

TCP/11/16(550) – 18/00473/FLL – Erection of a wind turbine and associated works on land south east of Warlawhill Farm, Carnbo, Kinross

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**TCP/11/16(550) – 18/00473/FLL – Erection of a wind turbine
and associated works on land south east of Warlawhill
Farm, Carnbo, Kinross**

**PAPERS SUBMITTED
BY THE
APPLICANT**

25 JUL 2018

NOTICE OF REVIEWRECEIVED
UNDER SECTION 43A(8) OF THE TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 (AS AMENDED) IN
RESPECT OF DECISIONS ON LOCAL DEVELOPMENTSTHE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND LOCAL REVIEW PROCEDURE)
(SCOTLAND) REGULATIONS 2013

THE TOWN AND COUNTRY PLANNING (APPEALS) (SCOTLAND) REGULATIONS 2008

IMPORTANT: Please read and follow the guidance notes provided when completing this form.
Failure to supply all the relevant information could invalidate your notice of review.

Use BLOCK CAPITALS if completing in manuscript

Applicant(s)Name ELECTRICITYAddress LION HOUSE
ROWCROFT
STROVDPostcode GL5 3BYContact Telephone 1 01453 790152Contact Telephone 2 Fax No E-mail* **Agent (if any)**Name Address Postcode Contact Telephone 1 Contact Telephone 2 Fax No E-mail* Mark this box to confirm all contact should be
through this representative: ☐

* Do you agree to correspondence regarding your review being sent by e-mail?

Yes ☒ No ☐

Planning authority

PERTH & KINROSS

Planning authority's application reference number

18/00473/FLL

Site address

LAND SOUTH EAST OF WHARREWHILL FARM, CARNBO,
KINROSS, KY13 0NZDescription of proposed
developmentERECTION OF A SINGLE (1 NO.) WIND TURBINE (18.5M HUB HEIGHT AND
25M TIP HEIGHT) AND ASSOCIATED INFRASTRUCTURE

Date of application

20/3/2018

Date of decision (if any)

3/5/2018**Note.** This notice must be served on the planning authority within three months of the date of the decision
notice or from the date of expiry of the period allowed for determining the application.

Nature of application

1. Application for planning permission (including householder application) ☒
2. Application for planning permission in principle ☐
3. Further application (including development that has not yet commenced and where a time limit has been imposed; renewal of planning permission; and/or modification, variation or removal of a planning condition) ☐
4. Application for approval of matters specified in conditions ☐

Reasons for seeking review

1. Refusal of application by appointed officer ☒
2. Failure by appointed officer to determine the application within the period allowed for determination of the application ☐
3. Conditions imposed on consent by appointed officer ☐

Review procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may tick more than one box if you wish the review to be conducted by a combination of procedures.

1. Further written submissions ☐
2. One or more hearing sessions ☐
3. Site inspection ☒
4. Assessment of review documents only, with no further procedure ☒

If you have marked box 1 or 2, please explain here which of the matters (as set out in your statement below) you believe ought to be subject of that procedure, and why you consider further submissions or a hearing are necessary:

Site inspection

In the event that the Local Review Body decides to inspect the review site, in your opinion:

- | | Yes | No |
|--|-------------------------------------|-------------------------------------|
| 1. Can the site be viewed entirely from public land? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Is it possible for the site to be accessed safely, and without barriers to entry? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If there are reasons why you think the Local Review Body would be unable to undertake an unaccompanied site inspection, please explain here:

KEY ISSUES WOULD APPEAR TO BE VISUAL IMPACT FROM OCHIL HILLS SLA AND CLEISH HILLS TOWARDS THE SITE - BOTH THESE AREAS ARE PUBLICALLY ACCESSIBLE (SEE FIG 10). ACCESS CAN BE ARRANGED TO VISIT SITE OF THE PROPOSED IF REQUIRED.

Statement

You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. Note: you may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

If the Local Review Body issues a notice requesting further information from any other person or body, you will have a period of 14 days in which to comment on any additional matter which has been raised by that person or body.

State here the reasons for your notice of review and all matters you wish to raise. If necessary, this can be continued or provided in full in a separate document. You may also submit additional documentation with this form.

PLEASE REFER TO THE ATTACHED 'NOTICE OF REVIEW STATEMENT JULY 2018'

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made?

Yes ☒ No ☐

If yes, you should explain in the box below, why you are raising new material, why it was not raised with the appointed officer before your application was determined and why you consider it should now be considered in your review.

VPs 9 AND 10 WERE PROVIDED AS WIRELINES AS PART OF THE PLANNING APPLICATION, BUT WERE NOT REFERRED TO IN THE REPORT OF HANDLING. THESE TWO VPS ARE NOW PROVIDED AS PHOTOMONTAGES. NEW PHOTOS HAVE BEEN TAKEN FOR VPS 7 AND 8 FOLLOWING COMMENTS FROM CASE OFFICER. VP 7 IS FROM A SLIGHTLY DIFFERENT LOCATION TO PROVIDE A CLEARER VIEW TOWARDS THE PROPOSAL.

List of documents and evidence

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review.

NOTICE OF REVIEW STATEMENT (JULY 2018)
FIGURE 9: PHOTOMONTAGES AND WIRELINES (UPDATES JULY 2018)
FIGURE 10: CUMULATIVE PLAN (UPDATES JULY 2018)
FIGURE 8: VIEWPOINT LOCATIONS.

Note. The planning authority will make a copy of the notice of review, the review documents and any notice of the procedure of the review available for inspection at an office of the planning authority until such time as the review is determined. It may also be available on the planning authority website.

Checklist

Please mark the appropriate boxes to confirm you have provided all supporting documents and evidence relevant to your review:

- ☒ Full completion of all parts of this form
- ☒ Statement of your reasons for requiring a review
- ☒ All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review.

Note. Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice from that earlier consent.

Declaration

I the applicant/agent [delete as appropriate] hereby serve notice on the planning authority to review the application as set out on this form and in the supporting documents.

Signed



Date

24/7/2018

Notice of Review Statement

The application (18/00473/FLL) before the Local Review Body is for a single farm-scale wind turbine (18.5m to hub and 25m to tip) at Wharlawhill Farm, near Carnbo, Kinross, KY13 0NZ. The site is located on part of an undulating field equidistant between the A91 to the north and the A977 to the south. The application was refused on 3rd May 2018 following a delegated report recommending refusal on the basis that the proposed development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan. Specifically, the Case Officer concluded that:

- *the scale of the turbine would result in unacceptable adverse landscape impact on the immediate landscape and wider landscape character types contrary to Policies ER1A (a) and ER6 (a)(b) of the Perth & Kinross Local Development Plan 2014; and,*
- *the proposed visual impact will adversely affect the special landscape quality of the designated Special Landscape Area of the Ochil Hills [sic], contrary to Perth & Kinross Council's Supplementary Guidance on Landscape (June 2015).*

Taking the visual impact of the turbine into consideration, it is acknowledged by both the Case Officer and Applicant that the introduction of a structure of this scale will have some degree of visual impact, particularly within the area immediately surrounding the site.

The Case Officer acknowledges in his review of the viewpoint analysis that there would be no significant visual impacts from the viewpoints considered within 1km of the proposal (Viewpoints 1 – 6), although some concerns are raised in respect to Viewpoint 4 which is considered to demonstrate that the proposal would detract from the backdrop of the Ochil Hills. Whilst the Applicant recognises that the turbine will appear in front of the Ochil Hills at this point (and other viewpoints to the south), it is also relevant that taller existing pylons already detract from these views across a much wider panoramic than a single farm-scale wind turbine half the height of the pylons. It is agreed that the turbine would introduce movement into such views but that this should not be considered unacceptable given the current detraction the pylons already exercise over such views. Furthermore, the argument that the pylons are lattice structures – and presumably considered slender in profile – whilst the turbine is not, would appear confused by the Case Officer. Both elements are considered slender, and whilst the single turbine would introduce a moving dynamic, the taller and more wide-ranging existing pylons undoubtedly already detract, to some degree, from views from the south towards the Ochil Hills. It is the Applicant's view that a single farm-scale turbine would not unacceptably detract from the existing views from the south towards the Ochil Hills.

Two additional photomontages (Viewpoint 7 and Viewpoint 8) were provided for the single turbine planning application (following a previous application for two turbines on this site), in response to the Case Officer's concerns over views into, and out of, the Ochil Hills. New photographs have also now been taken for Viewpoints 7 and 8 in response to concerns raised by the Case Officer in his Report of Handling and these are provided in an updated **Figure 9: Photomontages and Wirelines (Updated)** attached to this review application. Lighting conditions are much clearer from VP8 and a clearer view across the Loch Leven Basin is provided at Viewpoint 7.

As with the analysis of Viewpoint 4 above, the view from Viewpoint 7 demonstrates that the turbine will be relatively visible from parts of the busy A977 but within the context of existing grid infrastructure. It is difficult to see how the addition of a single turbine would significantly detract

from this existing view, especially when it is considered that the A977 road runs predominantly east to west for several kilometres (as shown in **Figure 10: Cumulative Plan (Updated)** attached), and therefore outside the dominant field of view for the vast majority of road users along this stretch of road.

A new photograph for Viewpoint 8 is provided which clearly demonstrates the visual context of the proposed turbine within the rolling landscape of the Loch Leven Basin and the existing agricultural and grid infrastructure. As indicated in the Case Officer's summary the turbine will sit with a back cloth of rising land to the south. Whilst it is acknowledged that the turbine will be visible from some of the higher parts of the Ochil Hills, Viewpoint 8 is only 1,260 metres from the turbine and even at this distance is set below the skyline, at a similar height to adjacent treelines and well below the overhead pylons.

Contrary to the Case Officer's report, two wirelines were provided with the application including one from the Cleish Hills to the south and one from the Ochil Hills further north of Viewpoint 8. The revised **Figure 9** attached now includes these two viewpoints as photomontages rather than just wirelines which were provided in the planning application. Viewpoint 9 is taken from a core path north of Arlick Hill within the Ochil Hills SLA (3.6km from the site). This elevated position is representative of the views described by the Case Officer in his Report of Handling where referring to: *'a series of core paths located on the Ochills to the north of Carnbo... located within an identified Special Landscape Area and the views out of this area are considered to be important'*. Given the existence of other vertical features in views south out of the Ochil Hills SLA, including in clear proximity to a number of existing turbines, the Applicant refutes the conclusion from the Case Officer that the turbine will be *'significant in the landscape'*. It is acknowledged that the presence of another turbine will add to the vertical features already present, but not that this will add a layer of significance from views out of the Ochil Hills SLA. The Applicant would recommend the Local Review Body carry out a site inspection which includes experiencing the view south from an elevated position within the Ochil Hills.

Viewpoint 10 – which was included in the planning application as a wireline and is now provided as a photomontage for this Review – is taken from an elevated position from the Cleish Hills to the south of the proposal. At this distance (5.2km) the turbine would be indiscernible from the elevated positions to the south referred to in the Officer's Report of Handling. It is therefore difficult to agree with the view that *'the turbine has the potential to impact on views from the higher ground to the south of the site and raw the eye from the windfarm to the north [Greenknowes] onto the valley floor.'* Again, the Applicant would recommend the Local Review Body carry out a site inspection which includes experiencing the view north from an elevated position to the south of the site.

The Officer refers to the impact of the Bankhead turbines (47.1m to tip) on the landscape and the refused and withdrawn proposals for South Kilduff (45m to tip) and Gelvin Farm (49m to tip) as way of comparison to this proposal. However, this proposal is for a maximum tip height of 25m, approximately half that of the three other referenced wind turbine proposals. The Officer does acknowledge that the scale of this turbine is limited and it is mainly seen in context of the existing taller pylons, but he concludes that a further turbine in this landscape would erode the character of the Loch Leven Basin. Whilst, the turbine would be visible at certain points to the north of Carnbo, the presence of other vertical structures (including grid infrastructure), lack of public footpaths within 1km of the site, the intervening vegetation and the east-west orientation of the nearby A roads would not represent a significant effect on the landscape of the Loch Leven Basin. Views out of the Ochil Hills already include much larger vertical structures such as the 35m grid pylons directly adjacent to this proposal and the existing Bankhead turbines. The Applicant respectfully requests

that Local Review Body members inspect the site taking account of views north of Carnbo in the Ochil Hills.

In summary the Applicant does not agree with the Officer's view that a single farm-scale wind turbine at this location would have a significant detrimental effect on the local landscape character types nor the views out of the Ochil Hills Special Landscape Area. The site's estimated annual average wind speed of 6.2m/s at tip height indicates the proposed location is very good for wind generation. The expected generation of approximately 48,000 kilowatt-hours (kWh) of electricity per annum (equivalent to 12 typical UK homes annual electricity usage) would contribute towards the annual electricity demand of the farm being met onsite.



Legend

- ▲ Indicative Turbine Location
- Land Boundary
- ★ Viewpoint Locations

Zone of Theoretical Visibility
(viewer height 2m)

Visibility to 25m Blade Tip

OS Turbine Locations (x,y)
T1 306075 702380

Note:
Please refer to figure 6 for further information
on ZTV's

Figure: 8
Title: Viewpoint Locations

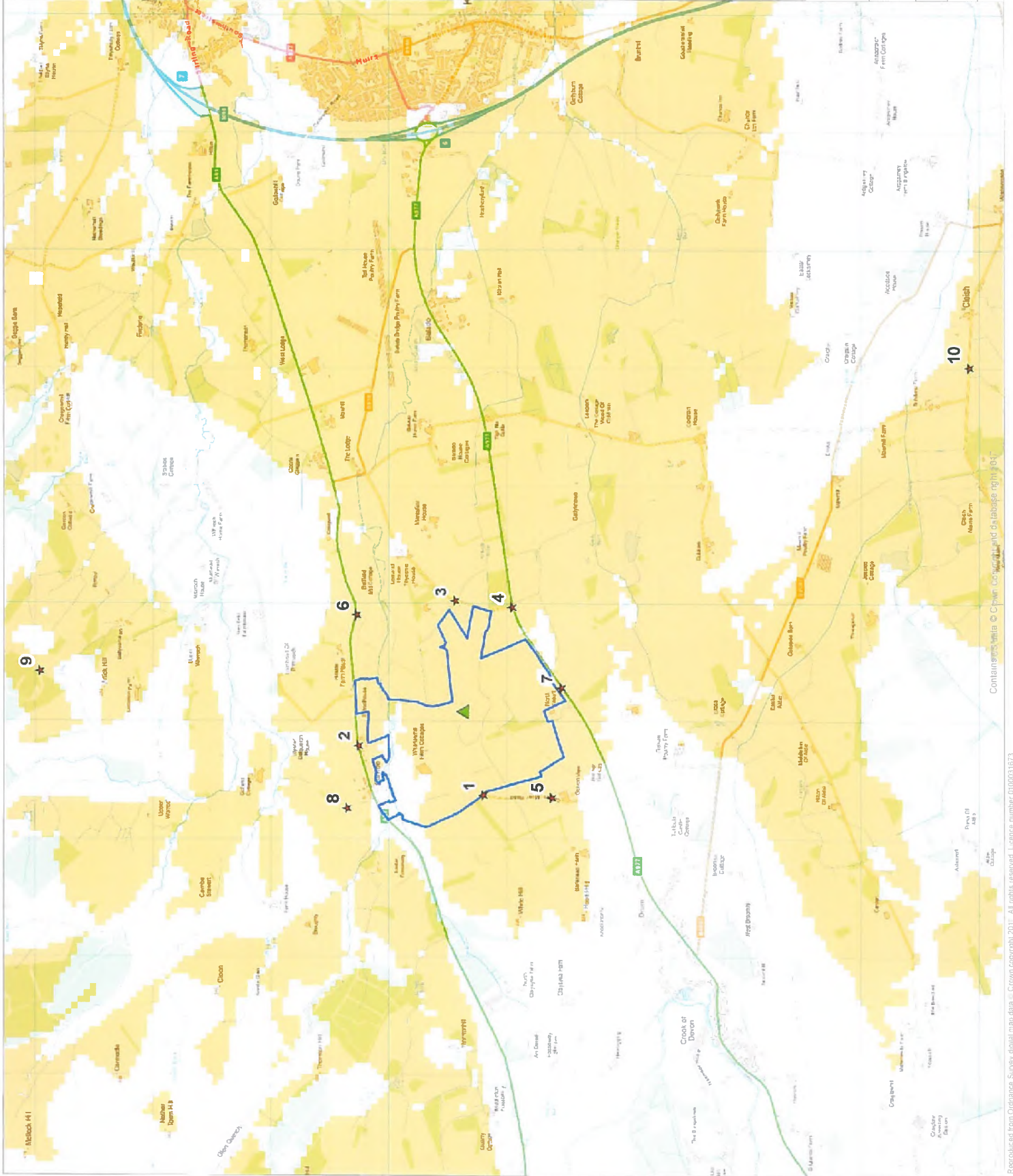


Drawn by: MW
Checked by: [Signature]
Approved by: [Signature]

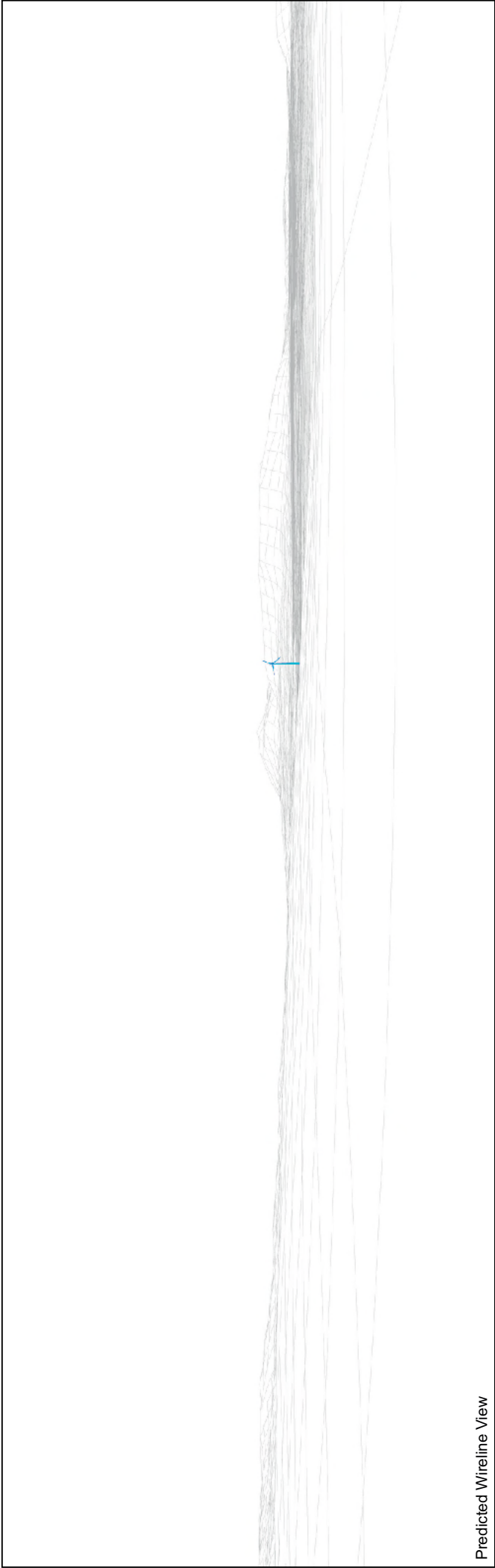
Ref: 6436_P0246_02 Date: July 2018

BR1106 Wharlawhill Farm

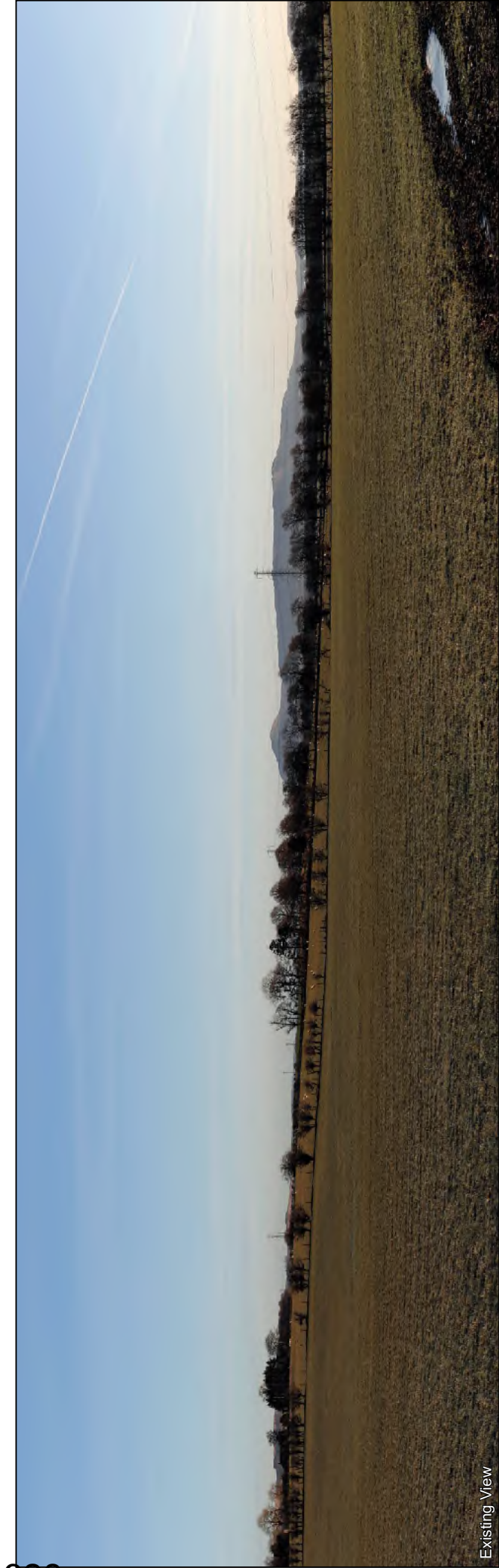
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Predicted Wireline View



Existing View



Document Number:
8438_P0091_02

Drawn by:
Checked by:
Approved by:

OS Reference: 305369, 702208
Ground Level Elevation: 178m AOD
Bearing to Site Centre: 075° (NE)
Distance to Nearest Turbine: 726m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 11:00

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Figure 9: Photomontage and Wirelines
Viewpoint 1 - Gelvan Moor Road
Wharlawhill Farm

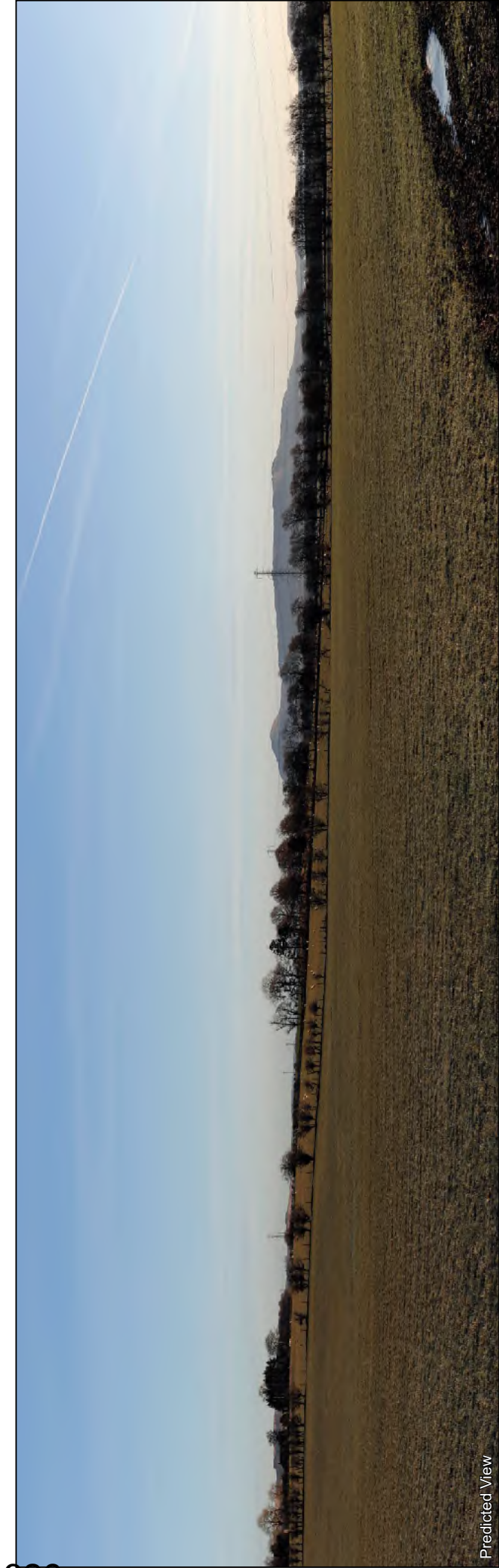
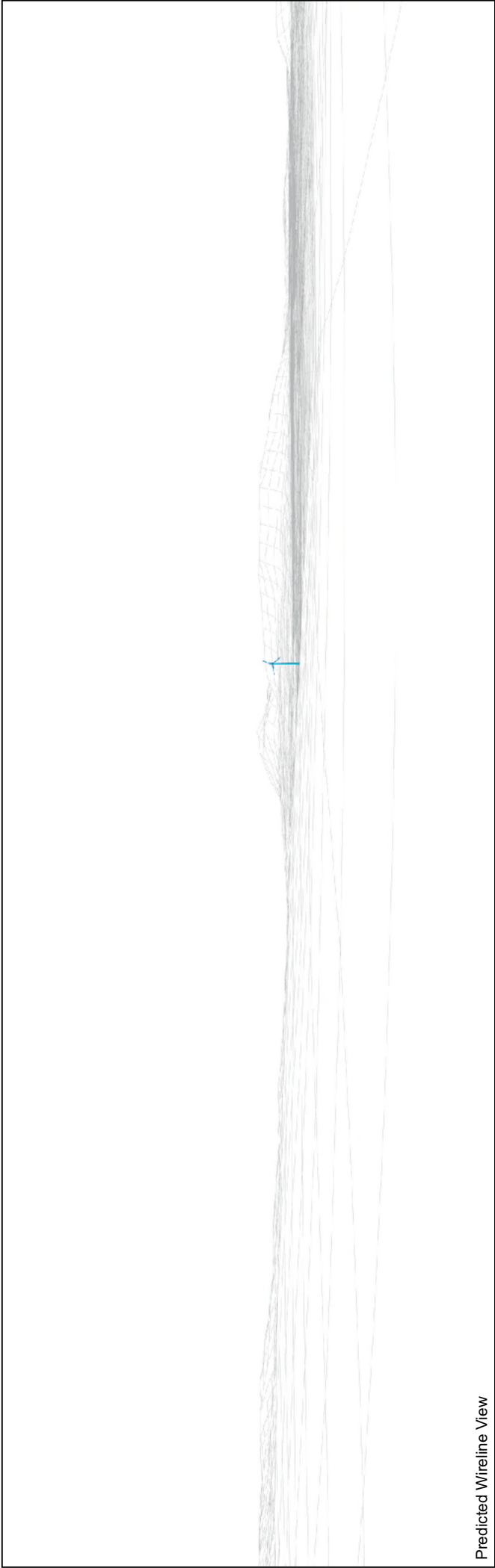


Figure 9: Photomontage and Wirelines
Viewpoint 1 - Gelvan Moor Road
Wharlawhill Farm

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

OS Reference: 305369, 702208
Ground Level Elevation: 178m AOD
Bearing to Site Centre: 075° (NE)
Distance to Nearest Turbine: 726m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 11:00

Document Number:
6436_P0091_02

Drawn by:
Checked by:
Approved by:



Single Frame



Document Number:
8438_P0091_01

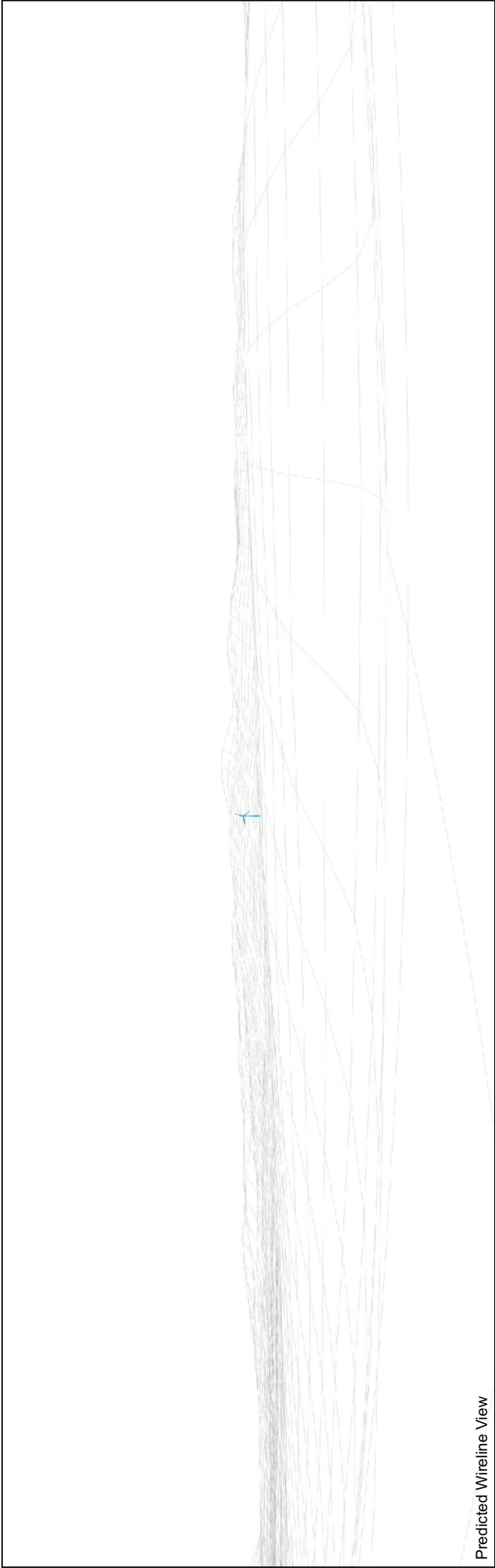
Drawn by:
Checked by:
Approved by:

