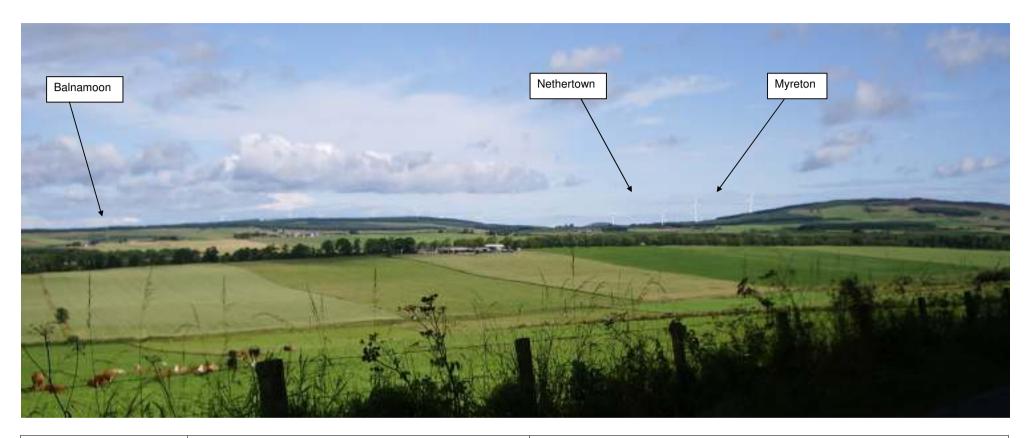
Distance to nearest turbine: 8862m

Height of Camera: 2m Date of Photograph : July 2009 Included Angle: 57°

Comments:

All four wind farms are visible within this photomontage but due to its distance from the nearest wind farm of almost 9km, the turbines appear small and distant. The turbines have been artificially brightened to increase their visibility for the purpose of this photomontage.







Location: V21 Sillyearn Hill Grid Reference: NJ 50863 53455 View Direction: 340°

Altitude: 152m

Distance to nearest turbine: 3391m

Height of Camera: 2m

Date of Photograph : July 2009 Included Angle: 57°

Comments:

The Balnamoon wind turbine has been identified within this photomontage to highlight the difference between the colour of the modelled turbines, which have been artificially brightened, and the turbine colour in reality. The three turbines proposed at the Myreton site will be the same model and colour as the turbine already installed at Balnamoon.







Location: V22 Fortry Wood Grid Reference: NJ 50305 54217 View Direction: 340°

Altitude: 137m

Distance to nearest turbine: 2561m

Height of Camera: 2m Date of Photograph: July 2009 Included Angle: 57°

Comments:

This viewpoint is located on a minor road between the B9018 and the A96. The Myreton and Nethertown wind turbines are clearly visible from this location and the rotors and blades of several of the wind turbines within the Aultmore Wind Farm can also be seen over the tops of the trees to the left of the photomontage.







Location: V23 (A) Minor Road Near Grange Crossroads Grid Reference: NJ 49296 54775

View Direction: 5° Altitude: 163m

Distance to nearest turbine: 2230m

Height of Camera: 2m Date of Photograph: July 2009 Included Angle: 57°

Comments:

The distinction between the Myreton and the Nethertown wind farms is clearly visible within this photomontage with the 3 Myreton wind turbines to the right of the picutre on the edge of Lurg Hill. Several of the turbines within the proposed Aultmore Wind Farm can also be seen on the left hand side of the photomontage, behind the trees in the foreground.







Location: V23 (B) Minor Road Near Grange Crossroads

Grid Reference: NJ 49296 54775

View Direction: 321° Altitude: 163m

Distance to nearest turbine: 1797m

Height of Camera: 2m

Date of Photograph: July 2009

Included Angle: 57°

Comments:

This photomontage was taken in the same location as photomontage V23 (A) but in a different direction to take into view the Balnamoon and Aultmore wind farms. The commissioned Balnamoon wind turbine can be seen in the foreground to the left of the photomontage. The wind turbines of the Aultmore Wind Farm can be seen to the right hand side of the photomontage over the tops of the trees.