OS Reference: 305369, 702208
Ground Level Elevation: 178m AOD
Bearing to Site Centre: 075° (NE)
Distance to Nearest Turbine: 726m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 11:00

Figure 9: Photomontage and Wirelines
Viewpoint 1 - Gelvan Moor Road
Whartawhill Farm



Predicted Wireline View

631



Existing View



Document Number:
8438_P0081_02

Drawn by:
Checked by:
Approved by:

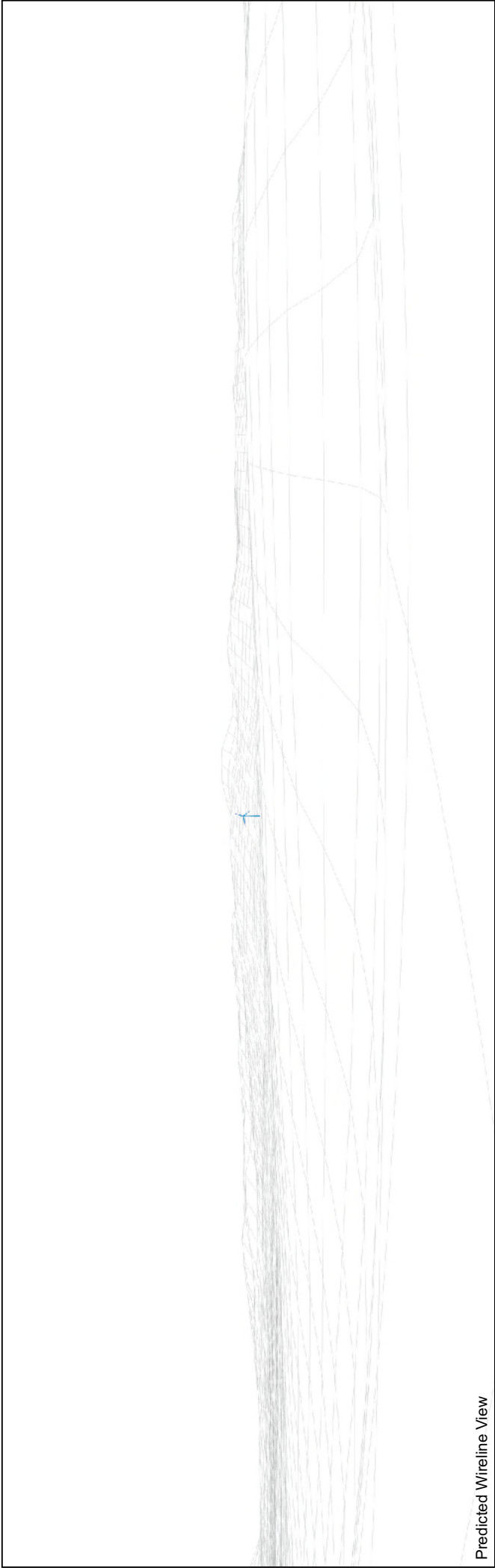
OS Reference: 305790, 703262
Ground Level Elevation: 175m AOD
Bearing to Site Centre: 160 (SSE)
Distance to Nearest Turbine: 926m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 10:30

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Figure 9: Photomontage and Wirelines
Viewpoint 2 - Cambo
Wharlawhill Farm



Predicted Wireline View

632



Predicted View



Document Number:
8438_P0091_02

Drawn by:
Checked by:
Approved by:

OS Reference: 305790, 703262
Ground Level Elevation: 175m AOD
Bearing to Site Centre: 160 (SSE)
Distance to Nearest Turbine: 926m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 10:30

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Figure 9: Photomontage and Wirelines
Viewpoint 2 - Cambo
Wharlawhill Farm



Single Frame



Document Number:
8438_P0091_01

Drawn by:
Checked by:
Approved by:

OS Reference: 305790, 703262
Ground Level Elevation: 175m AOD
Bearing to Site Centre: 160 (SSE)
Distance to Nearest Turbine: 926m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 10:30

Figure 9: Photomontage and Wirelines
Viewpoint 2 - Carnbo
Wharfawhill Farm

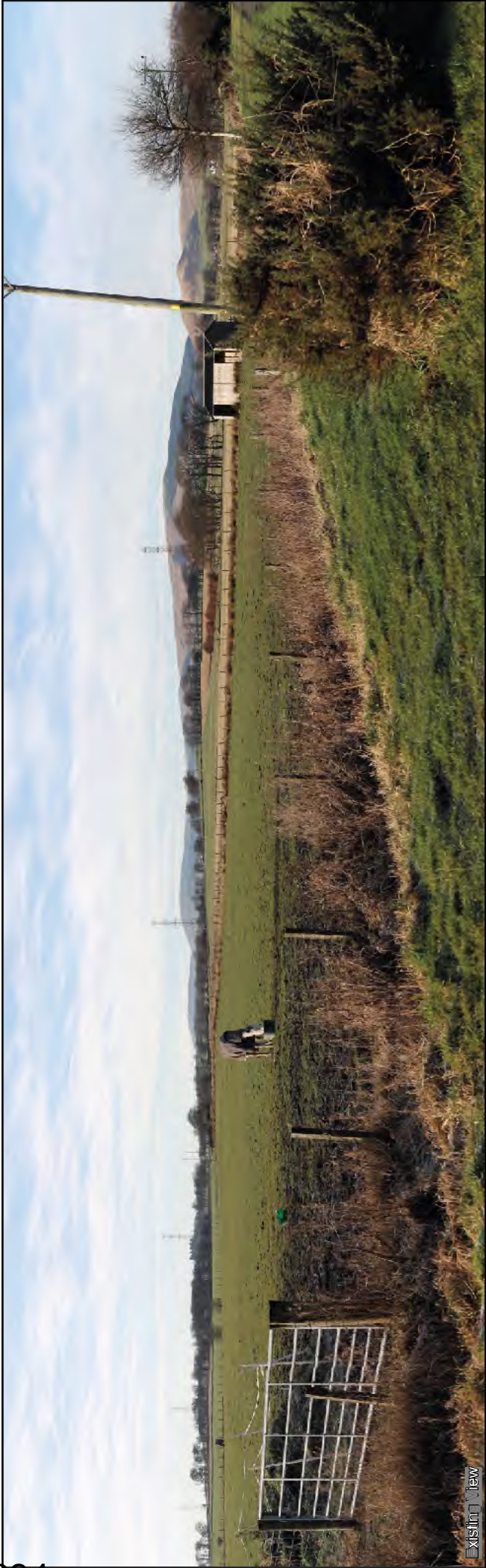
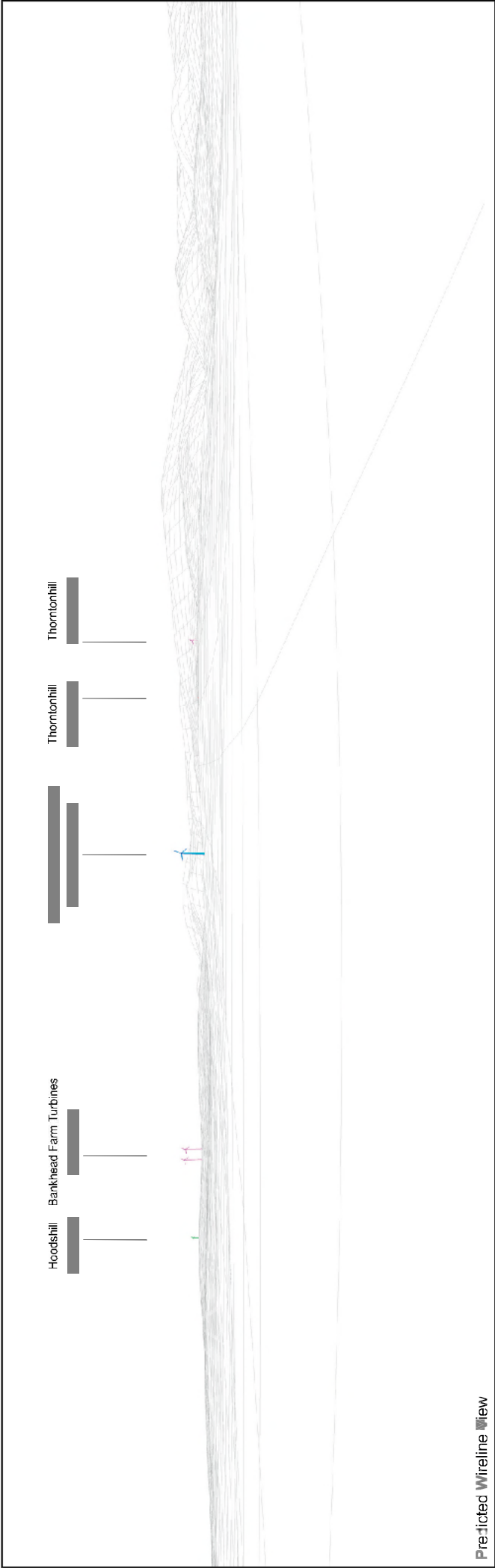


Figure 9: Photomontage and Wirelines
Viewpoint 3 - Minor Road South of Bellfield

Proposed or Consented Wind Turbines
Whatlawhill Farm (This Scheme)
20m Tip Height (green)
20m to 25m Tip Height (green)
25m to 50m Tip Height (pink)

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 05-Jan-17, 13:30

OS Reference: 307020, 702446
Ground Level Elevation: 145m AOD
Bearing to Site Centre: 266 (W)
Distance to Nearest Turbine: 947m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Drawn by:
Checked by:
Approved by:

Document Number:
6436_P0091_02

Endwind

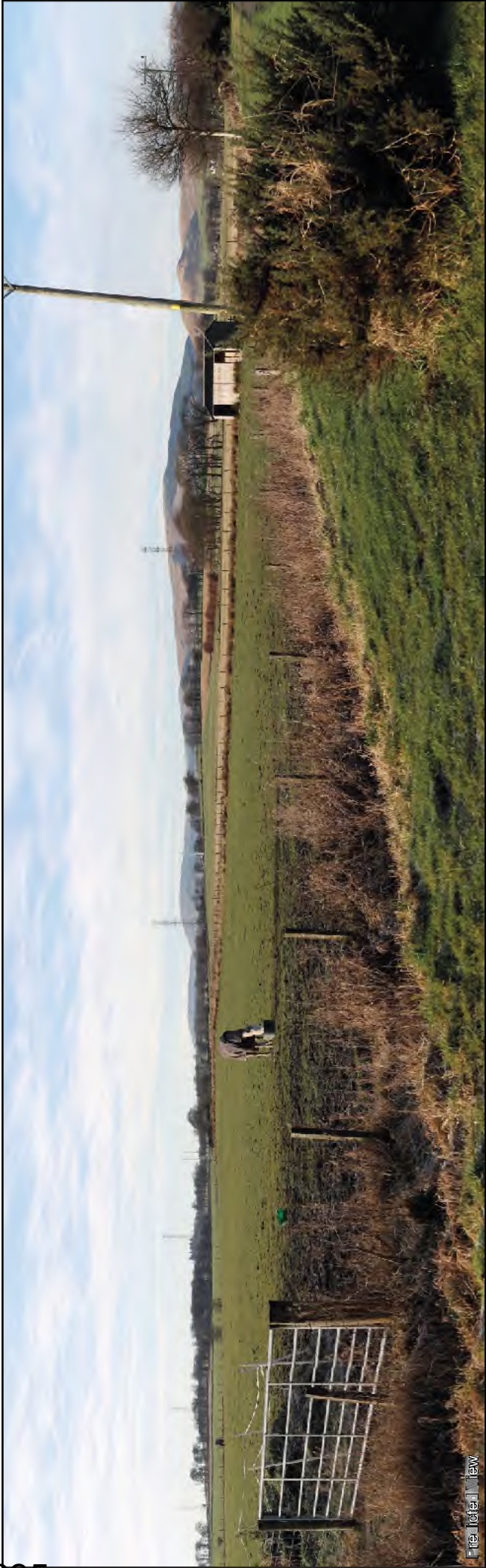
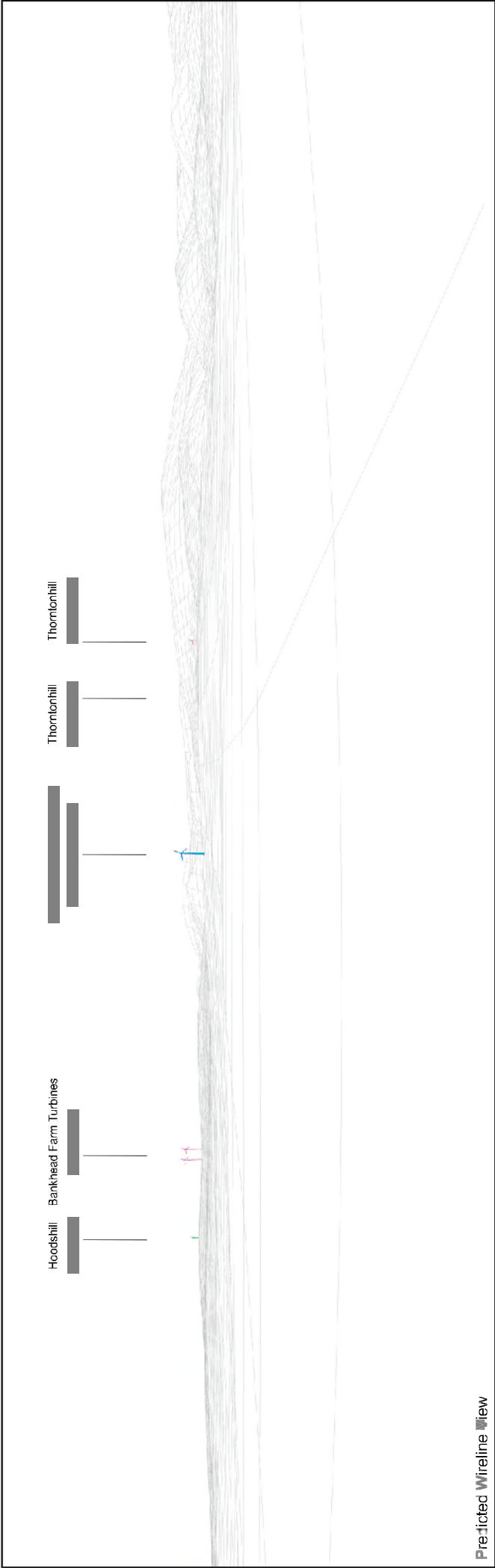


Figure 9: Photomontage and Wirelines
Viewpoint 3 - Minor Road South of Bellfield

Proposed or Consented Wind Turbines
Whatlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 05-Jan-17, 13:30

OS Reference: 307020, 702446
Ground Level Elevation: 146m AOD
Bearing to Site Centre: 266 (W)
Distance to Nearest Turbine: 947m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Drawn by:
Checked by:
Approved by:

Document Number:
6436_P0091_02

Endwind

Whatlawhill Farm



Figure 9: Photomontage and Wirelines
Viewpoint 3 - Minor Road South of Bellfield
Whartawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 05-Jan-17, 13:30

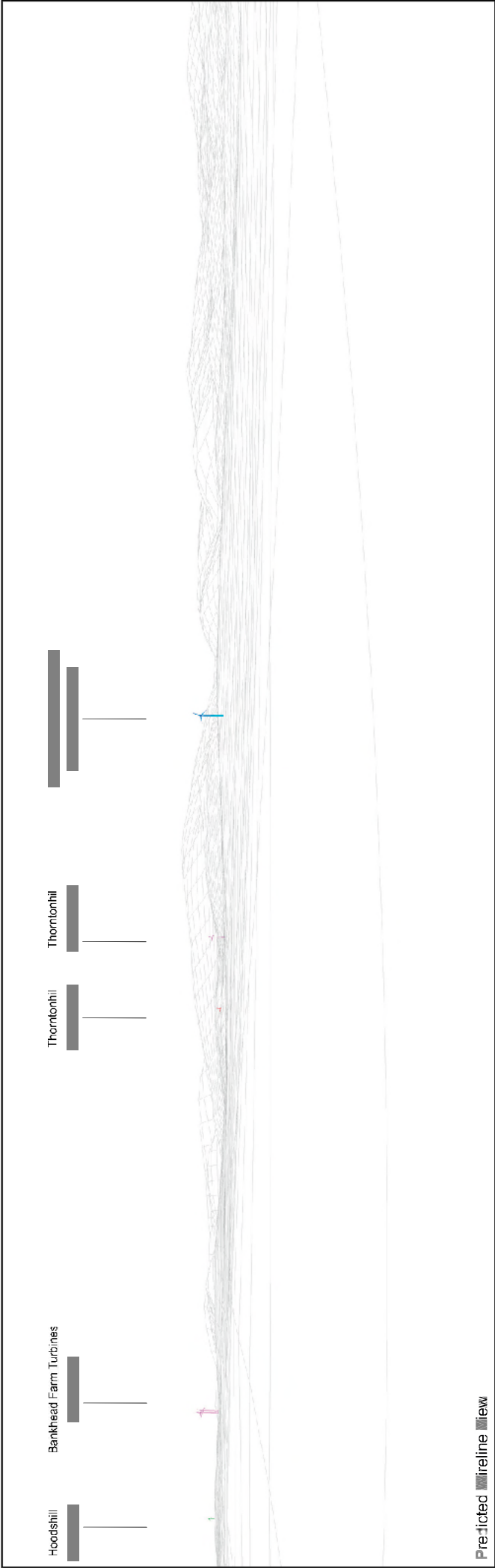
Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 300mm @ A3

OS Reference: 307020, 702446
Ground Level Elevation: 146m AOD
Bearing to Site Centre: 266 (W)
Distance to Nearest Turbine: 947m

Drawn by:
Checked by:
Approved by:

Document Number:
8438_P0091_01





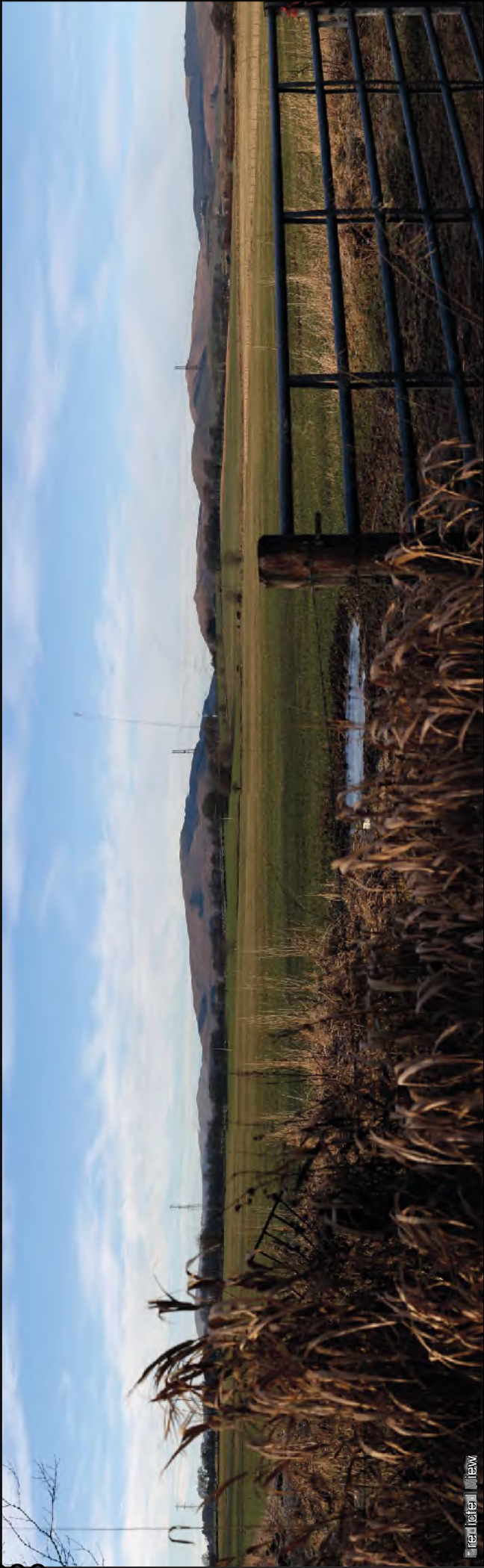
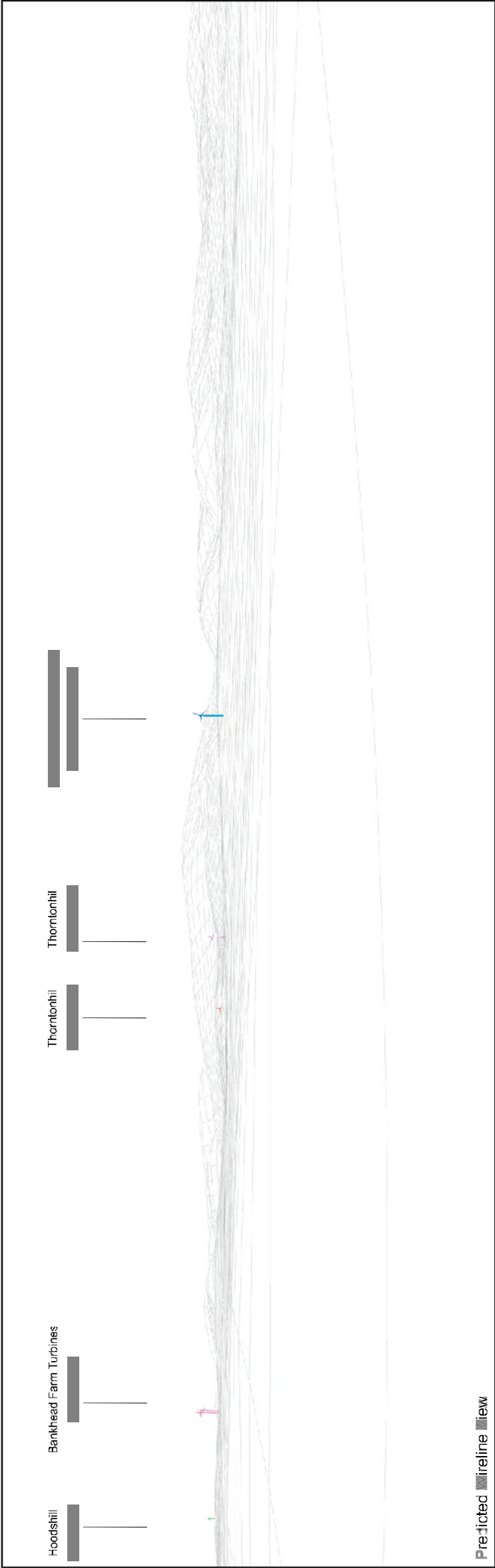


Figure 9: Photomontage and Wirelines
Viewpoint 4 - A977

Proposed or Consented Wind Turbines
Whatlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 05-Jan-17, 13:11

OS Reference: 306966, 701964
Ground Level Elevation: 144m AOD
Bearing to Site Centre: 295(WNW)
Distance to Nearest Turbine: 983m

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Drawn by:
Checked by:
Approved by:

Document Number:
6436_P0091_02

Whatlawhill Farm



Figure 9: Photomontage and Wirelines
Viewpoint 4 - A977
Whartawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 05-Jan-17, 13:11

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

OS Reference: 306966, 701964
Ground Level Elevation: 144m AOD
Bearing to Site Centre: 295(WNW)
Distance to Nearest Turbine: 983m

Drawn by:
Checked by:
Approved by:

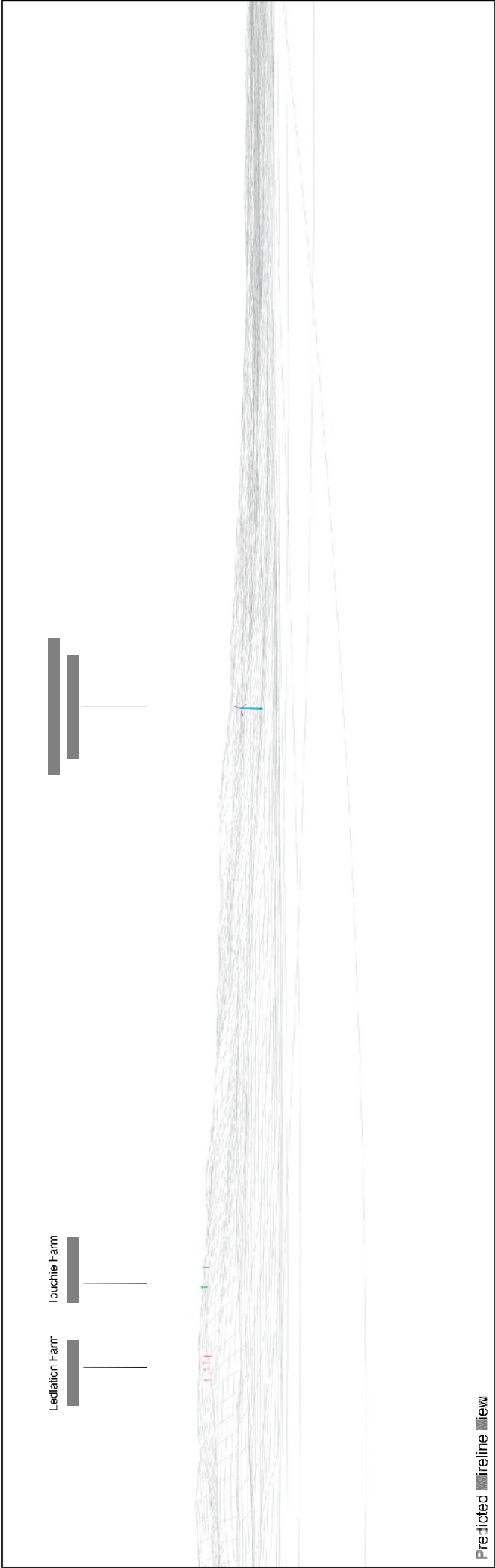


Figure 9: Photomontage and Wirelines
Viewpoint 5 - Galvan

Proposed or Consented Wind Turbines
Whatlawn Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

OS Reference: 305352, 701626
Ground Level Elevation: 187m AOD
Bearing to Site Centre: 044 (NE)
Distance to Nearest Turbine: 1.04km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 16:20

Whatlawn Farm

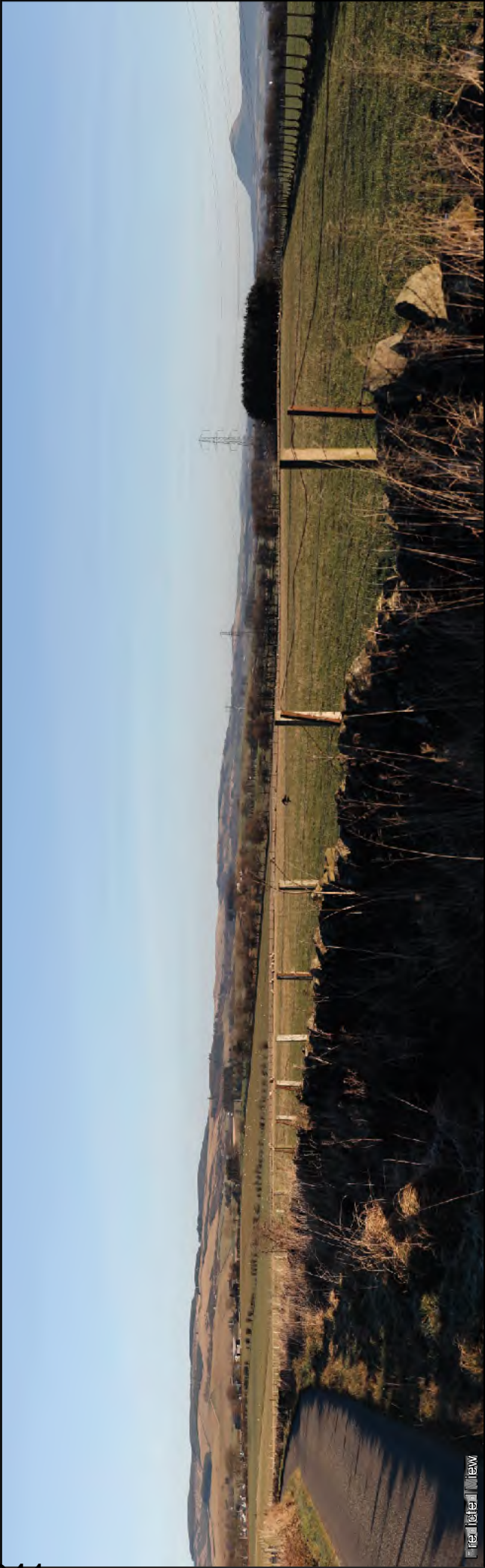
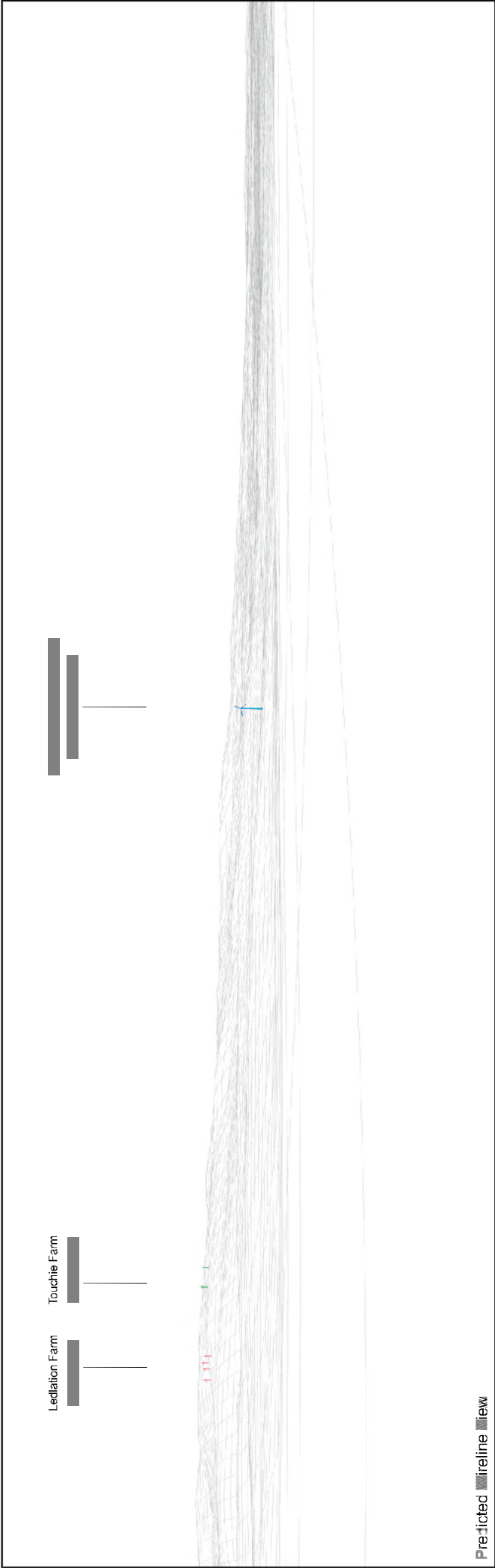




Figure 9: Photomontage and Wirelines
Viewpoint 5 - Gelvan
Whartawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 16:20

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

OS Reference: 305352, 701626
Ground Level Elevation: 187m AOD
Bearing to Site Centre: 044 (NE)
Distance to Nearest Turbine: 1.04km

Drawn by:
Checked by:
Approved by:

Document Number:
8438_P0091_01



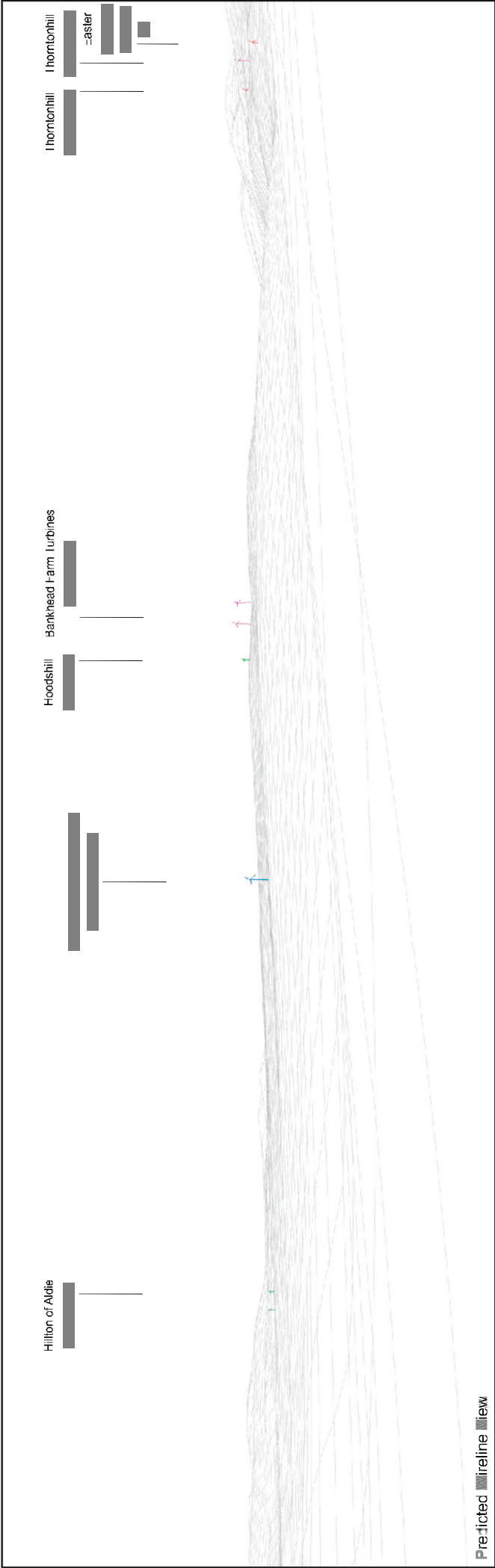


Figure 9: Photomontage and Wirelines
Viewpoint 6 - A91

Proposed or Consented Wind Turbines
Whatlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 12:45

OS Reference: 306699, 703281
Ground Level Elevation: 164m AOD
Bearing to Site Centre: 221 (SW)
Distance to Nearest Turbine: 1.22km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Document Number:
6436_P0091_02

Whatlawhill Farm

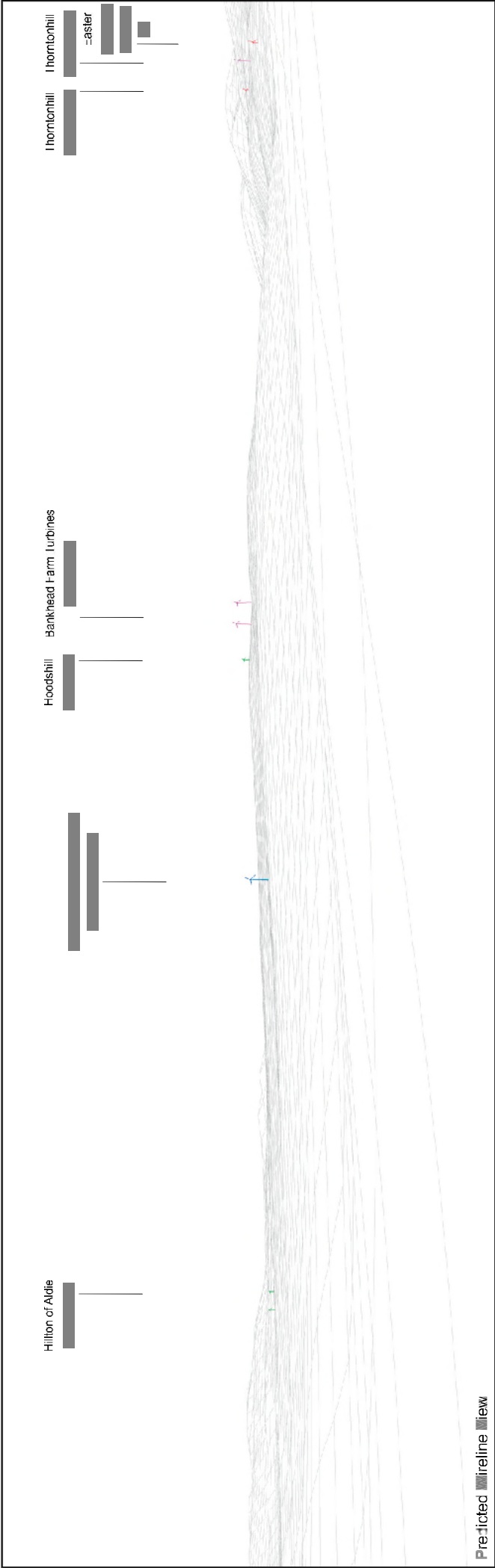


Figure 9: Photomontage and Wirelines
Viewpoint 6 - A91
Whatlawhill Farm
Proposed or Consented Wind Turbines
Whatlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height
Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 12:45
OS Reference: 306699, 703281
Ground Level Elevation: 164m AOD
Bearing to Site Centre: 221 (SW)
Distance to Nearest Turbine: 1.22km
Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3
Document Number: 6436_P0091_02
Bridgwind



Figure 9: Photomontage and Wirelines
Viewpoint 6 - A91
Wharfawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 12-Jan-17, 12:45

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

OS Reference: 306899, 703281
Ground Level Elevation: 164m AOD
Bearing to Site Centre: 221 (SW)
Distance to Nearest Turbine: 1.22km

Drawn by:
Checked by:
Approved by:

Document Number:
8438_P0081_01



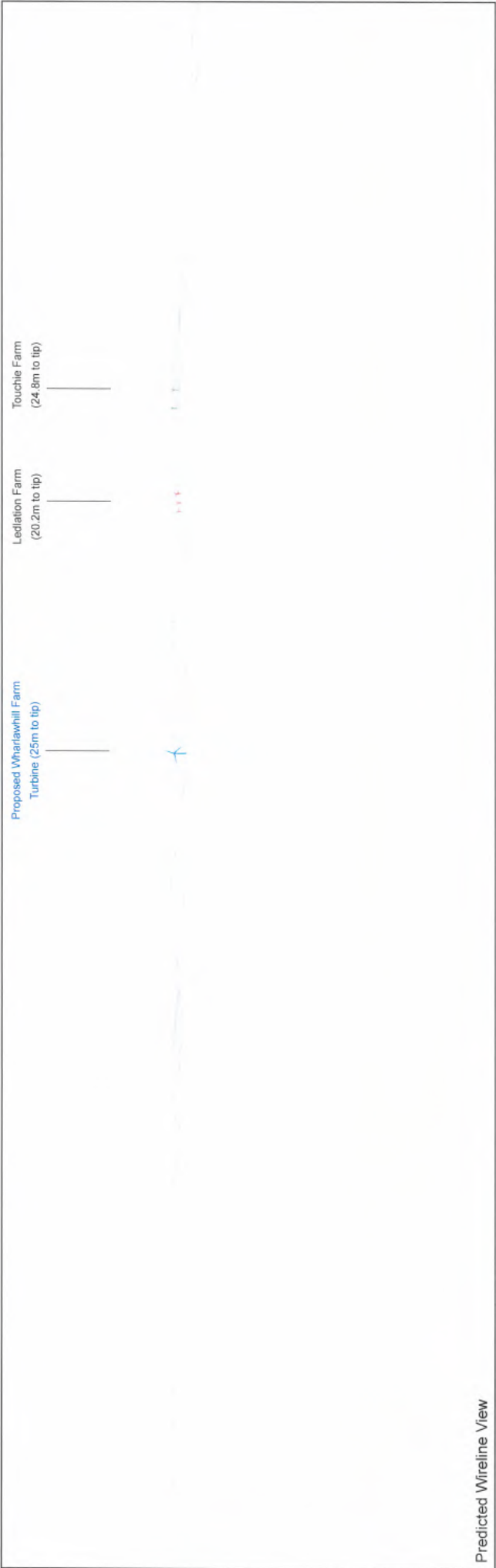


Figure 9: Photomontage and Wirelines
Viewpoint 7 - A977 layby near North Kiduff

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 12.20

OS Reference: 306282, 701545
Ground Level Elevation: 151m AOD
Bearing to Site Centre: 357 (NNW)
Distance to Nearest Turbine: 0.86km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Document Number:
6406_P0051_02

Wharlawhill Farm

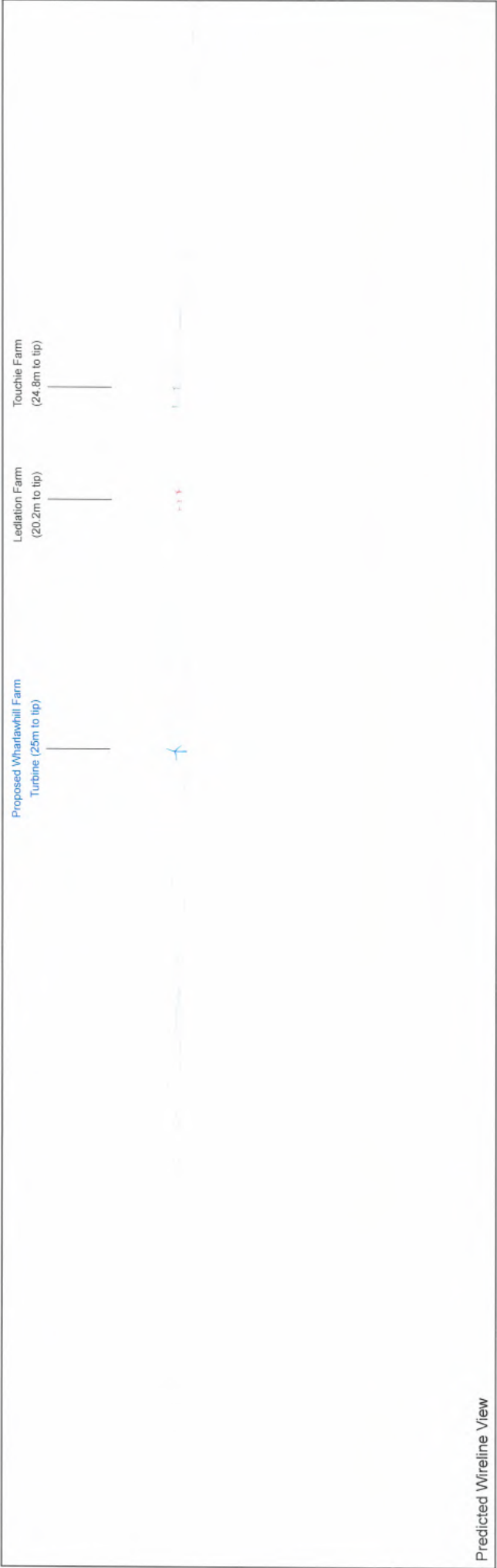


Figure 9: Photomontage and Wirelines
Viewpoint 7 - A977 layby near North Kilduff

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 12.20

OS Reference: 306282, 701545
Ground Level Elevation: 151m AOD
Bearing to Site Centre: 357 (NNW)
Distance to Nearest Turbine: 0.86km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Drawn by: []
Checked by: []
Approved by: []

Document Number:
6456_P0091_02

SoftWind

Wharlawhill Farm



Figure 9: Photomontage and Wirelines
Viewpoint 7 - A977 layby near North Kilduff
Wharlawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 12.20

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

OS Reference: 306282, 701545
Ground Level Elevation: 151m AOD
Bearing to Site Centre: 357 (NNW)
Distance to Nearest Turbine: 0.86km

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Checked by:	
Approved by:	

Document Number:
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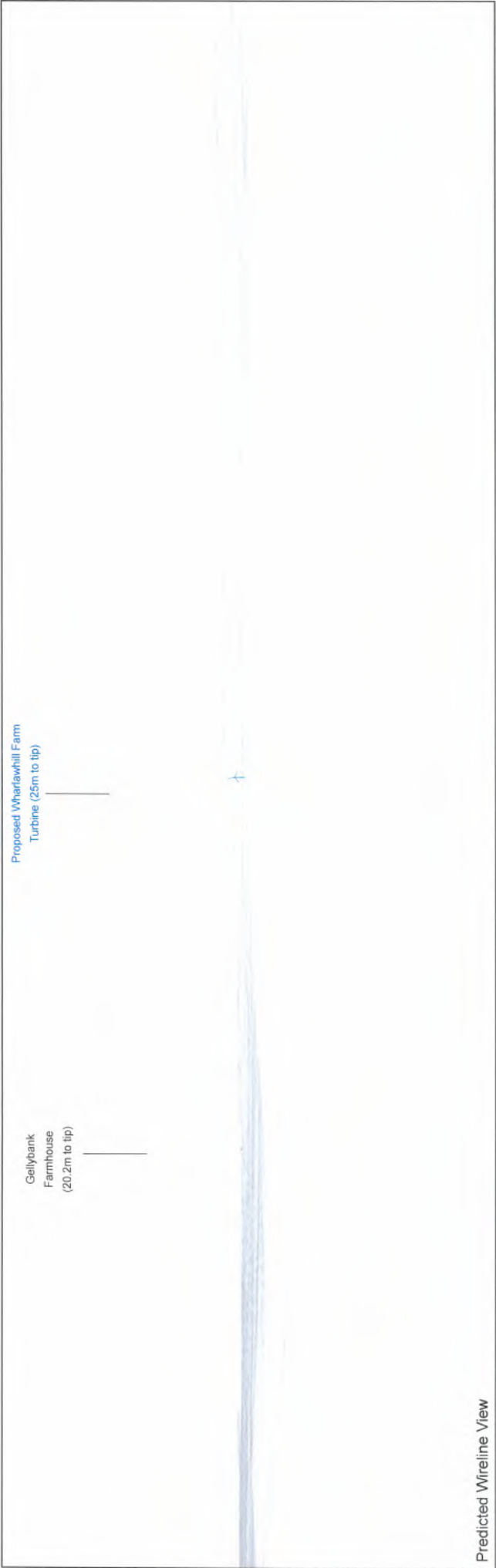


Figure 9: Photomontage and Wirelines

Viewpoint 8 - Core Path North of Cambo (Ochil Hills Special Landscape Area)

Wharlawhill Farm

Proposed or Consented Wind Turbines

Wharlawhill Farm (This Scheme)

20m Tip Height

20m to 25m Tip Height

25m to 50m Tip Height

Camera Lens: 50mm

Camera/Viewer Height: 1.7m

Date of Photograph: 20-Jan-18, 16:27

Hub Height: 18.5m

Maximum Tip Height: 25m

Horizontal Field of View: 75°

Principle Distance: 300mm @ A3

OS Reference: 305258, 703362

Ground Level Elevation: 188m AOD

Bearing to Site Centre: 140° (SE)

Distance to Nearest Turbine: 1.28km

Drawn by:

Checked by:

Approved by:

Document Number:

6436_P0391_02



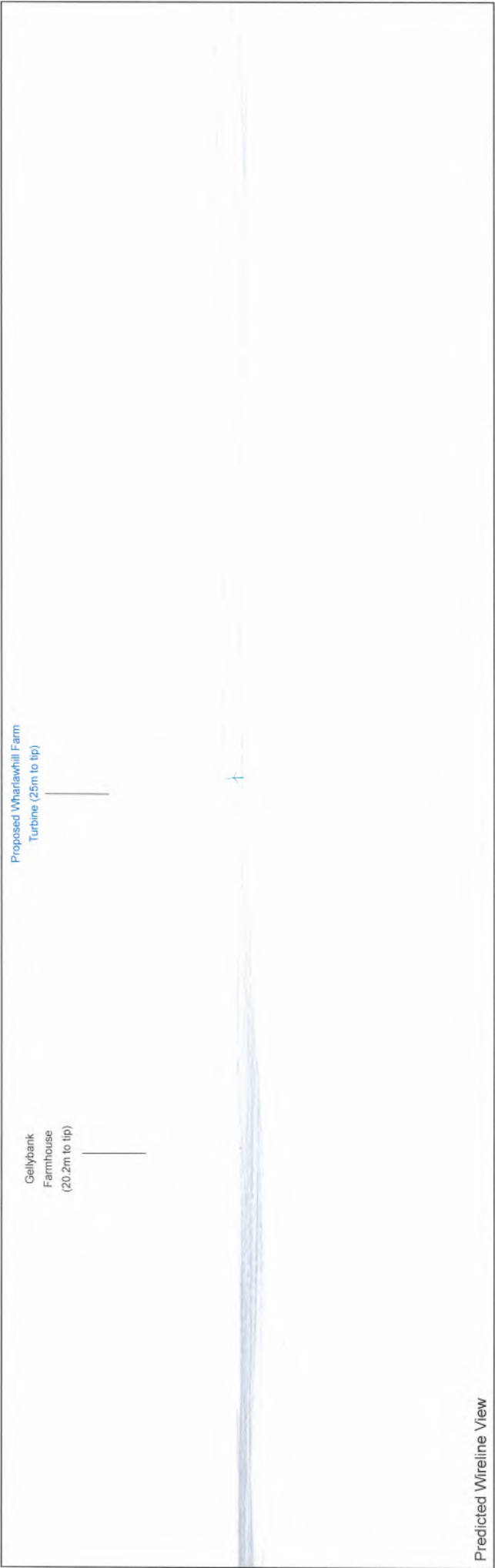


Figure 9: Photomontage and Wirelines

Viewpoint 8 - Core Path North of Carnbo (Ochil Hills Special Landscape Area)

Wharlawhill Farm

Proposed or Consented Wind Turbines

Wharlawhill Farm (This Scheme)

20m Tip Height

20m to 25m Tip Height

25m to 50m Tip Height

Camera Lens: 50mm

Camera/Viewer Height: 1.7m

Date of Photograph: 20-Jan-18, 16:27

Hub Height: 18.5m

Maximum Tip Height: 25m

Horizontal Field of View: 75°

Principle Distance: 300mm @ A3

OS Reference: 305258, 703362

Ground Level Elevation: 188m AOD

Bearing to Site Centre: 140 (SE)

Distance to Nearest Turbine: 1.28km

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Checked by: _____

Approved by: _____

Document Number: 6436_P0091_02





Single Frame

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Checked by:	
Approved by:	

OS Reference: 305258, 703362
Ground Level Elevation: 188m AOD
Bearing to Site Centre: 140° (SE)
Distance to Nearest Turbine: 1.28km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 20-Jan-18, 16:27

Figure 9: Photomontage and Wirelines
Viewpoint 8 - Core Path North of Cambo (Ochil Hills Special
Landscape Area)
Wharlawhill Farm

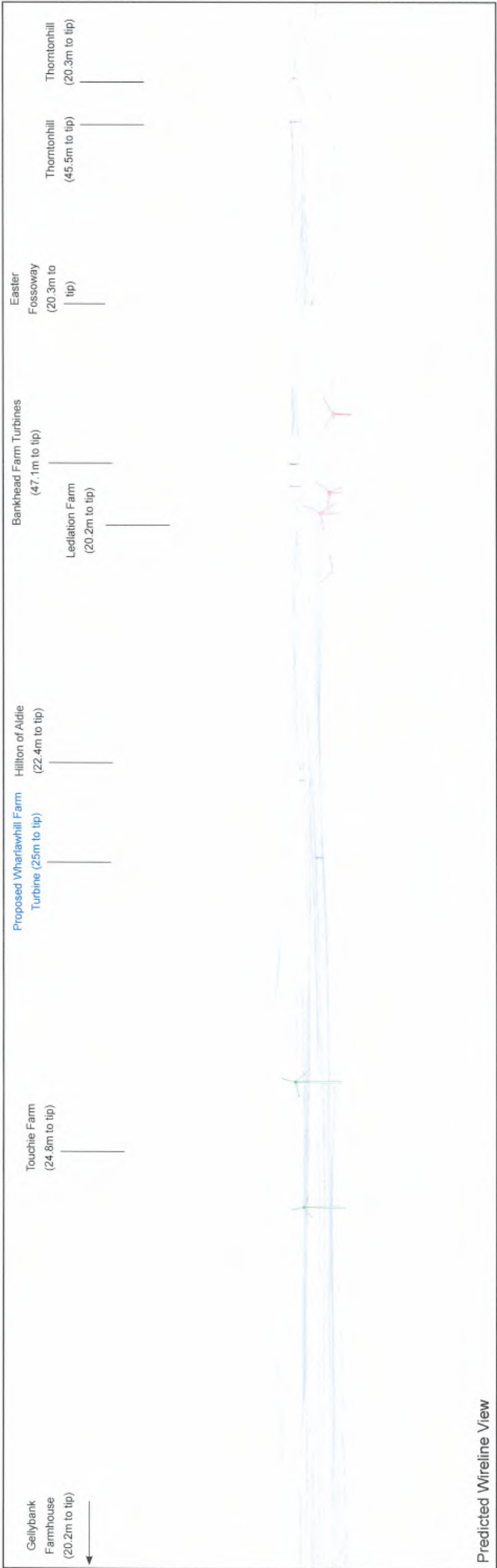


Figure 10: Photomontage and Wirelines
Viewpoint 9 - Core Path north of Arlick Hill
(Ochil Hills Special Landscape Area)
Wharlawhill Farm

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 18:22

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

OS Reference: 306417, 705964
Ground Level Elevation: 319m AOD
Bearing to Site Centre: 186 (SSW)
Distance to Nearest Turbine: 3.6km

Drawn by: []
Checked by: []
Approved by: []

Document Number:
6436_P0001_02

Earthwind

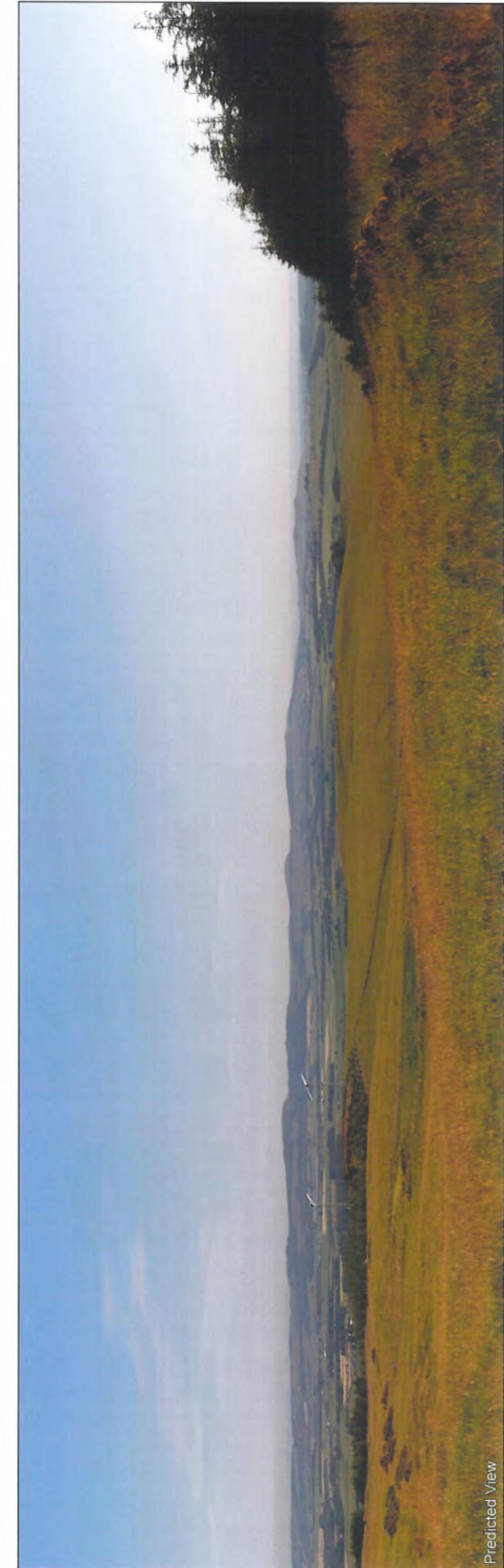
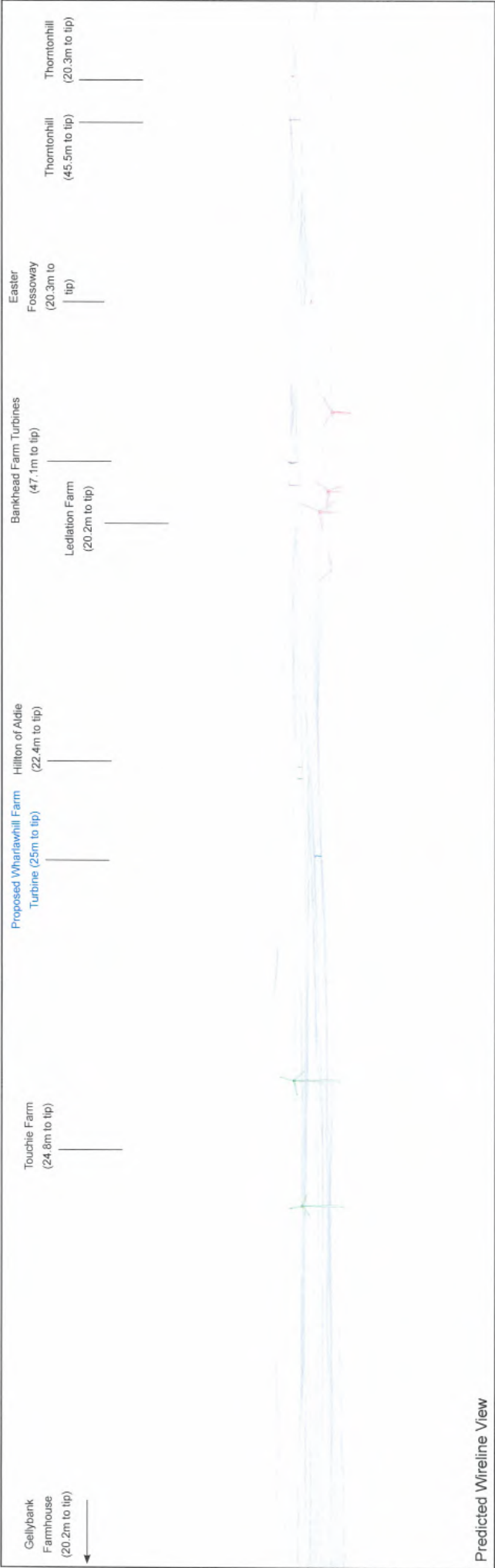


Figure 10: Photomontage and Wirelines
Viewpoint 9 - Core Path north of Arlick Hill
(Ochil Hills Special Landscape Area)
Wharriawhill Farm

Proposed or Consented Wind Turbines
Wharriawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

OS Reference: 306417, 705964
Ground Level Elevation: 319m AOD
Bearing to Site Centre: 186 (SSW)
Distance to Nearest Turbine: 3.6km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 18.22

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Approved by:	

Document Number:
6436_P0091_02

Brüwind



Figure 10: Photomontage and Wirelines
Viewpoint 9 - Core Path north of Arlick Hill
(Ochil Hills Special Landscape Area)
Wharlawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 18.22

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

OS Reference: 306417, 705964
Ground Level Elevation: 319m AOD
Bearing to Site Centre: 186 (SSW)
Distance to Nearest Turbine: 3.6km

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Checked by	
Approved by	

Document Number:
6436_P0391_01



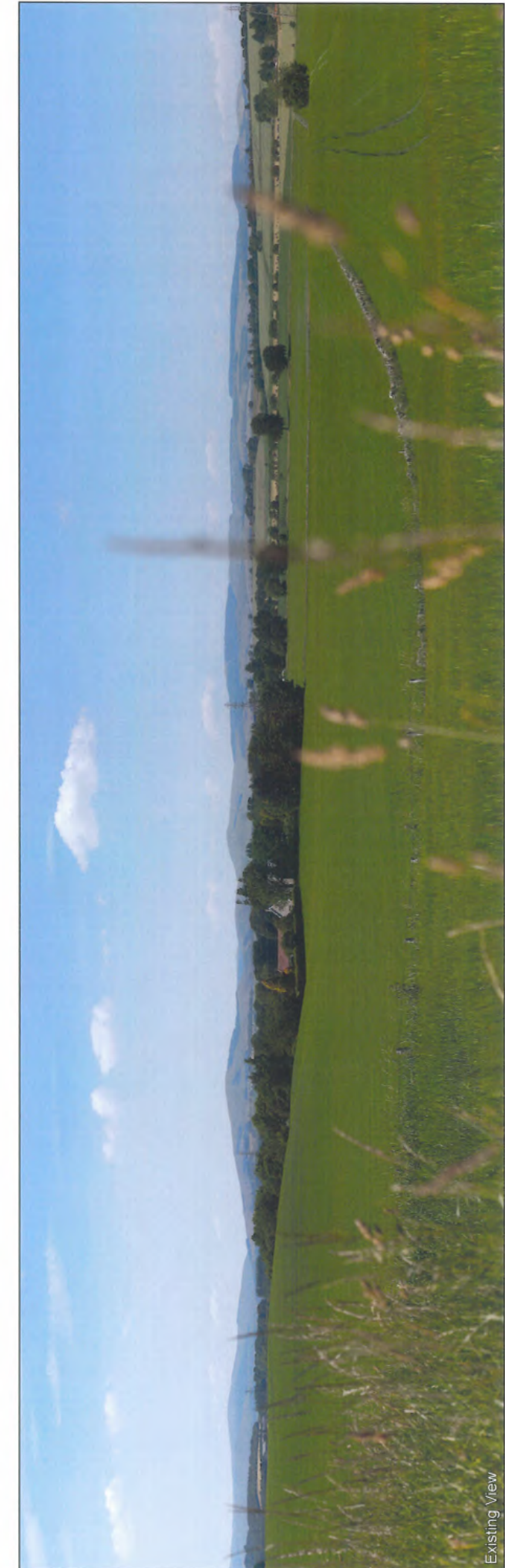
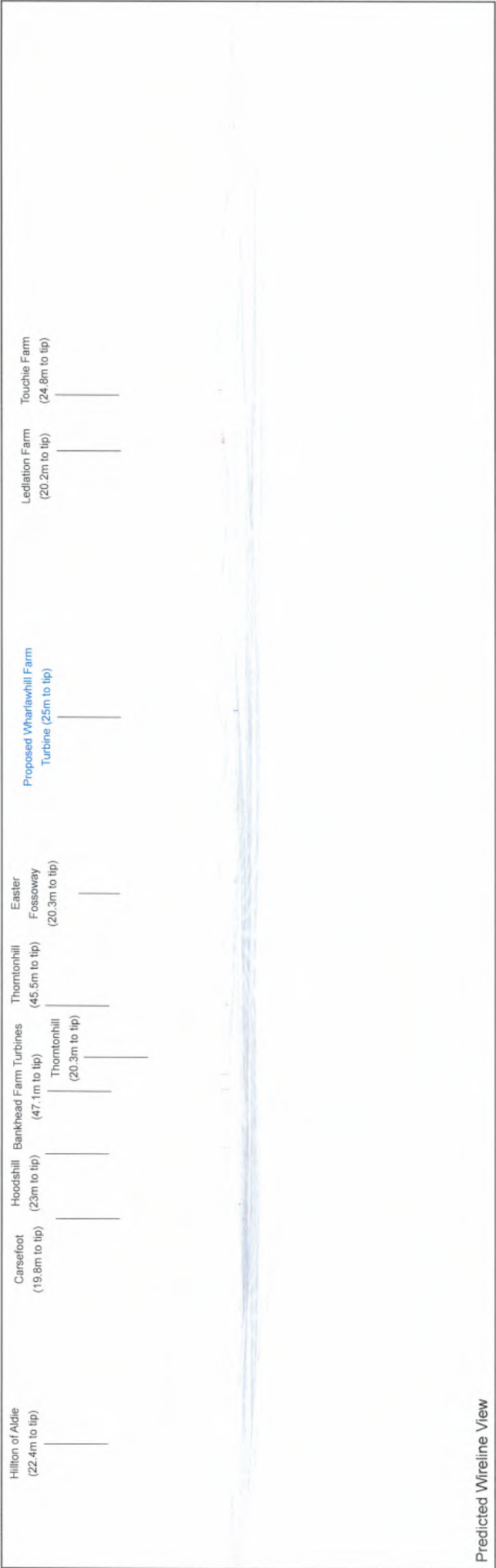


Figure 10: Photomontage and Wirelines
Viewpoint 10 - Core Path / Minor Road near B9097 (Cleish Hills)
Wharlawhill Farm

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 15:00

OS Reference: 309010, 698095
Ground Level Elevation: 132m AOD
Bearing to Site Centre: 325 (NW)
Distance to Nearest Turbine: 5.19km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Drawn by:
Checked by:
Approved by:

Document Number:
6436_P0091_02



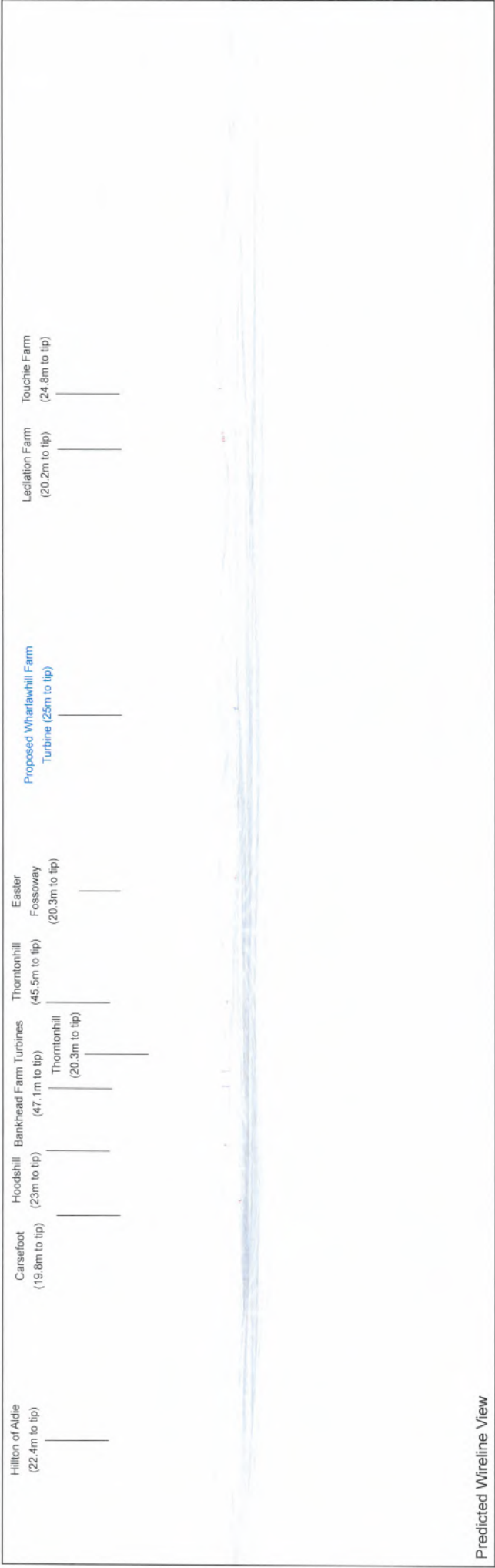


Figure 10: Photomontage and Wirelines
Viewpoint 10 - Core Path / Minor Road near B9097 (Cleish Hills)
Wharlawhill Farm

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 15:00

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

OS Reference: 309010, 698095
Ground Level Elevation: 132m AOD
Bearing to Site Centre: 325 (NW)
Distance to Nearest Turbine: 5.19km

Drawn By:
Checked By:
Approved By:

Document Number:
6436_P0091_02

Endward



Single Frame



Document Number:
6436_P0091_01

Drawn by:	
Checked by:	
Approved by:	

OS Reference: 309010, 698095
Ground Level Elevation: 132m AOD
Bearing to Site Centre: 325 (NW)
Distance to Nearest Turbine: 5.19km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 28-Jun-18, 15:00

Figure 10: Photomontage and Wirelines
Viewpoint 10 - Core Path / Minor Road near B5097
(Cleish Hills)
Wharlawhill Farm



Legend

- ▲ Indicative Turbine Location
- ★ Viewpoint Locations
- Operational and approved wind turbines within 5km
- Land Boundary
- Distance Bands out to 5km
- Core Paths
- Special Landscape Area
- Zone of Theoretical Visibility (viewer height 2m)
- Visibility to 25m Blade Tip

Note:
Please refer to figure 6 for further information on ZTV's.
This map displays sourced datasets licensed by:
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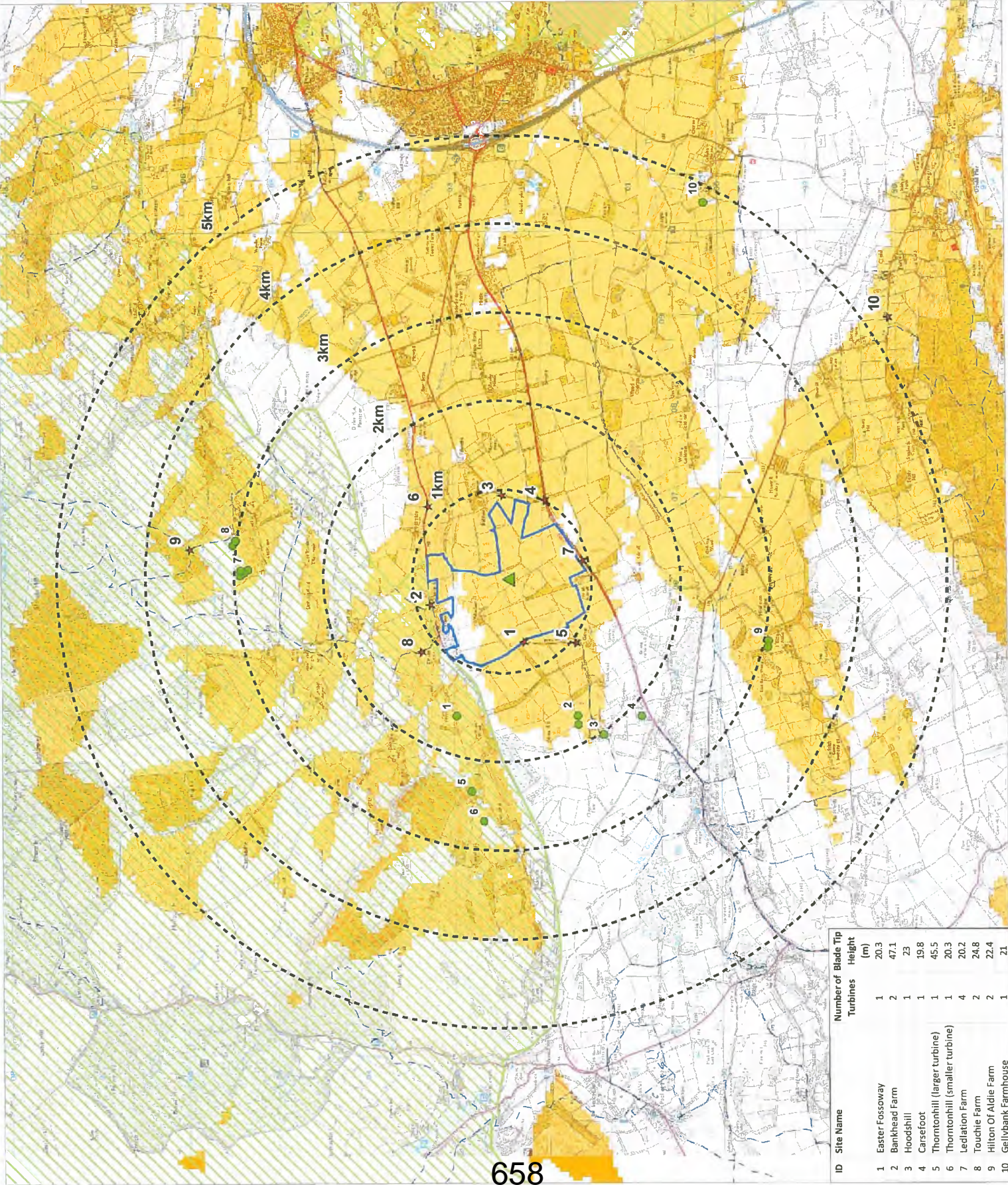
Figure: 10
Title: Cumulative Plan



Drawn by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Ref: 6436_PD248_04 Date: July 2018

BR1106 Wharlawhill Farm



ID	Site Name	Number of Turbines	Blade Tip Height (m)
1	Easter Fossoway	1	20.3
2	Bankhead Farm	2	47.1
3	Hoodshill	1	23
4	Carsefoot	1	19.8
5	Thorntonhill (larger turbine)	1	45.5
6	Thorntonhill (smaller turbine)	1	20.3
7	Ledlath Farm	4	20.2
8	Touchie Farm	2	24.8
9	Hilton Of Aldie Farm	2	22.4
10	Gellybank Farmhouse	1	21

TCP/11/16(550) – 18/00473/FLL – Erection of a wind turbine and associated works on land south east of Warlawhill Farm, Carnbo, Kinross

PLANNING DECISION NOTICE

REPORT OF HANDLING

REFERENCE DOCUMENTS *(part included in applicant's submission, see pages 980-997)*

PERTH AND KINROSS COUNCIL

Ecotricity
Mrs Laura White
Lion House
Rowcroft
Stroud
GL5 3BY

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 3rd May 2018

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **18/00473/FLL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 29th March 2018 for permission for **Erection of a wind turbine and associated works Land South East Of Wharlawhill Farm Carnbo Kinross KY13 0NZ** for the reasons undernoted.

Interim Development Quality Manager

Reasons for Refusal

- 1 The proposal by virtue of the location within a flat open landscape ensures that the site would be visible from viewpoints across a significant part of the Loch Leven Basin landscape character area. The scale of the proposed wind turbine would result in unacceptable adverse landscape impact having regard to landscape character and setting within the immediate landscape and wider landscape character types contrary to Policies ER1A (a), ER6 (a) (b) of the Perth and Kinross Local Development Plan 2014.
2. The application is contrary to Perth and Kinross Council's Supplementary Guidance on Landscape June 2015 as the proposed visual impact will adversely affect the special landscape quality of the designated Special Landscape Area of the Ochill Hills.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Notes

The plans relating to this decision are listed below and are displayed on Perth and Kinross Council's website at www.pkc.gov.uk "Online Planning Applications" page

Plan Reference

18/00473/1	18/00473/20	18/00473/39
18/00473/2	18/00473/21	18/00473/40
18/00473/3	18/00473/22	18/00473/41
18/00473/4	18/00473/23	18/00473/42
18/00473/5	18/00473/24	18/00473/43
18/00473/6	18/00473/25	
18/00473/7	18/00473/26	
18/00473/8	18/00473/27	
18/00473/9	18/00473/28	
18/00473/10	18/00473/29	
18/00473/11	18/00473/30	
18/00473/12	18/00473/31	
18/00473/13	18/00473/32	
18/00473/14	18/00473/33	
18/00473/15	18/00473/34	
18/00473/16	18/00473/35	
18/00473/17	18/00473/36	
18/00473/18	18/00473/37	
18/00473/19	18/00473/38	

REPORT OF HANDLING

DELEGATED REPORT

Ref No	18/00473/FLL	
Ward No	P8- Kinross-shire	
Due Determination Date	28.05.2018	
Case Officer	John Williamson	
Report Issued by		Date
Countersigned by		Date

PROPOSAL: Erection of a wind turbine and associated works

LOCATION: Land South East Of Wharlawhill Farm Carnbo Kinross
KY13 0NZ

SUMMARY:

This report recommends **refusal** of the application as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

DATE OF SITE VISIT: 12 April 2018

SITE PHOTOGRAPHS





BACKGROUND AND DESCRIPTION OF PROPOSAL

Full planning consent is sought for the erection of a wind turbine with a height to blade tip of 25m at Wharlawhill Farm to the south of Carnbo. This application is a follow up to a recently refused application for two turbines on a similar site (17/01902/FLL), each of which had a blade tip height of 20.2m. The proposal is therefore to reduce the number of turbines from 2 to 1 but to increase the blade tip height from 20.2m to 25m. The site is located on part of an undulating field within the Wharlawhill Farm unit and is located to the south east of the main farm building group. The site is located equidistant between the A91 to the north and the A977 to the south. The A91 and village of Carnbo are located approximately 870m from the site and the A977 is located 865m to the south. These roads provide links to the east towards the M90 and Fife and to the west towards Clackmannanshire.

The site selected for the proposed turbine consists of land located at an elevation of approximately 170m above Ordnance Datum (AOD). The turbine is proposed on the south facing slope of Wharlawhill which rises to the north west towards the farm buildings which are the focal point for the surrounding farm land. For reference the A91 sits at an AOD of approximately 173m and the A977 at an AOD of 144m. The landscape is generally undulating but appears as a valley floor within the wider landscape with the imposing Ochill Hills rising to the north and the Cleish Hills to the south. There is an existing national grid electrical line and pylons (35m in height) which runs south west to north east across the landscape to the immediate south of the application site. There are also two turbines located to the west at White Hill which were approved in 2011 (11/02053/FLL).

The site falls within the Loch Leven Catchment Area and the Ochill Hill Special Landscape Area is located to the north beyond the A91 public road. There are no other ecological, historical or archaeological interests at the site.

The proposed turbine is 25 m in height to blade tip with maximum hub height of 18m and a blade diameter of 13.1m. It is proposed to be served by the existing access track serving the farm. The turbine is proposed to generate 15kw and is proposed to provide electricity to the farm with excess exported to the national grid. The turbine is proposed to be delivered along the A977 using a single flat bed HGV.

SITE HISTORY

93/00016/PN ERECTION OF AGRICULTURAL BUILDING AT 5 October
1993 Application Permitted

93/00442/FUL FORMATION OF A BELOW-GROUND SLURRY STORE AT
WHARLAWHILL 31 May 1993 Application Permitted

10/01845/FLL Installation of an underground slurry tank 7 February 2011
Application Permitted

17/01902/FLL Erection of 2no. wind turbines and associated works 8
December 2017 Application Refused

PRE-APPLICATION CONSULTATION

Pre application Reference: None

NATIONAL POLICY AND GUIDANCE

National Planning Framework

The third National Planning Framework for Scotland (NPF) was published in June 2014, setting out a strategy for Scotland's spatial development for the next 20 – 30 years. Under the Planning etc. (Scotland) Act 2006 this is now a statutory document and material consideration in any planning application. The document provides a national context for development plans and planning decisions as well as informing the on-going programmes of the Scottish Government, public agencies and local authorities.

Scottish Planning Policy 2014

The Scottish Planning Policy (SPP) was published on 23 June 2014. It sets out national planning policies which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land. The SPP promotes consistency in the application of policy across Scotland whilst allowing sufficient flexibility to reflect local circumstances. It directly relates to:

- the preparation of development plans;

- the design of development, from initial concept through to delivery; and
- the determination of planning applications and appeals.

The following sections of SPP (2014) are of particular importance in the assessment of this application:-

- Paragraph : 24 - 35 Sustainability
- Paragraph : 74 – 83 Promoting Rural Development
- Paragraphs : 135 – 151 Valuing the Historic Environment
- Paragraphs : 152 -174 Delivering Heat and Electricity
- Paragraphs : 193 -218 Valuing the Natural Environment

The following Scottish Government Planning Advice Notes (PAN) are also of interest:-

- PAN 1/2011 Planning and Noise
- PAN 2/2011 Planning and Archaeology
- PAN 1/2013 Environmental Impact Assessment
- PAN 40 Development Management
- PAN 51 Planning, Environmental Protection and Regulation
- PAN 60 Planning for Natural Heritage

Onshore wind turbines – Online Renewables Advice December 2013

Provides specific topic guidance to Planning Authorities from Scottish Government.

The topic guidance includes encouragement to planning authorities to:

- develop spatial strategies for wind farms;
- ensure that Development Plan Policy provide clear guidance for design, location, impacts on scale and character of landscape; and the assessment of cumulative effects.
- involve key consultees including SNH in the application determination process;
- direct the decision maker to published best practice guidance from SNH in relation to visual assessment, siting and design and cumulative impacts.

DEVELOPMENT PLAN

The Development Plan for the area comprises the TAYplan Strategic Development Plan 2016-2036 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2016 – 2036 - Approved October 2017

Whilst there are no specific policies or strategies directly relevant to this proposal the overall vision of the TAYplan should be noted. The vision states

“By 2036 the TAYplan area will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice where more people choose to live, work, study and visit, and where businesses choose to invest and create jobs.”

Perth and Kinross Local Development Plan 2014 – Adopted February 2014

The Local Development Plan is the most recent statement of Council policy and is augmented by Supplementary Guidance.

The principal policies are, in summary:

Policy EP8 - Noise Pollution

There is a presumption against the siting of proposals which will generate high levels of noise in the locality of noise sensitive uses, and the location of noise sensitive uses near to sources of noise generation.

Policy PM1A - Placemaking

Development must contribute positively to the quality of the surrounding built and natural environment, respecting the character and amenity of the place. All development should be planned and designed with reference to climate change mitigation and adaption.

Policy PM1B - Placemaking

All proposals should meet all eight of the placemaking criteria.

Policy TA1B - Transport Standards and Accessibility Requirements

Development proposals that involve significant travel generation should be well served by all modes of transport (in particular walking, cycling and public transport), provide safe access and appropriate car parking. Supplementary Guidance will set out when a travel plan and transport assessment is required.

Policy CF2 - Public Access

Developments will not be allowed if they have an adverse impact on any core path, disused railway line, asserted right of way or other well used route, unless impacts are addressed and suitable alternative provision is made.

Policy HE1A - Scheduled Monuments

There is a presumption against development which would have an adverse effect on the integrity of a Scheduled Monument and its setting, unless there are exceptional circumstances.

Policy HE2 - Listed Buildings

There is a presumption in favour of the retention and sympathetic restoration, correct maintenance and sensitive management of listed buildings to enable them to remain in active use. The layout, design, materials, scale, siting and use of any development which will affect a listed building or its setting should be appropriate to the building's character, appearance and setting.

Policy HE3A - Conservation Areas

Development within a Conservation Area must preserve or enhance its character or appearance. The design, materials, scale and siting of a new development within a Conservation Area, and development outwith an area that will impact upon its special qualities should be appropriate to its appearance, character and setting. Where a Conservation Area Appraisal has been undertaken the details should be used to guide the form and design of new development proposals.

Policy HE4 - Gardens and Designed Landscapes

The integrity of sites included on the Inventory of Gardens and Designated Landscapes will be protected and enhanced.

Policy ER1A - Renewable and Low Carbon Energy Generation

Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported where they are in accordance with the 8 criteria set out. Proposals made for such schemes by a community may be supported, provided it has been demonstrated that there will not be significant environmental effects and the only community significantly affected by the proposal is the community proposing and developing it.

Policy NE3 - Biodiversity

All wildlife and wildlife habitats, whether formally designated or not should be protected and enhanced in accordance with the criteria set out. Planning permission will not be granted for development likely to have an adverse effect on protected species.

Policy ED3 - Rural Business and Diversification

Favourable consideration will be given to the expansion of existing businesses and the creation of new business. There is a preference that this will generally be within or adjacent to existing settlements. Outwith settlements, proposals may be acceptable where they offer opportunities to diversify an existing business or are related to a site specific resource or opportunity. This is provided that permanent employment is created or additional tourism or recreational facilities are provided or existing buildings are re-used. New and existing tourist related development will generally be supported. All proposals are required to meet all the criteria set out in the policy.

Policy ER6 - Managing Future Landscape - Change to Conserve and Enhance the Diversity and Quality of the Area's Landscapes

Development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross and they meet the tests set out in the 7 criteria.

OTHER POLICIES

Perth & Kinross Wind Energy Policy & Guidelines (WEPG) 2005

This supplementary planning guidance was approved by Perth & Kinross Council in 18th May 2005. As Members are aware, the Council undertook extensive public consultation on its Wind Energy Policy and Guidelines and was approved by the Council in May of 2005.

Perth and Kinross Council's Guidance for the Preparation and Submission of Photographs and Photomontages to illustrate the impacts of Wind Energy Development, for inclusion in Planning Applications and Environmental Statements

This provides advice on the selection and identification of viewpoints, photography standards and photomontage standards. The requirement for visualisations to be presented in accordance with this guidance was highlighted through the scoping exercise prior to submission of the planning application.

Tayside Landscape Character Assessment (TLCA)

The Tayside Landscape Character Assessment (TLCA), 1999, is published by Scottish Natural Heritage and remains a valid baseline resource. Whilst some of its guidance on wind energy is dated, owing to the much smaller size of turbines considered in the TLCA, other aspects of the study remain a useful resource.

The David Tyldesley and Associates – Landscape Study to Inform Planning for Wind Energy (2010)

This documents purpose is to inform the development of the 'spatial strategy for Wind' which will be subject to consultation and ultimately approval by the Council as supplementary guidance. The need for the preparation of this Supplementary Guidance is detailed in the Local Development Plan under the heading 'Guidance to be published later' in Appendix 1: List of Supplementary Guidance.

Scottish Natural Heritage – Siting and Designing Windfarms in the Landscape (2014)

Guides windfarms towards those landscapes best able to accommodate them and advises on how windfarms can be designed to best relate to their setting and minimise landscape and visual impacts.

Scottish Natural Heritage – Assessing the Cumulative Impact of Onshore Wind Energy Developments 2012

This document sets out methods to be used to assess cumulative impacts on landscapes and birds.

Supplementary Planning Guidance – Landscape 2015

Purpose is to reinforce Local Development Plan Policy ER6 which seeks to conserve and enhance the diversity and quality of the areas landscapes.

CONSULTATION RESPONSES

INTERNAL

Transport Planning – no objection

Environmental Health – no objection subject to conditions

EXTERNAL

National Air Traffic Services – no objection

Ministry Of Defence – no objection

Edinburgh Airport Ltd – no objection

Fossoway Community Council – objection on grounds of principle

REPRESENTATIONS

The following points were raised in the 1 representation(s) received from the Fossoway Community Council

- Object to principle of wind turbine development.

The above issues are addressed within the appraisal section above.

ADDITIONAL INFORMATION RECEIVED:

Environmental Impact Assessment (EIA)	Not Required
Screening Opinion	Not Required
EIA Report	Not Required
Appropriate Assessment	Required
Design Statement or Design and Access Statement	Not Required
Report on Impact or Potential Impact eg Flood Risk Assessment	Supporting Statement submitted

APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise. The Development Plan for the area comprises the approved TAYplan 2016 and the adopted Perth and Kinross Local Development Plan 2014.

The determining issues in this case are whether; the proposal complies with development plan policy; or if there are any other material considerations which justify a departure from policy.

Policy Appraisal

The determining issues in this case are whether: - the proposal complies with Development Plan policy; or if there are any other material considerations which justify a departure from policy.

In terms of TAYPlan, Policy 7 is directly applicable as are the aforementioned Policies of the approved Development Plan.

Policy 7 of TAYPlan states that Local Development Plans and development proposals should ensure that all areas of search, allocated sites, routes and decisions on development proposals for energy and waste/resource management infrastructure have been fully justified.

Policy ER1 of the Development Plan supports development of renewable and low carbon sources of energy where they accord with associated policy criteria. The associated policy criteria elements are addressed within this report. Policy ED3 of the adopted Plan offers support for the expansion of existing businesses in rural areas. Policy HE1A refers to Scheduled Ancient Monuments and states that there is a presumption against development which would have an adverse effect on the integrity of a SAM. Policy HE2 refers to listed buildings and states that the scale and siting of new development should be appropriate to the building's character, appearance and setting.

In terms of other material considerations, this principally includes an assessment against national planning guidance in the form of the Scottish Planning Policy 2014 and consideration of supporting guidance including the Tayside Landscape Character Assessment. Other relevant material considerations include the Perth and Kinross Council Supplementary Landscape Guidance and the Draft Supplementary Guidance on Renewable and Low Carbon Energy.

Accordingly, based on the above, I consider the key determining issues for this proposal to be a) whether or not the proposal (by virtue of its siting and height will have an unacceptable impact on the landscape / visual amenity of the area, b) whether or not the proposal is compatible with the surrounding land uses, c) whether or not there will be an adverse impact on any protected

species and / or habitats and d) whether or not the proposal will adversely affect any cultural heritage assets, bearing in mind the provisions of the Development Plan and other material considerations.

Landscape Impact

In considering the impact on the landscape character, the Tayside Landscape Character Assessment 1999 (TLCA) is a key material consideration as is the Council's Supplementary Guidance on Landscape referred to within Policy ER6 of the LDP. The Council has recently published Draft Supplementary Guidance on Renewable and Low Carbon Energy however this is apportioned limited weight at this stage. Within the TLCA the application site lies within the Lowland Loch Basin classification. Within the Council's Guidance the area is referred to as the Loch Leven Basin.

The Lowland Basin landscape type sits between the Lomond and Cleish Hills to the east and south with the Ochills located to the north.

The Landscape Character Assessment specifies that small scale, wind power has been important in this area for many decades, being harnessed by wind pumps to raise water. With the development of modern wind turbines to generate power, it is possible that this area may come under pressure for wind farm development. Though wind speeds are likely to be significantly lower than in more elevated parts of the Highlands or the Sidlaws/Ochills, it is possible that the lower level of perceived constraint, together with the proximity to the existing electricity distribution network, could favour this area.

This would be even more likely if the efficiency of wind turbines continues to improve, thereby making areas with lower wind speeds viable.

This area therefore may not necessarily favour turbine development but at an appropriate scale and location it could be acceptable.

In terms of renewable proposals, Policy ER1A of the Development Plan seeks (amongst other things) to ensure that the visual integrity and landscape impact of the proposal is fully taken into account.

It is fully acknowledged in this situation, that the introduction of a structure of this scale will have some degree of visual impact, particularly within the area immediately surrounding the site. In my view the main consideration in the assessment of visual amenity relates to how the proposed turbine will appear within the landscape context, the overall scale of intervisibility from affected parties and the degree of resultant change.

The agent has submitted a total of eight viewpoints which show the turbine from various receptors including roads, settlements and residences. The submission includes 2 additional viewpoints from the previous application, these are from the A977 to the south and the core path north of Carnbo within the Ochil Hills Special Landscape Area. All viewpoints are located in areas

immediately surrounding the site. A ZTV has also been submitted which outlines the visibility of the turbines to a distance of 15km.

Viewpoint (VP) 1 - Gelvin Moor Road

This VP is taken from the small scale north to south public road to the west of the application site which links the A91 to the A977. The turbine will be seen in the context of the existing woodland and against a backdrop of the 35m tall national grid pylons. There are other vertical structures in the immediate vicinity, including the pylons which alter the landscape character in this location and the existing woodland helps to provide screening and containment for the turbines from this viewpoint. Furthermore this viewpoint benefits from back-clothing from the distant Lomond Hills. I am satisfied that the impact from this viewpoint is not significant.

VP2 - Carnbo

This VP is taken from the settlement of Carnbo and represents the impact on residential receptors, road users and users of the FSY/157 core path. Similar to viewpoint 1 the turbine will be viewed in association with the existing pylons and will be back clothed by the rising Cleish Hills to the south. They will also be partially screened by the undulating topography. Given the existing vertical features in the landscape when viewed from the north at this particular elevation and the undulating topography I am satisfied that the impact of the turbines of this scale from this viewpoint is not significant. I believe there is however, likely to be more of an impact from higher viewpoints to the north within the Ochils.

VP - 3 Bellfield

This VP is taken from the minor public road to the east of the application site and represents the impact from residential receptors and users of the road. This viewpoint shows the full extent of the turbine located between the two 35m tall pylons which dominate the landscape. There is an element of back clothing from the existing trees and rising hills beyond but the hub and blades of the turbine will break the skyline when viewed from here. Again, similarly to VP1 and 2 the existing pylons are the key vertical landscape features here and the turbine is significantly smaller although they will be moving structures and therefore more noticeable in the landscape than the pylons. Nevertheless whilst the turbine is marginally higher than the adjacent trees I do not consider a turbine of this scale to result in any significant impact on visual amenity from this viewpoint.

VP - 4 A977

This VP is taken from the A977 main road to the south of the site. This is a key receptor as it acts as one of the main east-west routes through Perth and Kinross. Again the turbine can be seen in association with the existing pylons. The full height of the turbine can be seen from here given the topography of the land and the fact that they sit on a south facing slope. The turbine also

risers above the skyline in this location and can be seen in conjunction with turbines which form part of the Greenknowes Wind Farm which is located in Glen Devon to the north of the site which is partially visible through the Glen Devon valley from this viewpoint. The cumulative impact will be considered further in the section below. I have some concerns with the turbine projecting above the skyline when viewed from here particularly given how busy this receptor is. Furthermore the turbine is considered to detract from the distinctive backdrop of the Ochills from here.

VP - 5 Gelvin

This VP is located to south west of the application, to the south of view point 1 on the minor road which demonstrates the impact on road users. I do not consider this viewpoint to be a particularly sensitive area and therefore give it little weighting in the overall assessment of impact.

VP - 6 A91

This VP is located to the east of Carnbo on the A91 and will be particularly relevant to road users travelling west bound. The key feature of the landscape from this viewpoint are the pylons which extend towards the horizon line. The turbine will sit between two of the pylons and will sit comfortably within the landscape from this viewpoint. The trees in the area will also help to provide backdrop and partial screening from this location although the blade tips do project above the skyline. Overall I do not consider the impact from this viewpoint to be significant.

During my site visits I also visited other areas around the site to establish the impact of the proposed turbine whilst considering the submitted ZTV and noted that there were other areas where the visual and landscape impact is significant. It is on that basis that two additional viewpoints have been submitted in addition to the six above which were submitted as part of the previous application.

Other Areas Identified in ZTV

During consideration of the previous application, no viewpoints of the potential impact of the turbines from higher ground were submitted and I considered this to be a significant issue. As such two additional viewpoints have been submitted with this application.

Generally the relatively flat open character of the landscape ensures that the site would be visible from viewpoints across a significant part of the Loch Leven Basin landscape character area. However there are no similar developments in the Loch Leven Basin Landscape Character Area other than the turbines at Bankhead Farm. It was evident from my site visit that the turbines at Bankhead are conspicuous in this landscape and show that the landscape here is sensitive to the presence of vertical elements. Other than the bankhead turbines, wind development is generally restricted to the edges of the basin. The establishment of the bankhead turbines within the basin has

resulted in a landscape dominated by these tall structures and I have concerns that approval of a further turbine would only serve to increase the detrimental impact which vertical structures have on the landscape. Additional viewpoints have been supplied with this application which seeks to address the concerns above.

VP 7 - A977 Layby near North Kilduff

As outlined above the key concerns with the previous proposal were the visibility from higher ground to the north and south of the site. This viewpoint is taken from the public road (A977) which sits at a slightly lower topography than the application site and does little to indicate the impact of the turbine from higher ground to the south. It indicates that the turbine will be back clothed.

VP8 - Core Path North of Carnbo

This viewpoint appears to have been taken either early in the morning or late in the day and as such the lighting conditions are not ideal in the photomontages. The information indicates that the turbine will sit with a back cloth of the rising land to the south but will sit in a prominent position within the landscape which will clearly alter the attractive views of the rolling topography of the basin from the Ochill Hills.

The turbines which are in place to the west of the site at Bankhead Farm (11/02053/FLL) extend to 47.1m in height. Other turbines have been refused in this area at South Kilduff Farm (13/01328/FLL). Furthermore an application for two turbines at Gelvin Farm (12/01462/FLL) was withdrawn due to concerns regarding the visual impact. Gelvin Farm is located only 1km to the south west of the application site.

Whilst the scale of the turbine is limited and it is mainly seen in context of the existing taller pylons I believe that granting consent for a further turbine within the Loch Leven Basin will serve to further erode the landscape character of this area. Furthermore I do not give significant weight to the presence of the pylons as these are lattice structures with no moving parts and I do not consider them to be comparable in terms of impact when compared with a turbine which has a moving rotor blade. I also remain concerned regarding the impact which the turbine will have from higher viewpoints across the basin and whilst an additional viewpoint has been provided from the north this only serves to confirm my concerns in this regard. No information has been submitted regarding the impact of the proposal from higher ground to the south of the site but my view is that similar concerns would be apparent and do not intend to request this. Overall the proposed turbine is considered to detrimentally alter the landscape character of the Loch Leven Basin by introducing a further vertical moving structure further east along the basin. I do not consider the reduction from two turbines to one to alter my view in this regard.

Cumulative Impact

The cumulative impact of wind energy infrastructure is an important consideration in the assessment of the impact of any proposed wind turbine on the landscape. An individual wind turbine on its own may not necessarily result in a significant impact on the wider landscape but when considered along with other existing and proposed turbines, its impact could be quite significant.

The agent has made assessment of potential cumulative impact within their supporting statement considering turbines within a 5km radius of the site.

There are a total of 10 wind energy developments within the 5km radius of the proposed site. These are Easter Fossoway (20.3m), Bankhead Farm (2 x 47.1m), Hoodshill (23m), Carsefoot (19.8m), Thortonhill (45.5m), Thortonhill (20.3m), Ledlath Farm (4x20.2m), Touchie Farm (2x24.8m), Hilton of Aldie Farm (2x22.4m), Gellybank Farmhouse (21m).

It was also noted during my site visit that the turbine will be visible in association with Greenknowes Windfarm when viewed from the south but similar to the previous application this has not been referred to in the applicant's assessment. In my view the visibility of the turbines in association with Greenknowes draws the distant wind farm closer to the basin floor and as such there is considered to be a detrimental cumulative landscape impact associated with the proposed turbines. Furthermore the turbine also has the potential to impact on views from the higher ground to the south of the site and draw the eye from the windfarm to the north onto the valley floor where the turbine is proposed.

As outlined above the 47.1m high turbines at Bankhead are considered to impact on the landscape character of the area due to their height and elevated position within an undulating lowland basin. I consider the proposed turbine would serve to extend the presence of wind turbines to the east along the basin to the further detriment of the landscape character and would serve to draw the eye along the basin when viewed from upland areas to the north and south.

Furthermore there are a series of core paths located on the Ochills to the north of Carnbo which provide links into the hills (FSWY/156 and FSWY/130). These are located within an identified Special Landscape Area and the views out of this area are considered to be important. These are also considered to be sensitive receptors and the viewpoint provided from this area serves to confirm my concerns in this regard. Given the elevated nature of the core paths I believe the turbine will be significant in the landscape when viewed from here and the eye will be drawn further along the lowland basin as outlined above. This will serve to accentuate the vertical features within the landscape to its detriment. The reduction from two turbines to one does not alter my view in this regard.

Compatibility with Existing Land Uses

In regards to compatibility with existing land uses, Policy PM1 of the LDP seeks to ensure that all new developments are compatible with existing land uses. I have no concerns regarding the impact that the turbine will have on the commercial activities of the land. However the impact on existing residential properties, particularly as it is noted that the nearest private residential property lies approximately 375 metres from the site, must be considered. These properties are owned by the landowner but rented by third parties. All further third party properties are over 800 metres from the turbine site.

Guideline 2 set out in Perth & Kinross Council's Supplementary Planning Guidance (SPG) for Wind Energy Proposals seeks to prevent the siting of new wind turbines that are closer to houses and settlements (as well as other sensitive locations) than a distance of 20 times the height of the turbine (measured from ground to blade tip) which is 400 metres. Given the closest residential receptors are in the applicant's ownership and are only just short of the 400 metre required distance I am generally satisfied that the impact on residential receptors is not significant.

The noise report submitted for the H15 turbine has been assessed in terms of the BWEA Performance and Safety Standard and the simplified criteria according to ETSU-R-97 guidelines. Environmental Health (EH) have looked at the noise report and it appears that no assessment for tonality has been provided by either of the standards used and the report does not make reference to the details of the test turbine under assessment i.e. rotor diameter hub height etc.

EH advise that if no assessment for tonality has been undertaken a penalty of 5 dB would need to be applied to the SWL and the noise levels would need to be re-calculated. Based on this and the distance to the nearest residential property being 430m away, EH have assessed the likely noise impact using the British wind energy performance and safety standard 2008 and based upon this EH are satisfied that noise should not cause any significant impact to adjacent residential properties subject to appropriate conditions being attached to the consent.

I am satisfied that the proposed turbine would not result in significant loss of amenity to the local community and as such the proposal is compatible with Policy PM1 of the LDP and ER1A where it relates to residential amenity.

Protected Species/Habitats

Policy NE3 seeks to protect and enhance existing wildlife and their habitats. The site is not protected by any specific designation. Nevertheless this does not necessarily indicate that the proposed development would not impact on protected wildlife and it is important to consider the impact the development could have on local wildlife interests.

A Phase 1 survey of protected species has been submitted and indicates the proximity of the turbine to areas of potential habitat including hedgerows and woodland and indicates that a walkover survey of the site was undertaken, although this was early in the season it does identify potential suitable habitat for protected species.

The survey concludes that the proposed development will have no negative impact on protected species. I am satisfied with the conclusions provided.

Cultural Heritage

The LDP seeks to ensure that matters of cultural heritage are protected from inappropriate development.

The supporting statement has identified Listed Buildings, Scheduled Monuments (SM) and Historic Gardens and Designed Landscapes.

Eight SMs lie within 5km of the proposed site. Five of these lie within the ZTV of the proposals. The turbine is not considered to have a significant impact on the setting of these SMs.

There are listed buildings located at Tullibole Church and Burial Ground and Dovecot both of which are approximately 1.7km from the turbines. Both are outwith the ZTV and therefore their setting will not be detrimentally impacted upon. Whilst there are other listed structures within 5km of the turbine I am satisfied with the conclusion outlined in the supporting statement that the impact will be minimal due to intervening screening and vegetation.

The closest Conservation Areas are Cleish (5.1km) to the south east and Kinross (5.6km) east. Given the distances between the site and these areas I am satisfied that the impact will be minimal.

Cleish Castle Historic Garden and Designed Landscape is located 4.8km to the south. I am again content that the impact of the turbine on this feature will be limited.

Having assessed the proposals it is considered that the turbine would be unlikely to have any significant impact on any sites of cultural interest. The existing intervening topography and woodland and the distances involved would not result in any major impact on the character or setting of the historic sites listed above. It is therefore considered that the proposal is consistent with the relevant Development Plan policies with regard to cultural heritage.

Transport/Traffic

The Supporting Statement indicates that the existing road network is capable of accommodating the delivery of the turbine given its scale as it can be accommodated on a flat bed HGV.

There should be no special arrangements necessary for delivery to site - such as escorts or traffic safety measures. There should be no requirement for the temporary closure of public roads during the construction phase.

Transport Planning have assessed the proposals and raised no objection to the proposal on the basis of access and traffic safety. In terms of traffic safety the proposal is considered to accord with Policy TA1B of the LDP.

Economy/Carbon Reduction

There are a number of ways in which a wind turbine can bring jobs to a local community. Firstly, the construction stage itself requires a range of workers to construct and assemble the turbine on site and connect to the national grid. In addition, for the duration of the construction this short term work supports other local businesses. Secondly, there is the on-going maintenance of the turbine which contributes to the predicted 130,000 jobs in the renewables sector in Scotland by 2020.

In addition to the benefits to the environment the proposed renewable energy project will bring it is proposed that the electricity generated will partly be exported to the grid. It would also help to serve the existing farm and the income generated would help sustain the existing business.

It is accepted that there is a growing need to increase the amount of electricity generated from renewable sources in order to reduce our reliance on fossil fuels and that wind power will play an important role in this aim. The Scottish Government, through its planning policies and guidance, is also broadly supportive of wind energy as a vital part of the response to climate change. It is also acknowledged that in some circumstances there may be an additional justification associated with an existing economic use.

The submission indicates that the proposed 15kW turbines will be expected to generate in the region of 48000kWh of electricity per annum. This would directly offset the emission of approximately 17 tonnes of CO2 for every year of operation.

However I do not believe that this should outweigh the potential adverse landscape and visual impact of the scheme.

It is therefore considered that in this particular case the potential power generation, economic benefit and reduction of CO2 emissions are not sufficient material considerations to warrant approving the proposals.

Shadow Flicker

Shadow flicker is caused by a low sun behind the rotating blades of a turbine. The shadow created by the rotating blades can cause alternating light and dark shadows to be cast on roads or nearby premises, including the windows of residences, resulting in distraction and annoyance to the residents.

Having assessed this matter and with regards to shadow flicker, UK Government Reports such as "Onshore Wind Energy Planning Conditions Guidance Note" for BERR state that only properties within a 10 rotor diameter need be considered. As there are no properties within 375m of the application site, I do not foresee any issues with shadow flicker.

Aviation

Wind turbines have been identified to have detrimental effects on the performance of MOD Air Traffic Control and Range Control radars. These effects include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns which air traffic controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to air traffic controllers. Controllers use the radar to separate and sequence both military and civilian aircraft, and in busy uncontrolled airspace radar is the only sure way to do this safely.

The height and location of the proposed wind turbine has been assessed by the MOD and they have advised that they do not object to the proposed turbine. They have however requested that if planning permission is granted the following information is provided to the MOD:

- o the date construction starts and ends;
- o the maximum height of construction equipment;
- o the latitude and longitude of the turbine.

TV Reception

It is not anticipated that the proposed turbine would have any significant impact on Television reception. However, an appropriately worded condition could be attached to the consent which would provide mitigation measures for any person(s) affected directly by this proposal.

Developer Contributions

The Developer Contributions Guidance is not applicable to this application and therefore no contributions are required in this instance.

Conclusion

In conclusion, the application must be determined in accordance with the adopted Development Plan unless material considerations indicate otherwise. In this respect, the proposal is considered to be contrary to the adopted Local Development Plan 2014. I have taken account of material considerations and whilst the principle of renewable energy is broadly supported by the Scottish Government through its planning policies and guidance, it is considered that in this instance the power generation and reduction of CO2 emissions do not outweigh the adverse landscape and visual impacts. On that basis the application is recommended for refusal.

APPLICATION PROCESSING TIME

The recommendation for this application has been made within the statutory determination period.

LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDATION

Refuse the application

Conditions and Reasons for Recommendation

The proposal by virtue of the location within a flat open landscape ensures that the site would be visible from viewpoints across a significant part of the Loch Leven Basin landscape character area. The scale of the proposed wind turbine would result in unacceptable adverse landscape impact having regard to landscape character and setting within the immediate landscape and wider landscape character types contrary to Policies ER1A (a), ER6 (a) (b) of the Perth and Kinross Local Development Plan 2014.

The application is contrary to Perth and Kinross Council's Supplementary Guidance on Landscape June 2015 as the proposed visual impact will adversely affect the special landscape quality of the designated Special Landscape Area of the Ochill Hills.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Informatives

n/a

Procedural Notes

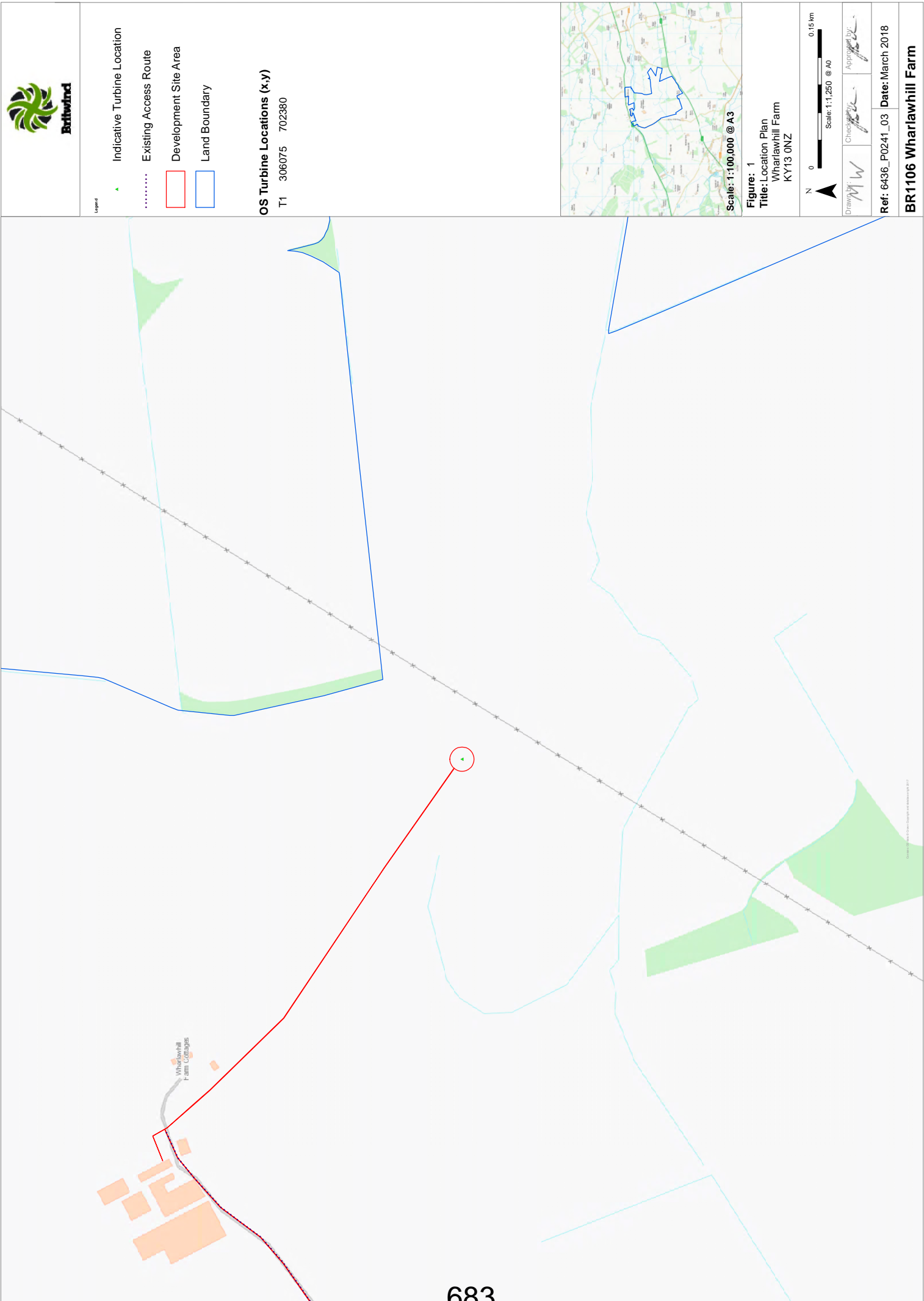
Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

18/00473/1	18/00473/16	18/00473/31
18/00473/2	18/00473/17	18/00473/32
18/00473/3	18/00473/18	18/00473/33
18/00473/4	18/00473/19	18/00473/34
18/00473/5	18/00473/20	18/00473/35
18/00473/6	18/00473/21	18/00473/36
18/00473/7	18/00473/22	18/00473/37
18/00473/8	18/00473/23	18/00473/38
18/00473/9	18/00473/24	18/00473/39
18/00473/10	18/00473/25	18/00473/40
18/00473/11	18/00473/26	18/00473/41
18/00473/12	18/00473/27	18/00473/42
18/00473/13	18/00473/28	18/00473/43
18/00473/14	18/00473/29	
18/00473/15	18/00473/30	

Date of Report

2 May 2018





Brthwind

Legend

- Indicative Turbine Location
- Existing Access Route
- Development Site Area
- Land Boundary

OS Turbine Locations (x,y)

T1 306075 702380



Scale: 1:100,000 @ A3

Figure: 1

Title: Location Plan
Wharlawhill Farm
KY13 0NZ

N

0 0.15 km

Scale: 1:1,250 @ A0

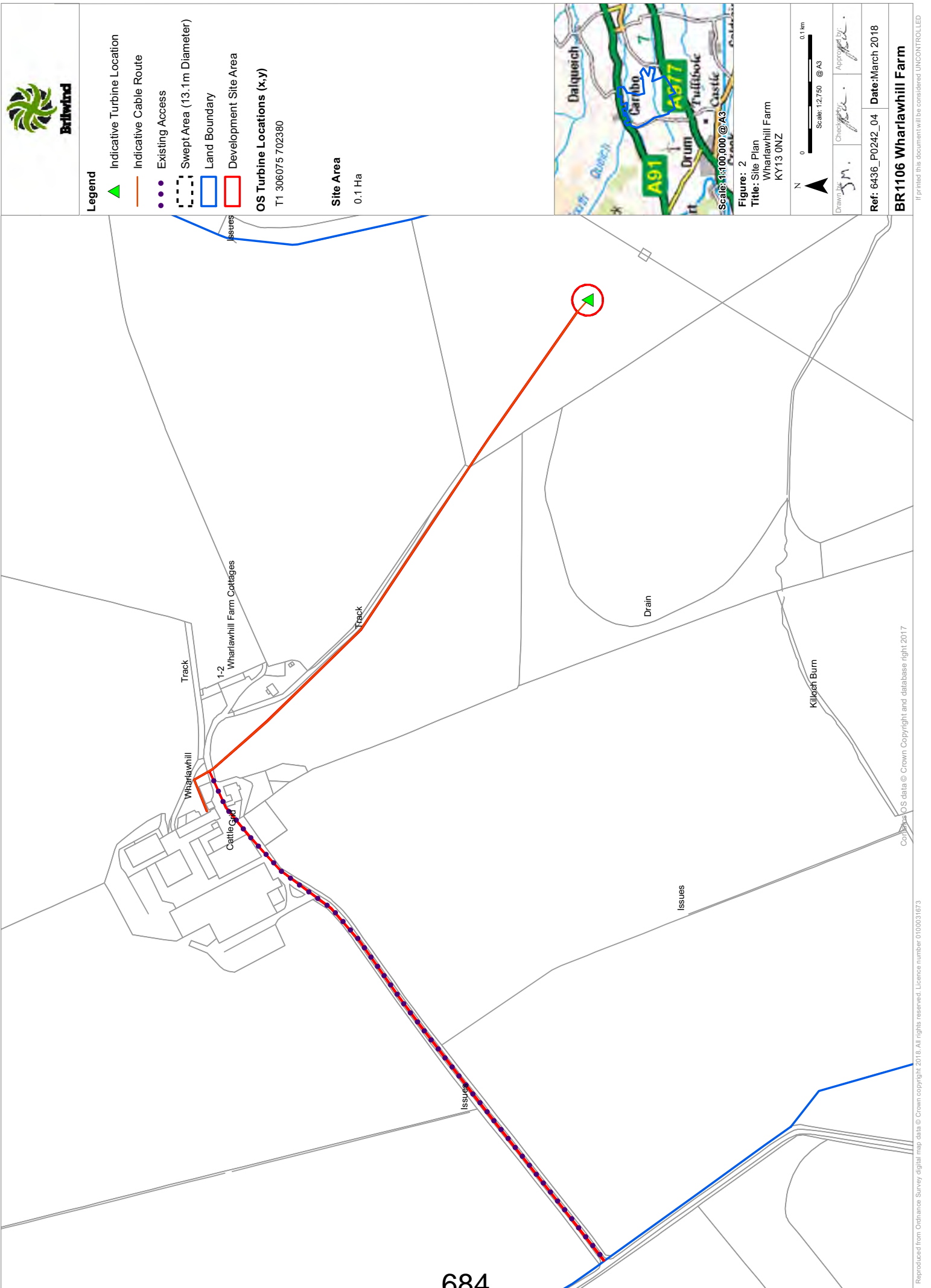
Drawn by: 

Checked by: 

Approved by: 

Ref: 6436_P0241_03 **Date:** March 2018

BR1106 Wharlawhill Farm



Legend

- Indicative Turbine Location
- Indicative Cable Route
- Existing Access
- Swept Area (13.1m Diameter)
- Land Boundary
- Development Site Area
- OS Turbine Locations (x,y)
T1 306075 702380

Site Area
0.1 Ha



Figure: 2
Title: Site Plan
Wharlawhill Farm
KY13 0NZ

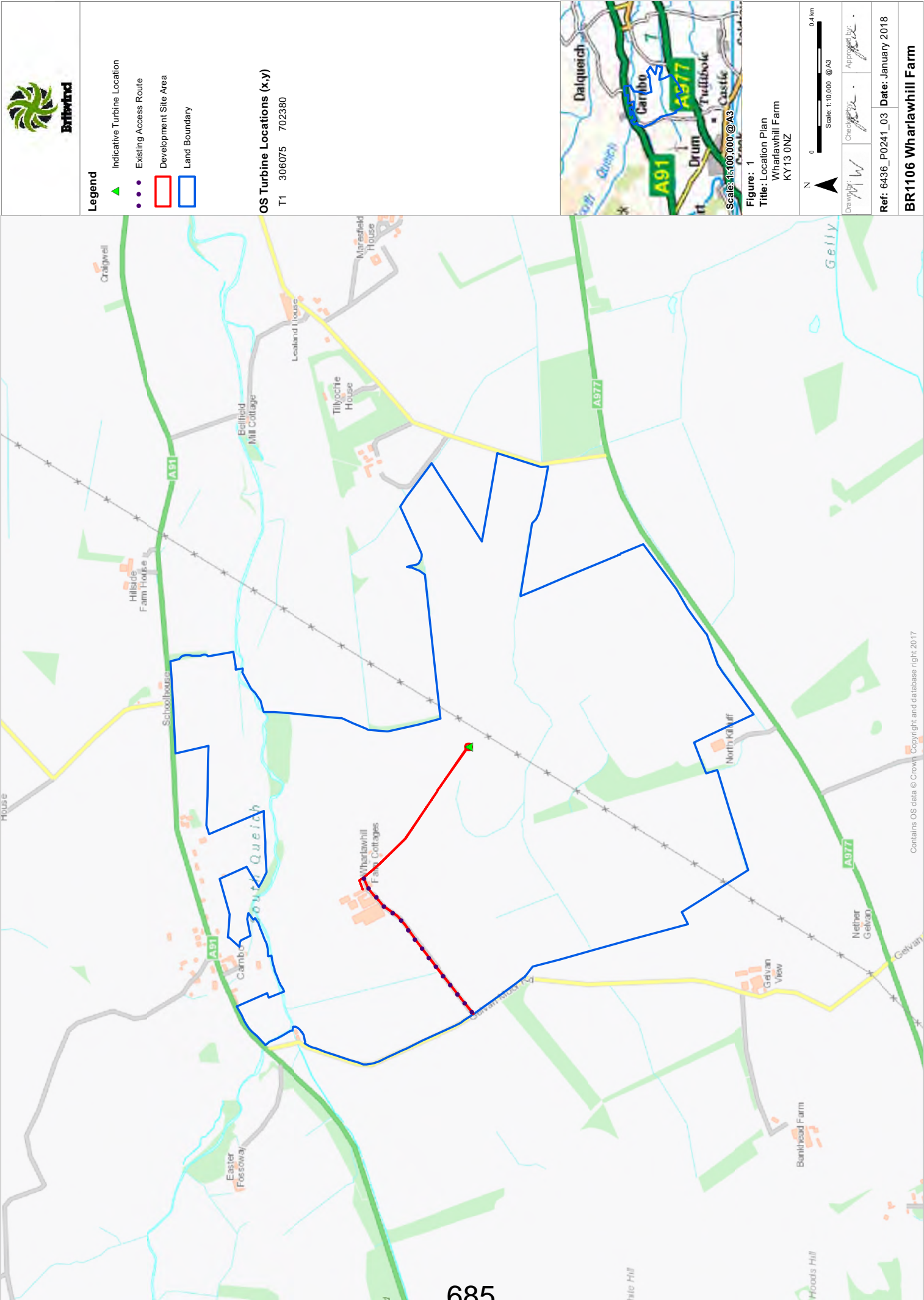



Drawn by: *SM*
Checked by: *SM*
Approved by: *SM*

Ref: 6436_P0242_04 **Date:** March 2018

BR1106 Wharlawhill Farm

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Briwint

Legend

- Indicative Turbine Location
- Existing Access Route
- Development Site Area
- Land Boundary

OS Turbine Locations (x,y)

T1 306075 702380




Figure 1
Title: Location Plan
Wharlawhill Farm
KY13 0NZ

Scale: 1:100,000 @ A3

0 0.4 km

N

Scale: 1:10,000 @ A3

0 0.4 km

Check by: [Signature]
Approved by: [Signature]

Drawn by: [Signature]

Ref: 6436_P0241_03 Date: January 2018

BR1106 Wharlawhill Farm



Indicative Turbine Locations

- Existing Access Route

Development Site Boundary

Land Boundary

OS Turbine Locations (x,y)
T1 326075 702380

Figure: 11
Title: Aerial Site Plan

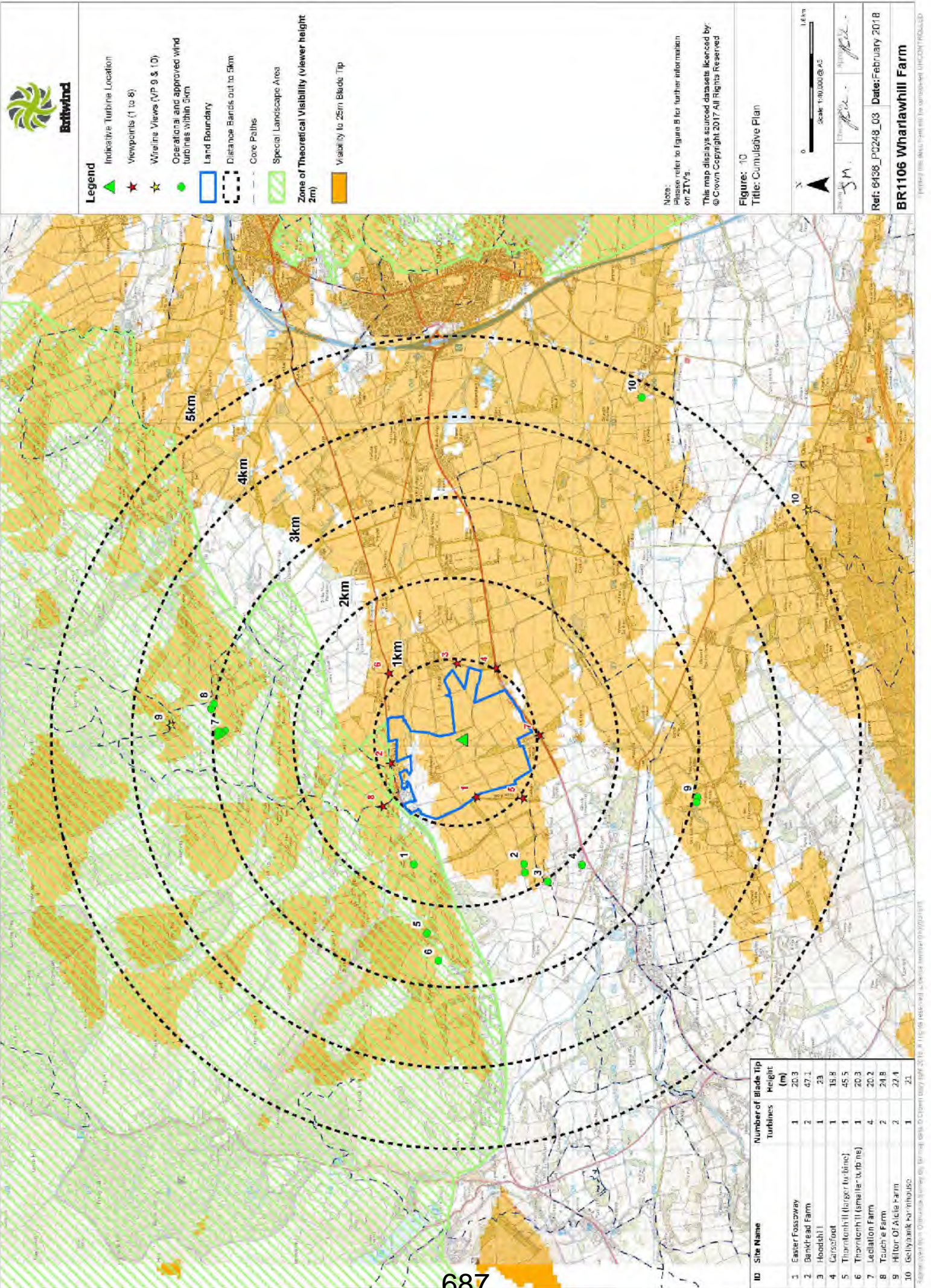


Drawn by SM.	Checked by K.L.	Approved by K.L.
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Ref: 6436_P0249_02 Date: January 2018

3R1106 Wharlawhill Farm

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Legend

- Indicative Turbine Location
- Viewpoints (1 to 8)
- Wireline Views (VP 9 & 10)
- Operational and approved wind turbines within 5km
- Land Boundary
- Distance Bands out to 5km
- Core Paths
- Special Landscape Area
- Zone of Theoretical Visibility (viewer height 2m)
- Visibility to 25m Blade Tip

Notes:
Please refer to Figure 8 for further information on ZTVs.
This map displays sourced datasets licensed by © Crown Copyright 2017 All Rights Reserved

Figure: 10
Title: Cumulative Plan

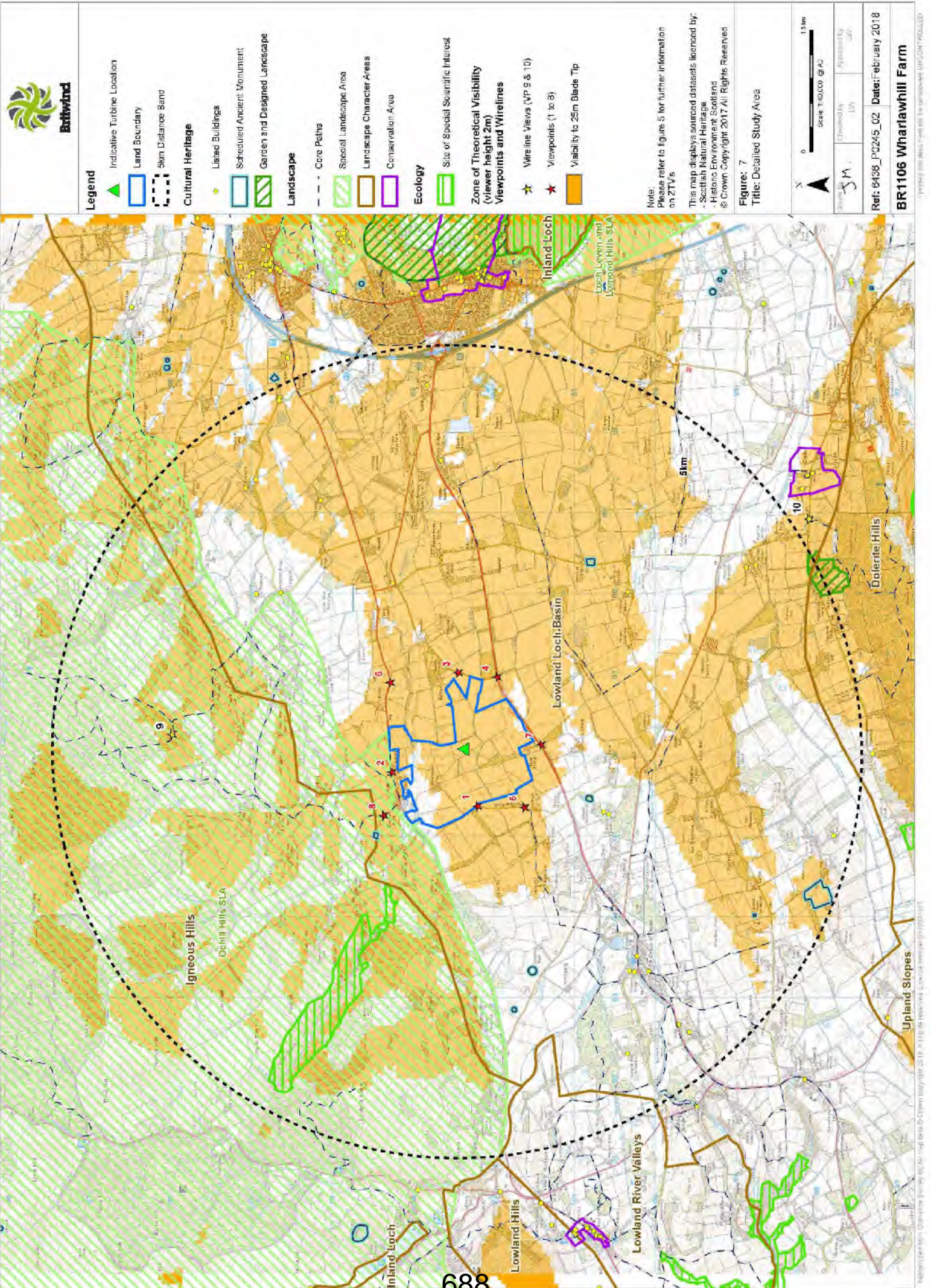


Scale: 1:100,000 @ A3

Ref: 6436_P0248_03 Date: February 2018

BR1106 Wharlawhill Farm

ID	Site Name	Number of Blade Tip Turbines	Height (m)
1	Easter Fossaway	1	20.3
2	Bankhead Farm	2	47.1
3	Hoodhill	1	23
4	Grassford	1	19.8
5	Thornhill II (larger turbine)	1	45.5
6	Thornhill II (smaller turbine)	1	20.3
7	Ledlinton Farm	4	20.2
8	Tauchie Farm	2	24.8
9	Hill of Aisle Farm	2	22.4
10	Gellyraik Northside	1	21



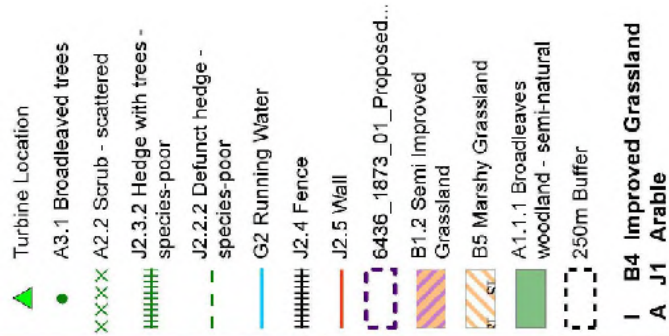
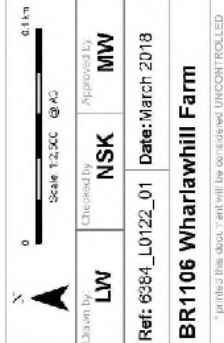
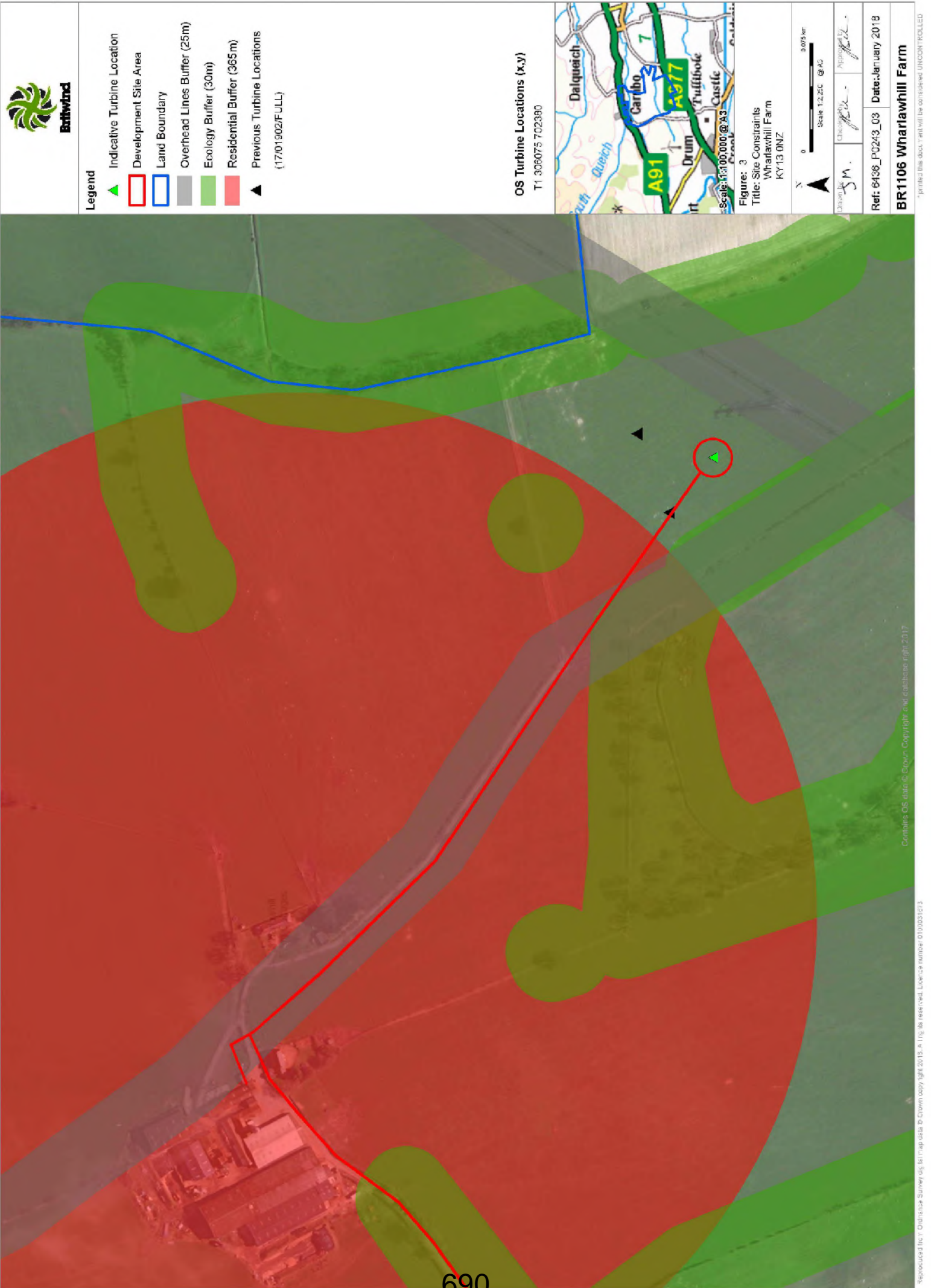
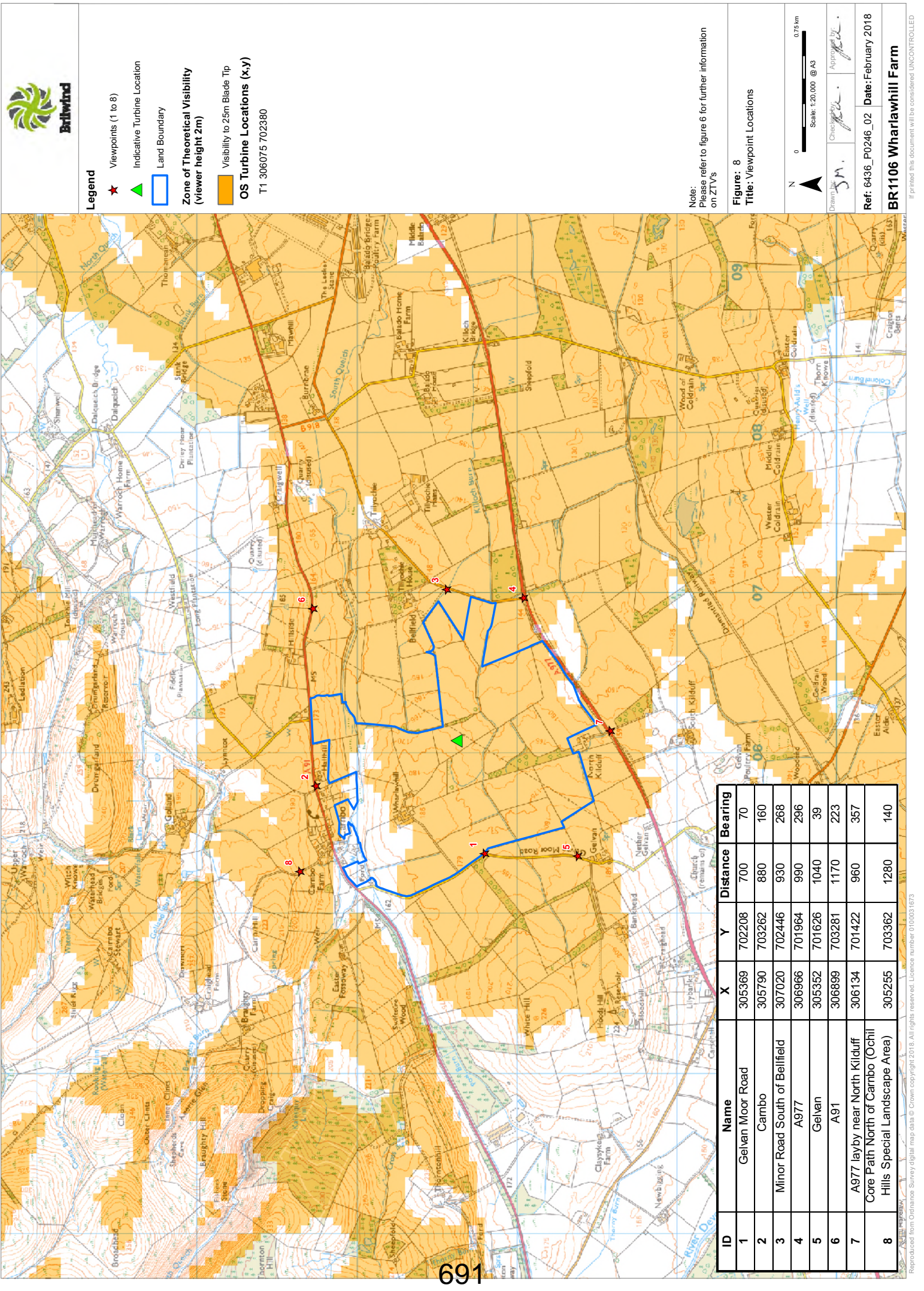


Figure: 12
Title: Phase
Wharfedale
KY13 0



Contains OS data with Crown Copyright and database right 2017. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Legend

- ★ Viewpoints (1 to 8)
- ▲ Indicative Turbine Location
- Land Boundary
- Zone of Theoretical Visibility (Viewer height 2m)
- Visibility to 25m Blade Tip
- OS Turbine Locations (x,y)
T1 306075 702380

Note:
Please refer to figure 6 for further information
on ZTVs

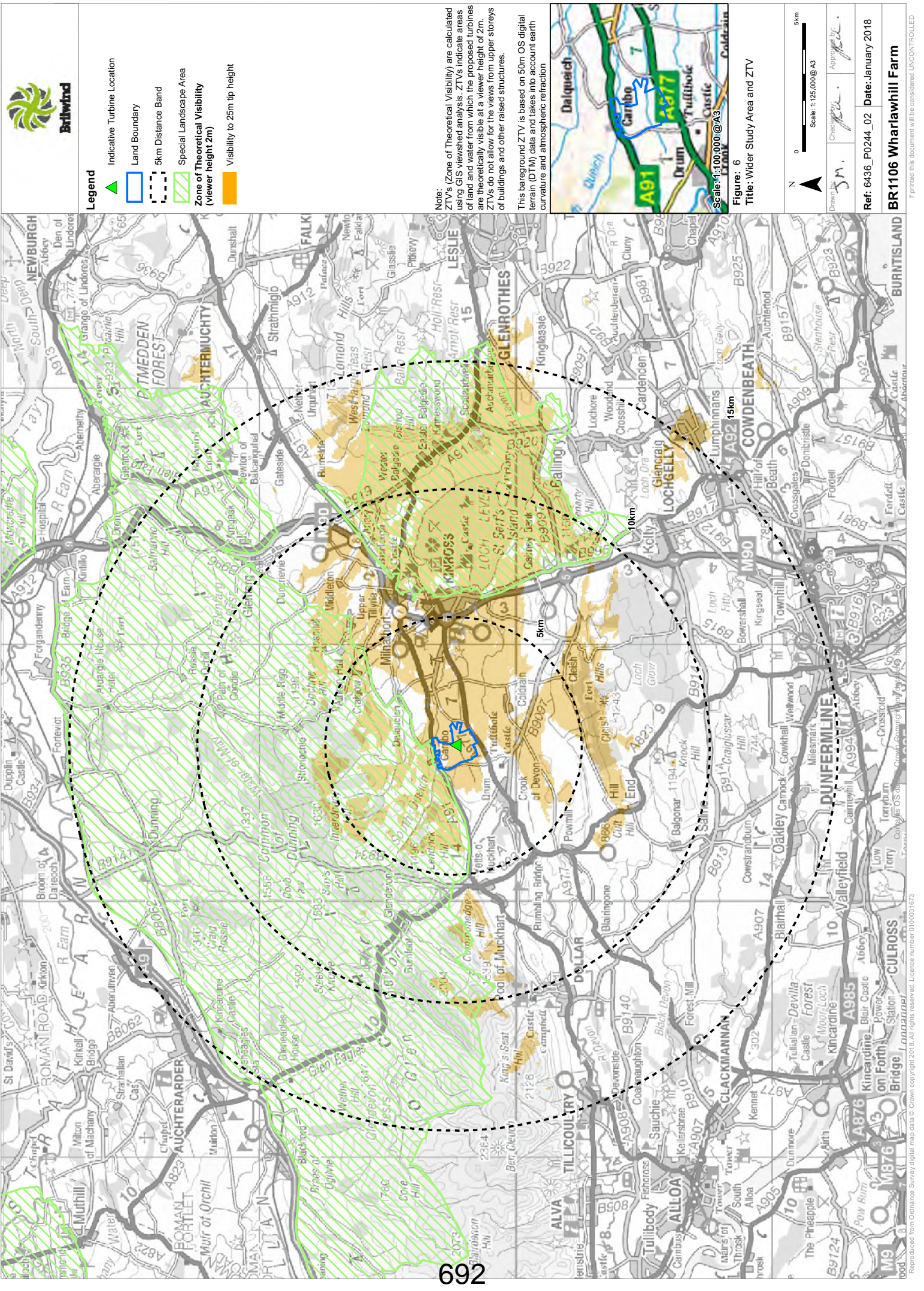
Figure: 8
Title: Viewpoint Locations

0 0.75 km
Scale: 1:20,000 @ A3

N

Drawn by: J.M. Checked by: J.M. Approved by: J.M.

ID	Name	X	Y	Distance	Bearing
1	Gelvan Moor Road	305369	702208	700	70
2	Cambo	305790	703262	880	160
3	Minor Road South of Bellfield	307020	702446	930	268
4	A977	306966	701964	990	296
5	Gelvan	305352	701626	1040	39
6	A91	306899	703281	1170	223
7	A977 layby near North Kilduff	306134	701422	960	357
8	Core Path North of Cambo (Ochil Hills Special Landscape Area)	305255	703362	1280	140



1. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EARTHWORKS SUPPORT TO EXPOSED EXCAVATIONS.
2. THE DESIGN, INSTALLATION AND MAINTENANCE OF TEMPORARY WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS DETAILED IN THE TENDER DRAWINGS.
3. ALL CONCRETE TO BE GRADE C28/35, PLACED IN ACCORDANCE WITH THE SPECIFICATION AND BS EN 1992-1-1.
4. COVER TO REINFORCEMENT:-
ALL FACES - 75mm
5. MINIMUM LAPS TO REINFORCEMENT TO BE AS FOLLOWS:-
B10 - B25 40 DIA
6. ALL HOLDING DOWN BOLTS TO BE GALVANIZED

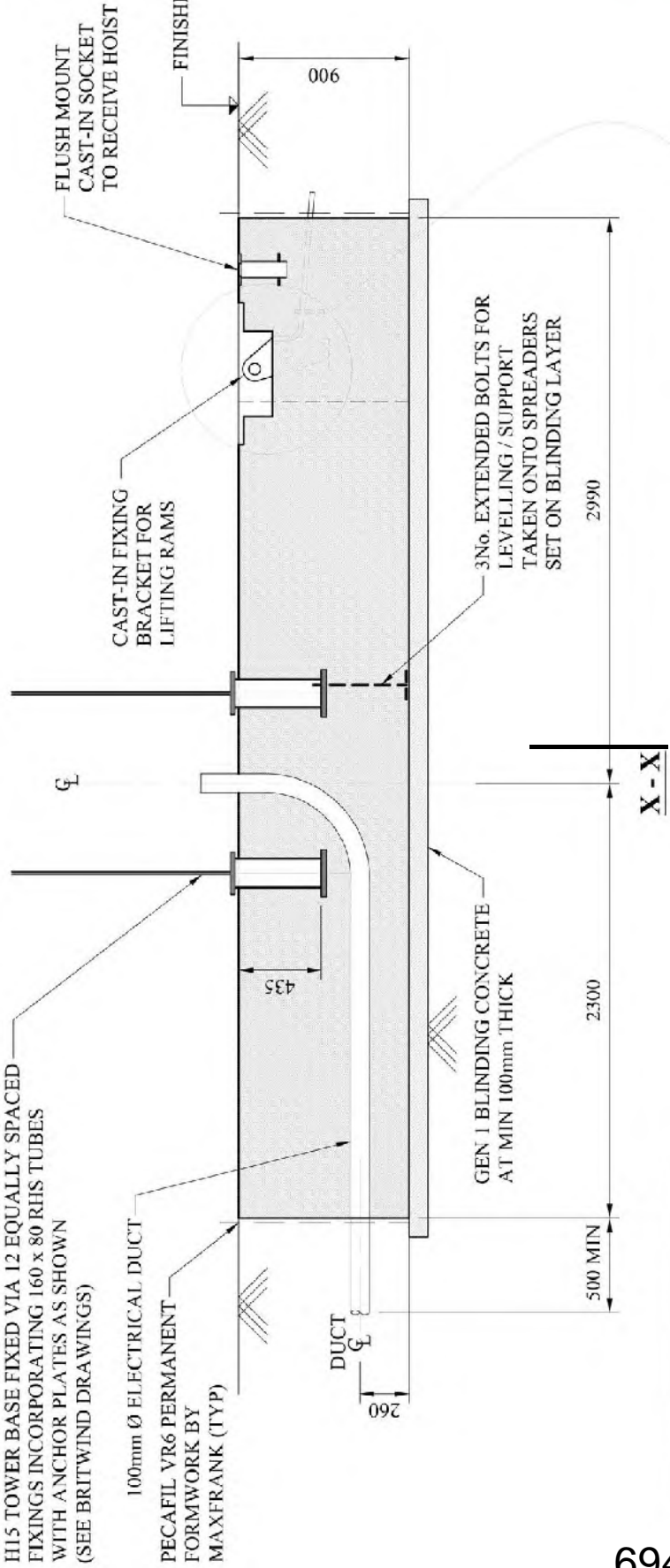


Drawing No. 01

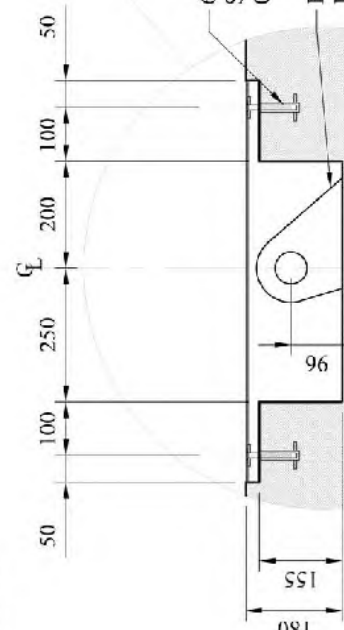
 **davidsonwalsh**
CONSULTING ENGINEERS

37 Heston Road
Chesham
 Bucks HP8 4JL
144 (0) 292 256485
www.davidsonwalsh.com

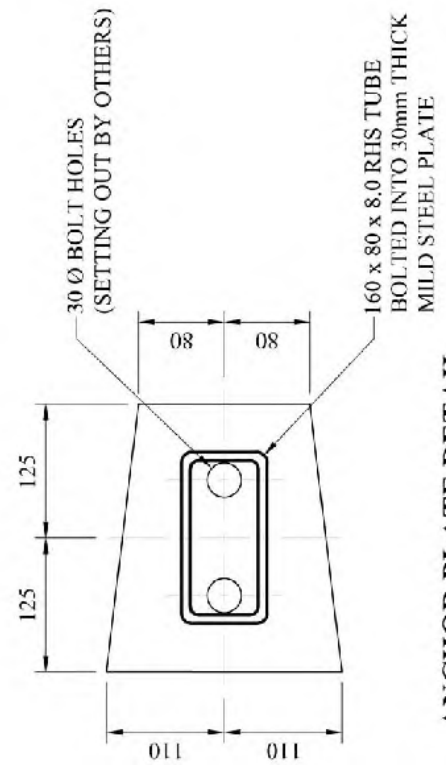
Client	ECOTRICITY			
Project	BRITWIND H15 FOUNDATION BASE			
Drawing	FIGURE 5.1: PAD FOUNDATION PLAN			
Drawing	CONSTRUCTION			
Scale	1:25 UNO	Local	A3	
Drawn	H.G.	Date	01.02.16	
Checked	M.W.	Date	08.02.16	
Authorised	M.W.	Date	22.03.16	



LIGHTNING PROTECTION
DETAILS TO BE CONFIRMED
BY BRITWIND



RAM FIXING RECESS DETAIL
(1:10)



ANCHOR PLATE DETAIL
(1:5)

D	UPDATED FOR CONSTRUCTION	H.G.	2013.6
C	ANCON PLATES REVIEWED	OFS	2013.6
B	H15 TOWER BASE CLIENT DRAWINGS	OFS	07.03.06
A	H15 TOWER BASE CLIENT DRAWINGS	NW	06.03.06
		H.G.	12.02.16
		NW	12.02.16
REV	DESCRIPTION	BY	DATE
CHG			



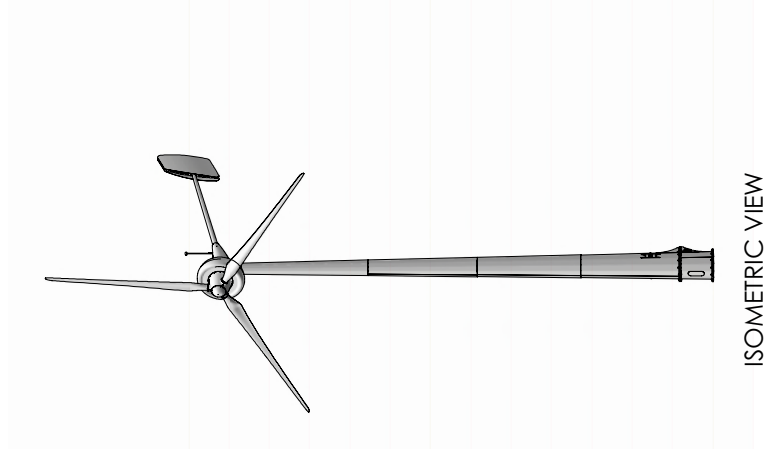
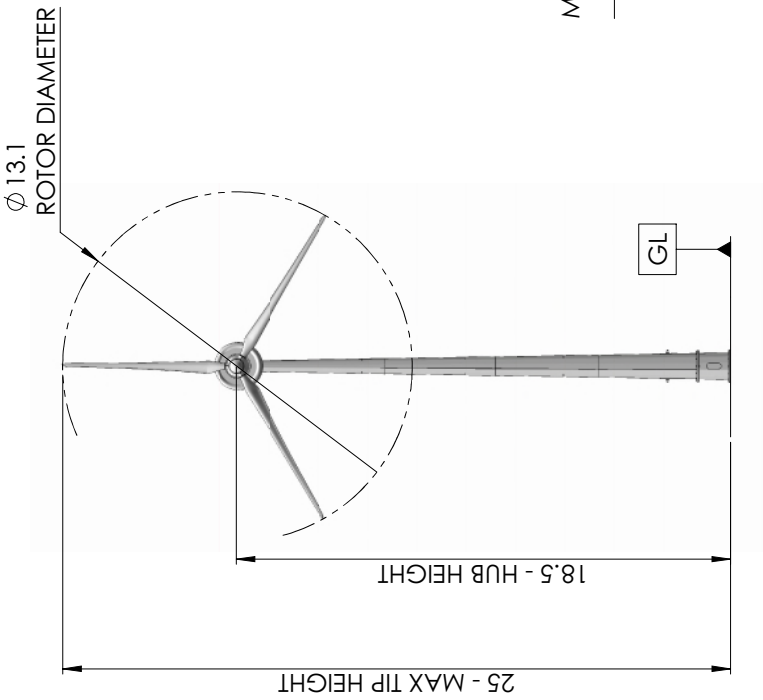
Client **ECOTRICITY**

Project **BRITWIND
H15 FOUNDATION BASE**

Drawing **FIGURE 5.2:
PAD FOUNDATION
SECTION**

Drawing	CONSTRUCTION
Scale	1:25 UNO
Drawn	H.G.
Checked	M.W.
Authorised	M.W.
Project No.	15124
Drawing No	02
Revision	D

Scale Bar:
0mm 100mm

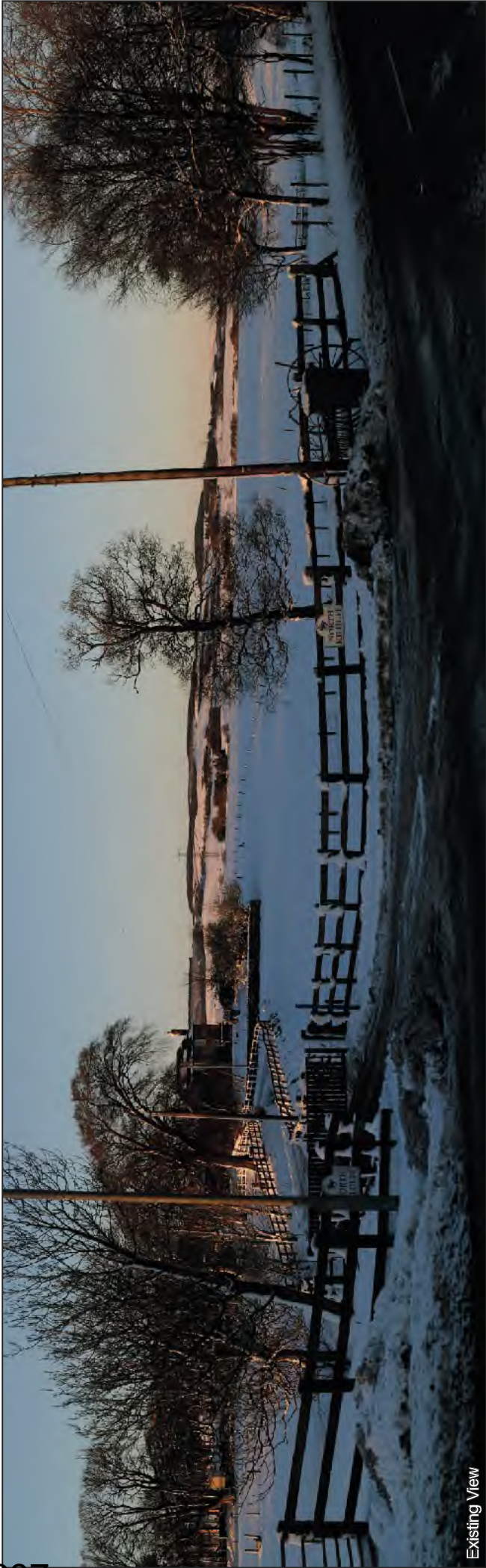
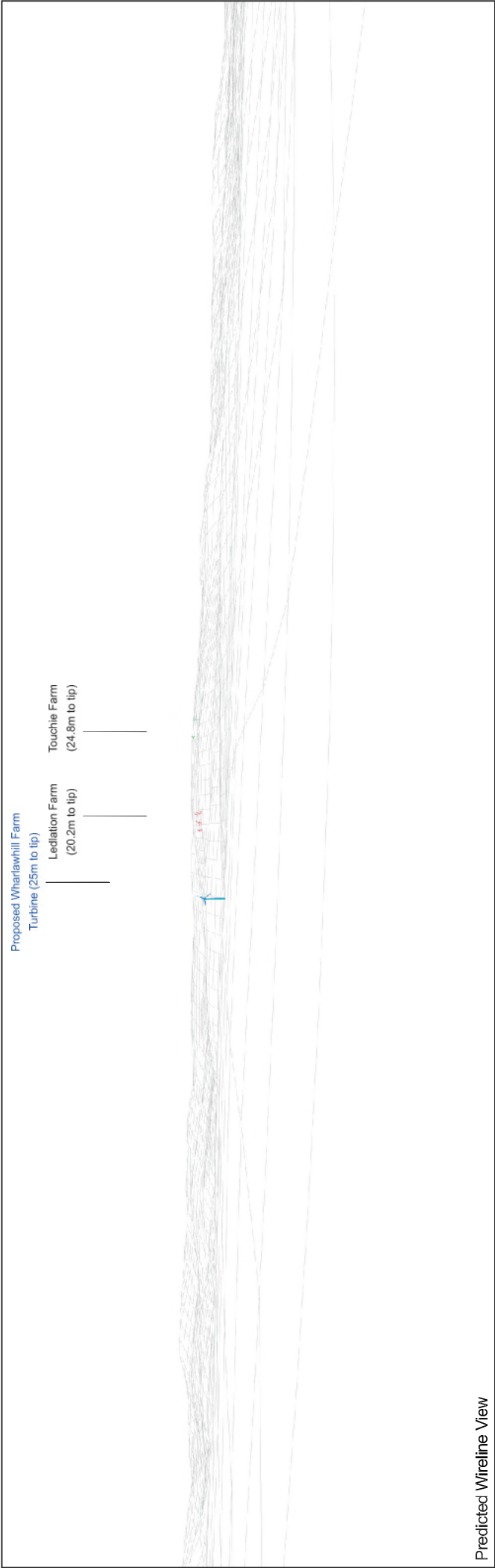


ISOMETRIC VIEW

NOTE:
TOWER FINISH - POWDER COATED IN COLOUR RAL 9018 - PAPYRUS WHITE

1	ISS.	INITIAL RELEASE	12/06/2015	GT
		AMENDMENTS	DATE	DRN
REVISIONS				

MATERIAL SPEC									
GENERAL TOLERANCES WHERE NON STATED									
NOM. SIZE	OVER	0	6	30	200	400	1000		
INCL.	6	30	200	400	1000				
MACHINED			+0.2		+0.5		+0.8	+1.0	+1.5
FABRICATED			±1.0		±1.0		±1.5	±2.0	±2.0



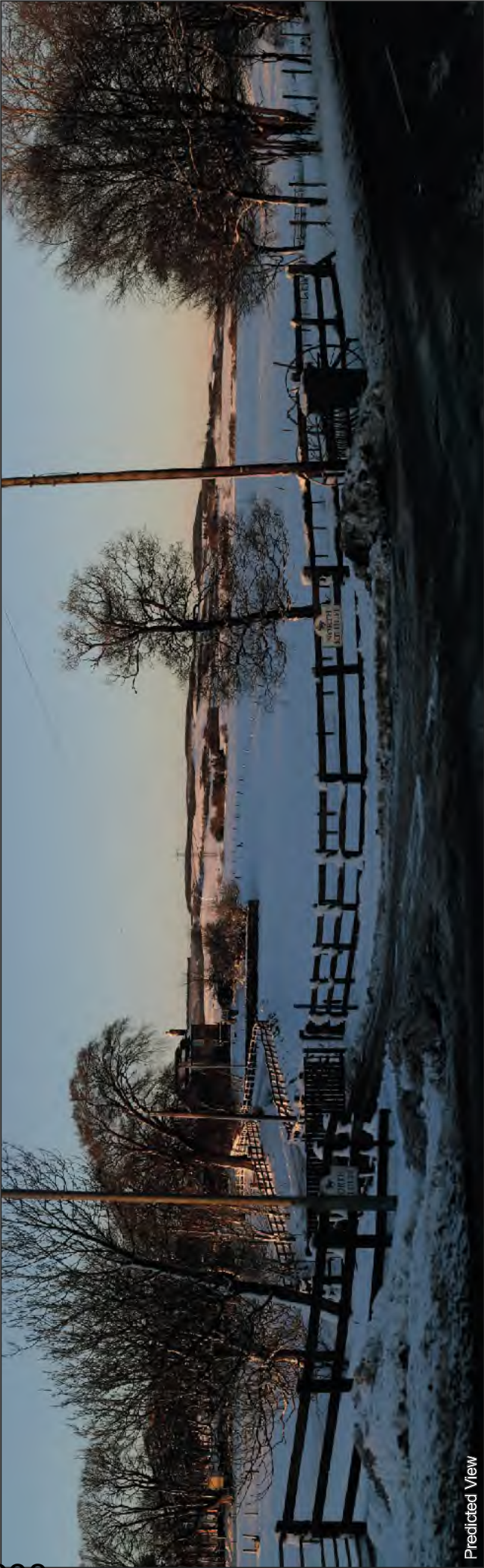
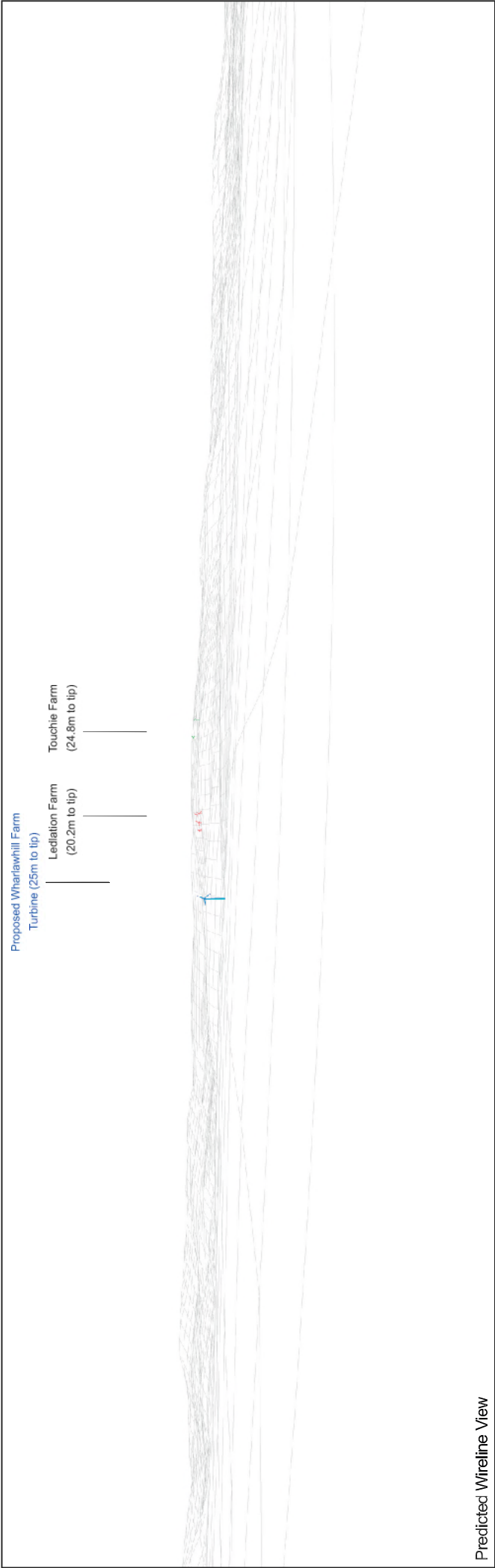




Figure 9: Photomontage and Wirelines
Viewpoint 7 - A977 layby near North Kilduff
Whartawhill Farm

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 20-Jan-18, 15:57

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 27°
Principle Distance: 812.5mm @ A3

OS Reference: 306134, 701422
Ground Level Elevation: 158m AOD
Bearing to Site Centre: 357 (NNW)
Distance to Nearest Turbine: 0.96km

Drawn by:
Checked by:
Approved by:

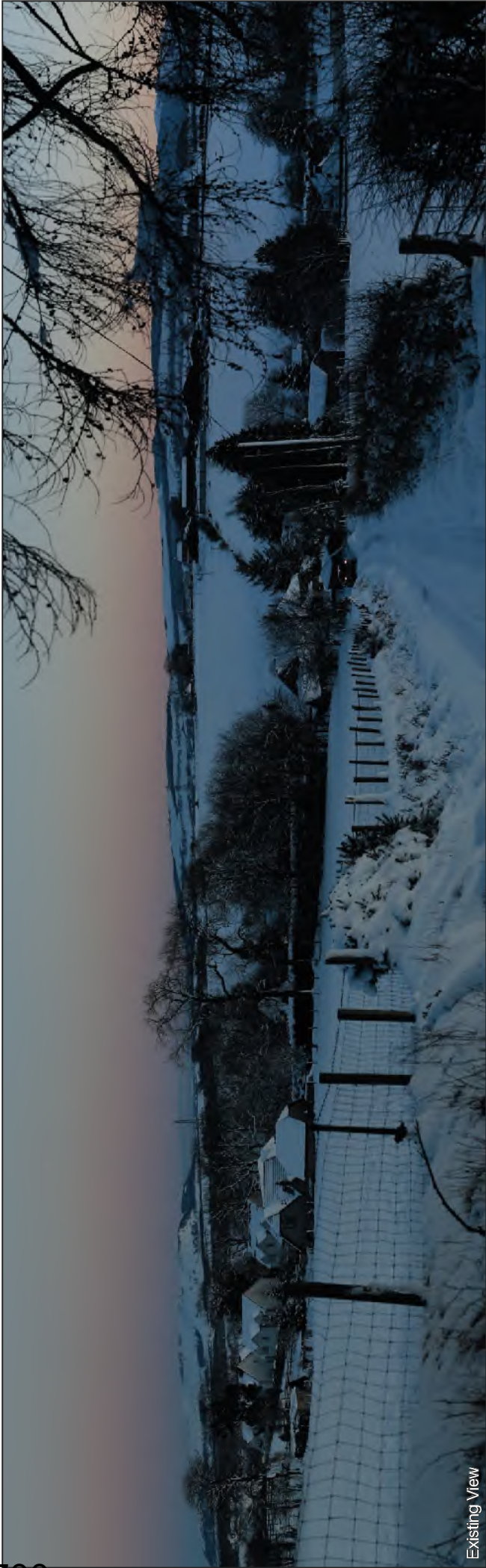
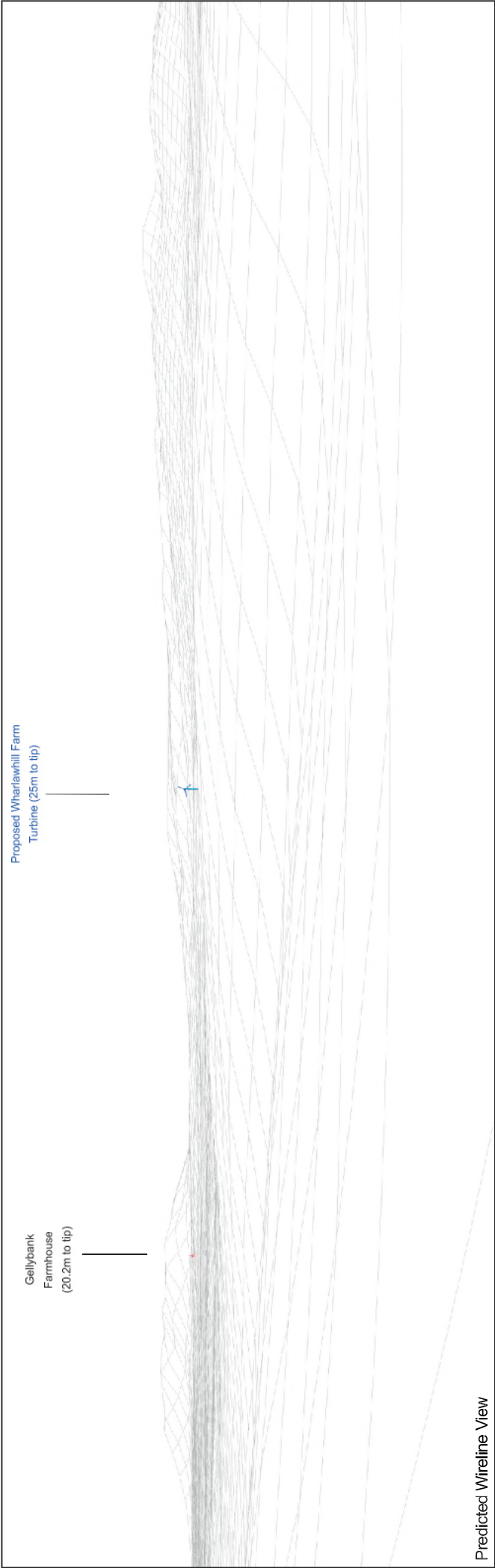
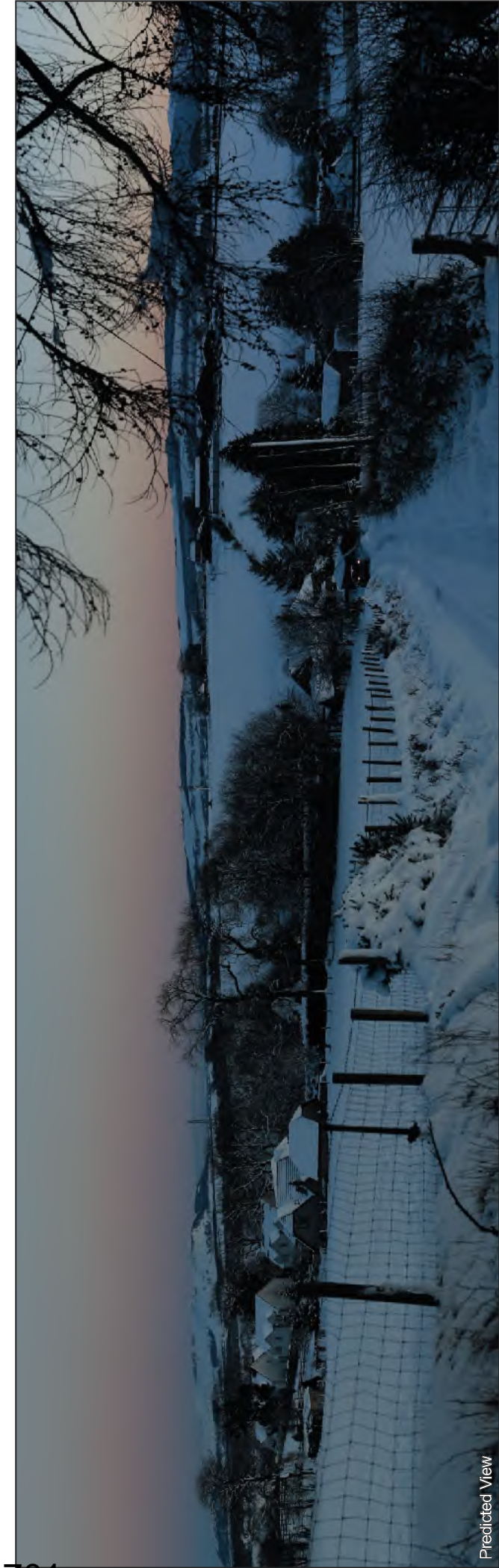
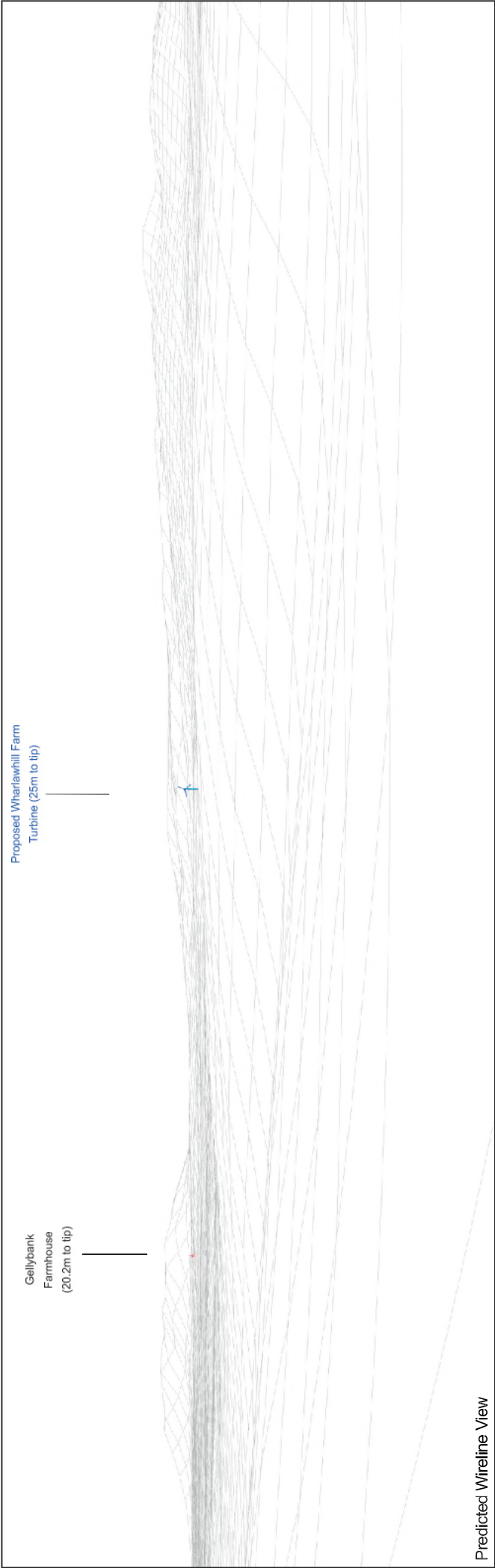


Figure 9: Photomontage and Wirelines



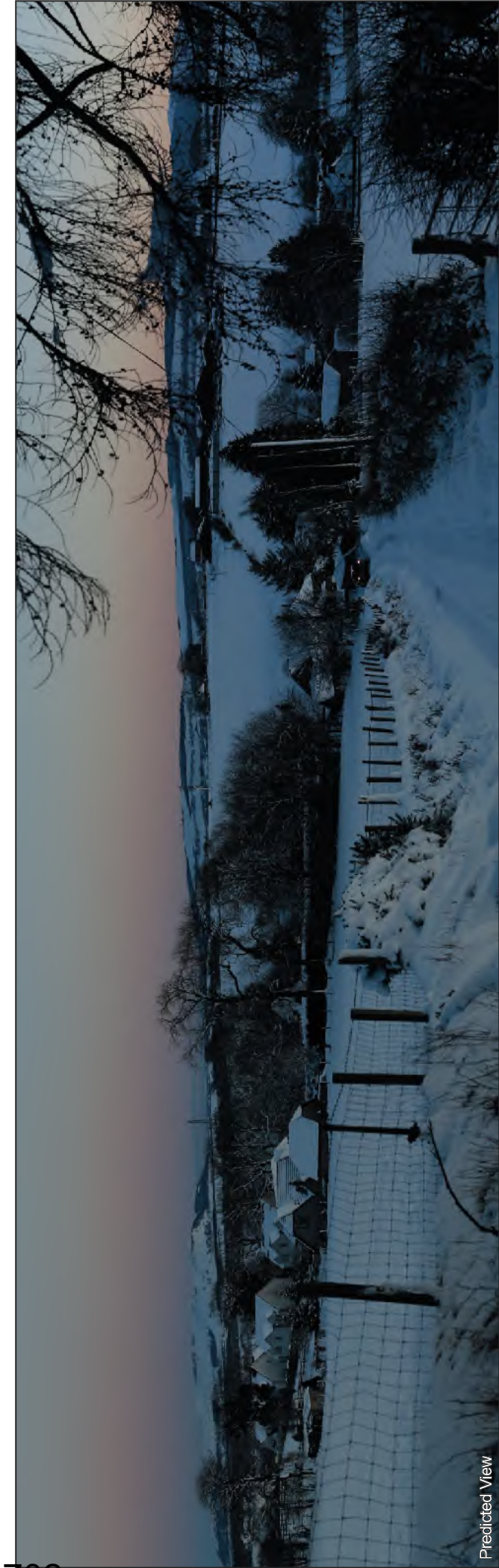
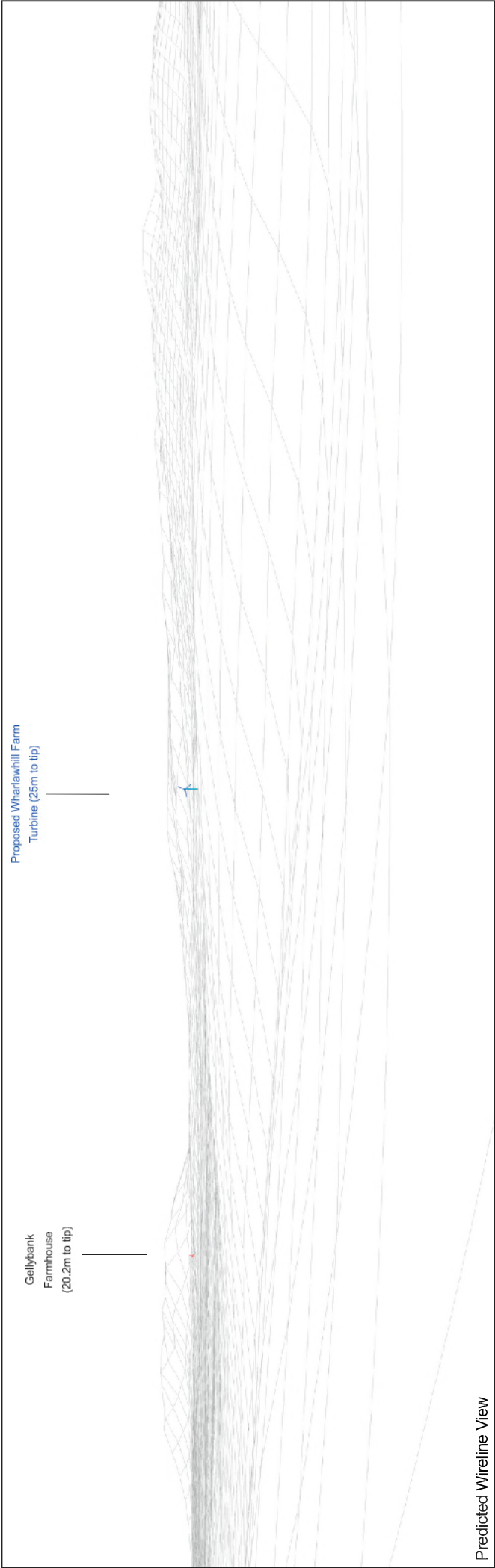


Figure 9: Photomontage and Wirelines
Viewpoint 8 - Core Path North of Cambo (Ochil Hills Special Landscape Area)
Wharlawhill Farm

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

OS Reference: 305255, 703362
Ground Level Elevation: 188m AOD
Bearing to Site Centre: 140 (SE)
Distance to Nearest Turbine: 1.28km

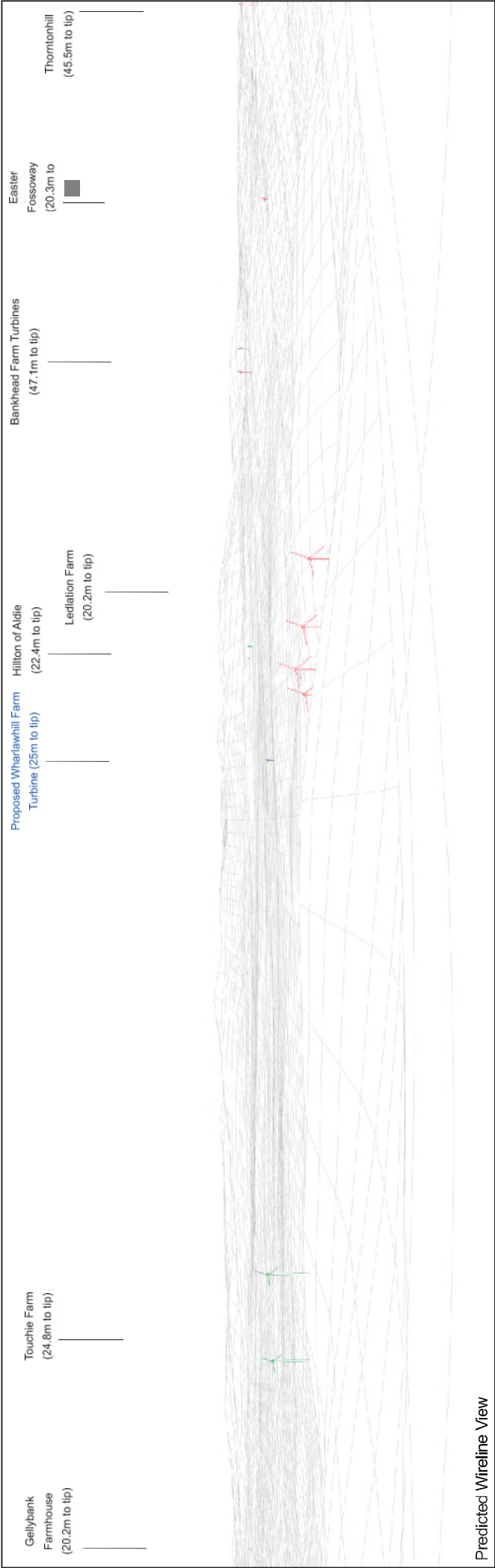
Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera Lens: 50mm
Camera/Viewer Height: 1.7m
Date of Photograph: 20-Jan-18, 16:27

Drawn by
Checked by
Approved by

Document Number:
6436_P0091_02

EndWind



Drawn by:
Checked by:
Approved by:

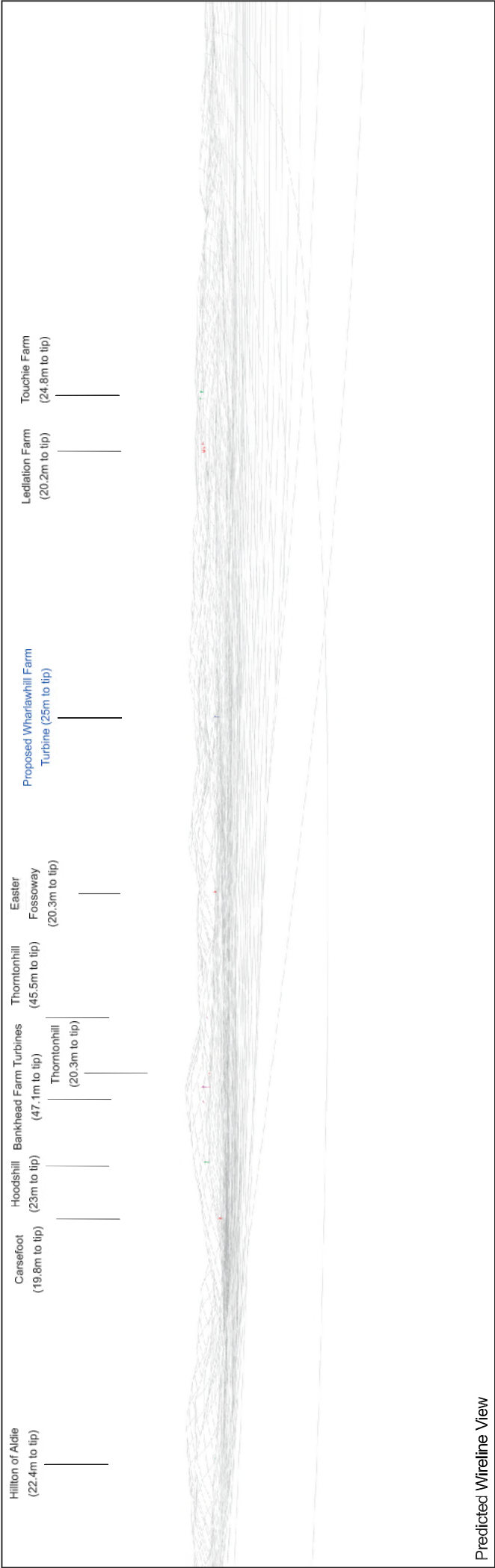
OS Reference: 306260, 705985
Ground Level Elevation: 332m AOD
Bearing to Site Centre: 184 (SSW)
Distance to Nearest Turbine: 3.61km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera/Viewer Height: 1.7m

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Figure 10: Photomontage and Wirelines
Viewpoint 9 - Core Path north of Arlick Hill
(Ochil Hills Special Landscape Area)
Wharlawhill Farm



Drawn by:
Checked by:
Approved by:

OS Reference: 308925, 698105
Ground Level Elevation: 132m AOD
Bearing to Site Centre: 325 (NW)
Distance to Nearest Turbine: 5.14km

Hub Height: 18.5m
Maximum Tip Height: 25m
Horizontal Field of View: 75°
Principle Distance: 300mm @ A3

Camera/Viewer Height: 1.7m

Proposed or Consented Wind Turbines
Wharlawhill Farm (This Scheme)
20m Tip Height
20m to 25m Tip Height
25m to 50m Tip Height

Figure 10: Photomontage and Wirelines
Viewpoint 10 - Core Path / Minor Road near B9097
(Cleish Hills)
Wharlawhill Farm

From: JRC Windfarm Coordinations <[REDACTED]>
Sent: 29 January 2018 08:58
To: Laura White
Subject: RE: EXTERNAL:BR1106 Wharlawhill Farm Fixed Links Request - Resubmission [WF980607]

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Laura,

A Windfarms Team member has replied to your coordination request, reference **WF980607** with the following response:

Dear Laura,

Site Name:

Wharlawhill Farm - JAN 2018

Turbine at NGR:

306075 702380

Hub Height: 18.5m **Rotor Radius:** 6.5m

*This proposal ***cleared*** with respect to radio link infrastructure operated by:*

The local electricity utility and Scotia Gas Networks

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal. Please note that due to the large number of adjacent radio links in this vicinity, which have been taken into account, clearance is given specifically for a location within the declared grid reference (quoted above).

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation

of your project.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

Regards

Wind Farm Team

The Joint Radio Company Limited



JRC Ltd. is a Joint Venture between the Energy Networks Association (on behalf of the UK Energy Industries) and National Grid.

Registered in England & Wales: 2990041

<http://www.jrc.co.uk/about-us>

We hope this response has sufficiently answered your query.

If not, please **do not send another email** as you will go back to the end of the mail queue, which is not what you or we need. Instead, **reply to this email keeping the subject line intact or login to your account** for access to your coordination requests and responses.

<https://breeze.jrc.co.uk/tickets/view.php?auth=01x2ycaaf5fiaaagaVRNIEvfuDQw%3D%3D>

Laura White

From: Spectrum Licensing <[REDACTED]>
Sent: 28 January 2018 03:51
To: Laura White
Cc: [REDACTED]
Subject: RE: EXTERNAL:BR1106 Wharlawhill Farm Fixed Links Request - Resubmission

FIXED LINK REPORT FOR WINDFARM CO-ORDINATION AREA

Dear Sir/Madam

Search Radius 500m at Centre NGR NO60752380. Search includes an additional 500m of requested radius.			
Links	Company	Contact	Telephone
0467457/1	Arqiva Limited	Keith Waudby	windfarm.en

These details are provided to Ofcom by Fixed Link operators at the time of their licence application and cannot be verified by Ofcom for accuracy or currency and Ofcom makes no guarantees for the currency or accuracy of information or that they are error free. As such, Ofcom cannot accept liability for any inaccuracies or omissions in the data provided, or its currency however so arising. The information is provided without any representation or endorsement made and without warranty of any kind, whether express or implied, including but not limited to the implied warranties of satisfactory quality, fitness for a particular purpose, non-infringement, compatibility, security and accuracy.

Our response to your co-ordination request is only in respect of microwave fixed links managed and assigned by Ofcom within the bands and frequency ranges specified in the table below. The analysis identifies all fixed links with either one link leg in the coordination range or those which intercept with the coordination range. The coordination range is a circle centred on your provided national grid reference. We add an additional 500 metres to the coordination range that you request. Therefore if you have specified 500 metres the coordination range will be 1km.

If you should need further information regarding link deployments and their operation then you will need to contact the fixed link operator(s) identified in the table above directly.

Additional coordination is also necessary with the band managers for the water, electricity and utilities industries which operate in the frequency ranges 457-458 MHz paired with 463-464 MHz band. You should contact both the following:

- Atkins Ltd at windfarms@atkinsglobal.com.
- Joint Radio Company (JRC) at windfarms@jrc.co.uk. Additionally, you can call the JRC Wind Farm Team on 020 7706 5197.

For self-coordinated links operating in the 64 - 66GHz, 73.375 - 75.875GHz and 83.375 - 85.875GHz bands a list of current links can be found at: <http://licensing.ofcom.org.uk/radiocommunication-licences/fixed-terrestrial-links/forms/>

Regarding assessment with respect to TV reception, the BBC has an online tool available on their website: http://www.bbc.co.uk/reception/info/windfarm_tool.html. Ofcom do not forward enquiries to the BBC.

Please note other organisations may require coordination with regard to your request. More information regarding windfarm planning is available on the British Wind Energy Association website <http://www.britishwindenergy.co.uk/>.

Table of assessed fixed links bands and frequency ranges

Band (GHz)	Frequency Range (MHz)
1.4/1.5	1350 -1375
	1450 -1452
	1492 -1530
1.6	1672 – 1690
1.7	1764 – 1900
2	1900 – 2690
4	3600 – 4200
6	5925 – 7110
7.5	7425 – 7900
11	10700 – 11700
13	12750 – 13250
14	14250 – 14620
15	14650 – 15350
18	17300 – 19700
22	22000 – 23600
25	24500 – 26500

28	27500 – 29500
38	37000 – 39500
50	49200 – 50200
55	55780 – 57000

Regards

Ofcom Spectrum Licensing

From: Laura White [mailto:[REDACTED]]
Sent: 26 January 2018 08:55
To: Spectrum Licensing [REDACTED]
Subject: EXTERNAL:BR1106 Wharlawhill Farm Fixed Links Request - Resubmission

Dear Sir / Madam,

Please find below the details for a Fixed Link Report Request:

Possible Wind Farm Development: Wharlawhill Farm, KY13 0NZ

- **NGR**, 306075, 702380
- **Site/town** Near Carnbo [REDACTED]
- **Email address for response** [REDACTED]
- **Search radius (optional)** 0m

Turbine Details:

Hub Height: 18.5m

Tip Height: 25m (6.55m blade diameter)

I look forward to your response.

Kind regards,

Laura White
Project Manager

Telephone: [REDACTED]

Laura White

From: Keith Waudby <[REDACTED]>
Sent: 29 January 2018 16:46
To: Laura White; Wind Farm Enquiries
Subject: RE: BR1106 Wharlawhill Farm Fixed Links Request - Resubmission

Hi

Your development is located 8.5Km North of our nearest SHF link site

Happy for this to proceed

Keith Waudby
Principal Microwave Engineer
Arqiva

[REDACTED]
www.arqiva.com

From: Laura White [REDACTED]
Sent: 29 January 2018 09:02
To: Wind Farm Enquiries [REDACTED]
Subject: BR1106 Wharlawhill Farm Fixed Links Request - Resubmission

This mail originated from OUTSIDE the Arqiva Corporate Network. Treat hyperlinks and attachments in this email with caution.

Dear Mr Waudby,

Your details have been passed over by Ofcom regarding a fixed link in the vicinity of the following proposal. Please note this a resubmission of some 50m from a previous application whereby there was no Arqiva link in the vicinity. The total height to tip is 25m.

Please find below the details for a Fixed Link Report Request:

Possible Wind Farm Development: Wharlawhill Farm, KY13 0NZ

- **NGR**, 306075, 702380
- **Site/town** Near Carnbo
- **Email address for response** [REDACTED]
- **Search radius (optional)** 0m

Turbine Details:

Hub Height: 18.5m
Tip Height: 25m (6.55m blade diameter)

I look forward to your response.

Kind regards,

Laura White
Project Manager

[REDACTED]
Website: www.ecotricity.co.uk

From: [REDACTED]
To: [REDACTED]
Subject: WF 32858 - Wharlawhill Farm - Near Cambo - NO 06075 02380
Date: 01 February 2018 09:54:52

Dear Sirs,

I am responding to an email of 28-01-2018, regarding the above named proposed development.

The above application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have **NO OBJECTION** to your proposal.

Please note that this is **not** in relation to any Microwave Links operated by Scottish Water

Atkins Limited is responsible for providing Wind Farm/Turbine support services to TAUWI.

Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry. Web: www.tauwi.co.uk

Windfarm Support

ATKINS

The official engineering design services provider
for the London 2012 Olympic and Paralympic Games
Web: www.atkinsglobal.com/communications

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Consider the environment. Please don't print this e-mail unless you really need to.

H15 Noise Report

Issue 02

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1. Introduction

This document presents the results of an acoustic sound test on a H15 turbine.

The testing has been performed by Britwind and uses two different noise assessment methods. The first method follows the process defined in the BWEA Performance and Safety standard¹ and the second reports the data according to the ETSU-R-97 guidelines².

2. Noise Measurements

Audible noise measurements were made using a Pulsar P33 sound level meter with a ½ inch microphone. The microphone was positioned at the centre of a 1 metre diameter, 12mm thick ground board made from plywood. The board was accurately placed 25m downwind of the tower for each measurement series, resulting in a slant distance (rotor centre to microphone) of 31.8m. Wind speed was measured at a hub height of 19.6m.

3. BWEA Performance and Safety standard

Noise versus wind speed at hub height was measured for the turbine running and for the turbine stopped (i.e. background noise). 201 data pairs of wind speed and noise for the turbine running and 25 data pairs of wind speed and noise for the turbine parked were obtained. Figure 1 shows the relationship between these two sets of data.

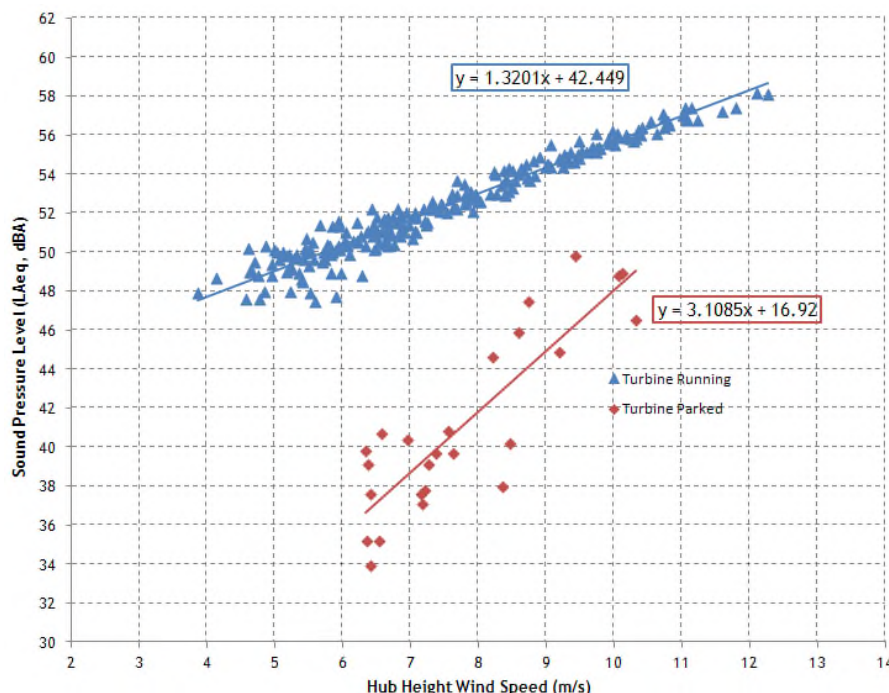


FIGURE 1 - SOUND PRESSURE LEVEL ON THE GROUND BOARD AT A SLANT DISTANCE OF 31.8M (1)

Figure 2 shows the data from Figure 1 plus the background corrected sound pressure levels (i.e. the wind turbine specific noise after the removal of the contribution from the background noise). These points were calculated from the turbine running and turbine parked linear regression lines.

The background corrected regression line was then used to calculate the Apparent Emission Sound Power Level at 8m/s using the following expression:

$$L_{W,8m/s} = L_{Aeq,8m/s} - 6 + 10\log(4\pi R_1^2 / S_0)$$

Where the 6dB is a correction for the board reflection, R_1 is the 31.8m slant distance and S_0 is a reference area $1m^2$.

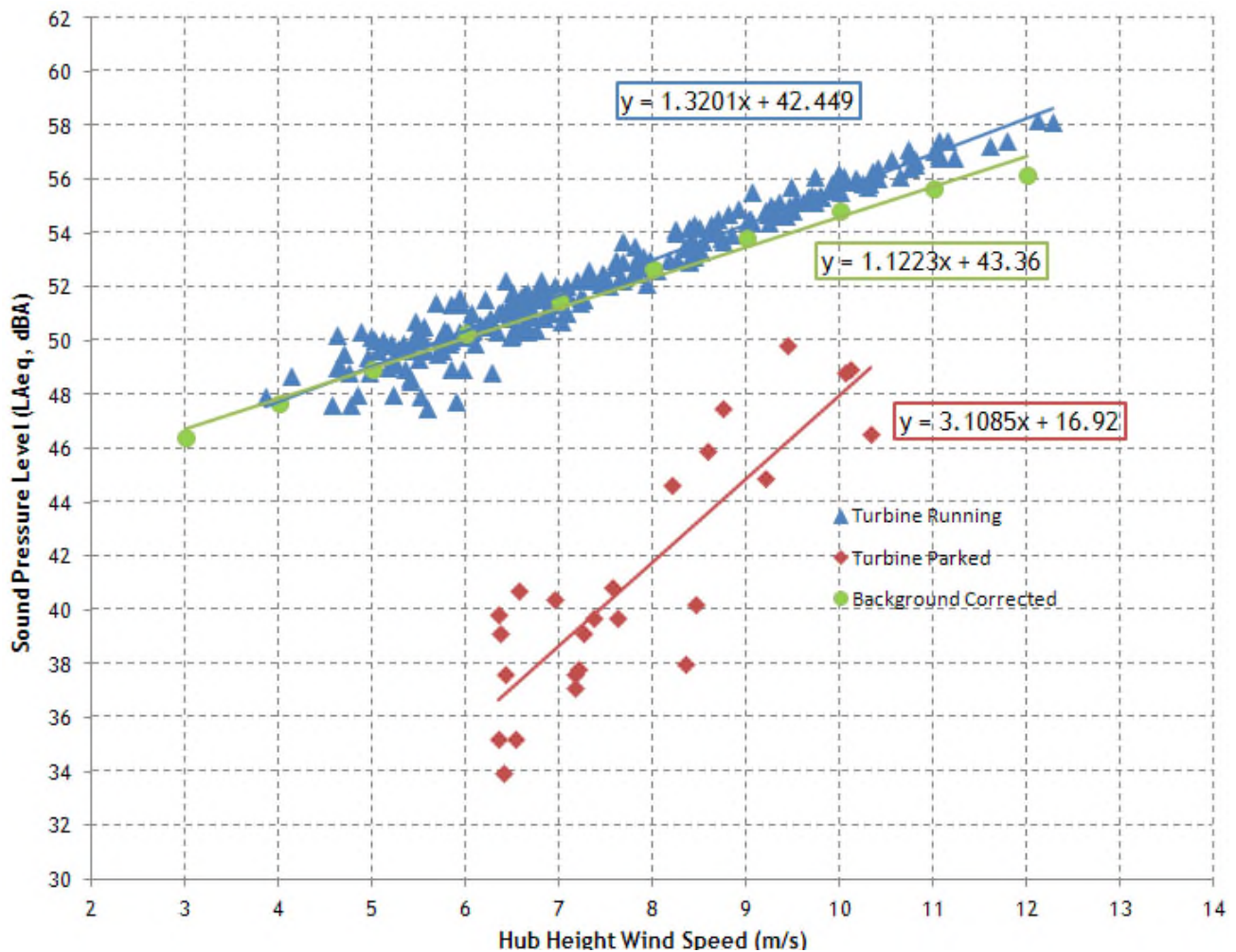


FIGURE 2 - SOUND PRESSURE LEVEL ON THE GROUND BOARD AT A SLANT DISTANCE OF 31.8M (2)

In order to calculate the Declared Emission Sound Power Level at 8m/s an estimate of the combined uncertainty has to be made. Due to the measurements being extremely consistent the combined uncertainty was estimated to be 1.2dB, resulting in a Declared Emission Sound Power Level of **89.7dBA**.

Table 1 shows a summary of the results.

TABLE 1 - NOISE EMISSION SOUND POWER LEVEL

Parameter	Value at a Hub Height Wind Speed of 8m/s
Apparent Emission Sound Power Level, $L_{W,8m/s}$ (dB)	87.7
Declared Apparent Emission Sound Power Level, $L_{W,8m/s}$ (dB)	89.7
Wind Speed Dependence, S_{dB} (dB/m/s)	1.12

3.1. Noise Immission

All measurements were made 25m (horizontal distance) downwind of the turbine on a ground board. Estimates can however be made for free field noise immission at any distance from the turbine using the results shown in Table 1. The method used was that provided in the BWEA standard¹. The standardised noise map for the 15kW wind turbine is shown in Figure 3.

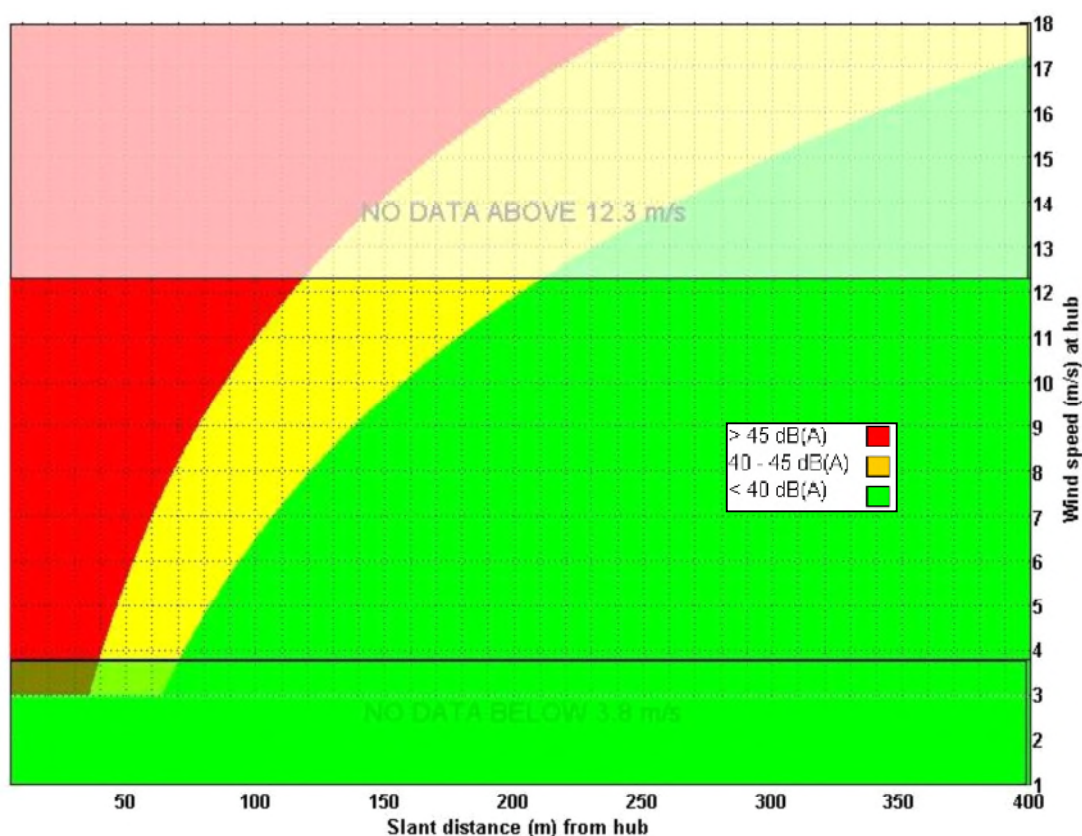


FIGURE 3 - NOISE MAP

In addition to the noise map two indicators were calculated at fixed slant distances (25m and 60m) at the reference hub height wind speed of 8m/s. For the 15kW wind turbine these are:

- The BWEA reference 25m sound level, $L_{p,25m} = 53.7\text{dB(A)}$
- The BWEA reference 60m sound level, $L_{p,60m} = 46.2\text{dB(A)}$

No measurements of directivity were undertaken but the turbine was subjectively much quieter in the plane of the blades (perpendicular to wind direction) than the measured downwind location.

4. ETSU-R-97

The analysis was based on the same 201 data pairs of wind speed and noise for the turbine running and 25 data pairs of wind speed and noise for the parked turbine. The measured hub height wind speed was standardised to 10m. Figure 4 shows the data along with the background corrected sound pressure levels (i.e. the wind turbine specific noise after the removal of the contribution from the background noise). These points were calculated from the turbine running and turbine parked regression lines.

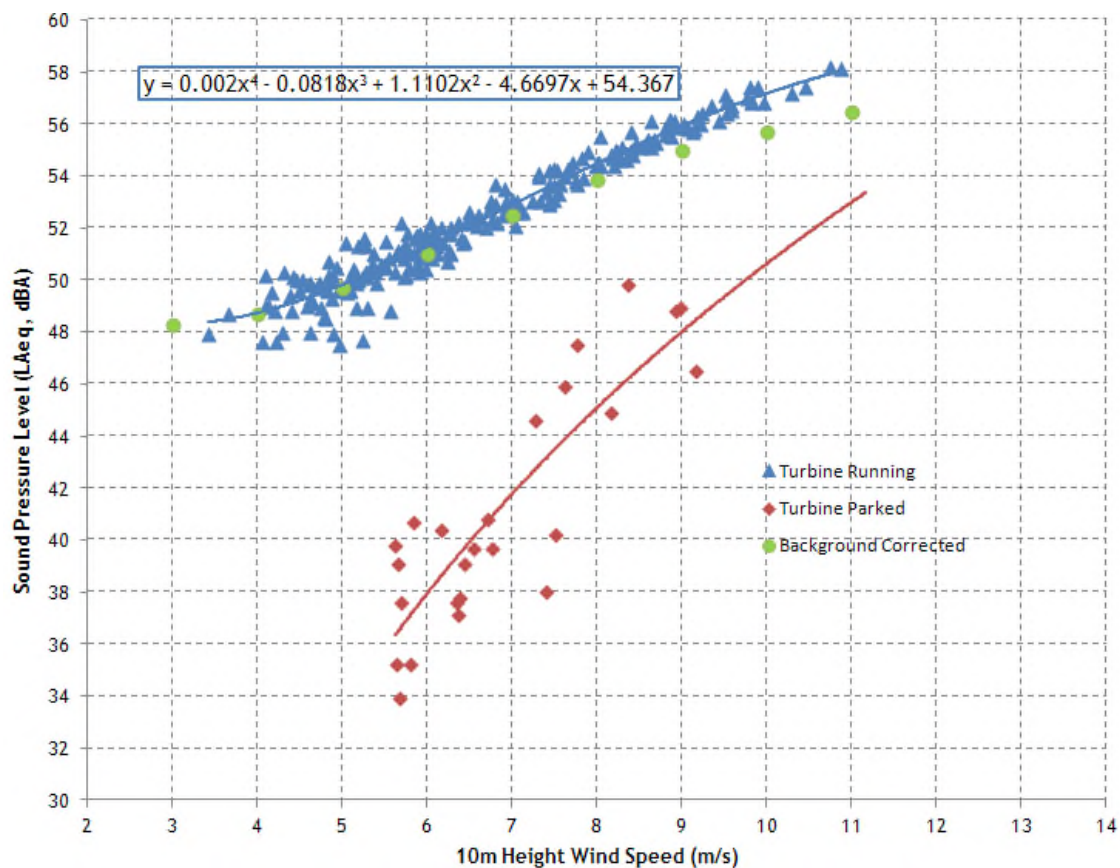


FIGURE 4 - SOUND PRESSURE LEVEL ON THE GROUND BOARD AT A SLANT DISTANCE OF 31.8M (3)

Each background corrected sound pressure level was then used to calculate the Apparent Emission Sound Power Level at each integer wind speed using the following expression:

$$L_W = L_{Aeq} - 6 + 10\text{Log}(4\pi R_1^2 / S_0)$$

Where the 6dB is a correction for the board reflection, R_1 is the 31.8m slant distance and S_0 is a reference area 1m^2 .

In order to calculate the Declared Emission Sound Power Levels an estimate of the combined uncertainty has to be made. Due to the measurements being extremely consistent the combined uncertainty was estimated to be 1.2dB, resulting in the values shown in Table 2.

TABLE 2 - SOUND POWER LEVELS

	10m Height Wind Speed (m/s)								
	3	4	5	6	7	8	9	10	11
Apparent Emission Sound Power Level, L_w (dB)	83.3	83.7	84.7	86.1	87.5	88.9	90.0	90.8	91.5
Declared Apparent Emission Sound Power Level, L_w (dB)	85.3	85.7	86.7	88.0	89.5	90.8	92.0	92.7	93.5

Using the Declared Apparent Sound Power levels the estimated sound pressure levels at various distances were calculated in accordance with ISO 9613-2³.

The assumptions made when calculating the sound pressure levels were:

- 1dB/km atmospheric attenuation. This is the lowest coefficient listed at 250Hz and is stated at 10°C and 70% relative humidity.
- The ground between the wind turbine and the receiver is 'MIXED GROUND' ($G=0.5$), i.e. 50% 'hard' such as concrete and 50% 'porous' such as farm land.
- The receiver is located 4m above ground level.
- There is no screening that would attenuate the noise further. Attenuation due to dense foliage can result in approximately 1dB every 20m.

Table 3 shows the estimated $L_{A,90}$ sound pressure levels at various slant distances. The values are based on the sound power levels shown in Table 2.

TABLE 3 - SOUND PRESSURE LEVELS AT VARIOUS DISTANCES FROM THE TURBINE HUB

Wind speed at 10m height (m/s)	3	4	5	6	7	8	9	10	11
Slant distance (m)									
60	37.48	37.87	38.88	40.21	41.65	43.01	44.14	44.90	45.62
80	34.86	35.25	36.26	37.59	39.03	40.39	41.52	42.28	43.00
100	32.83	33.23	34.23	35.57	37.00	38.36	39.49	40.25	40.97
120	31.18	31.58	32.58	33.92	35.35	36.71	37.84	38.61	39.33
140	29.79	30.19	31.19	32.53	33.96	35.32	36.45	37.22	37.94
160	28.59	28.99	29.99	31.33	32.76	34.12	35.25	36.02	36.74
180	27.53	27.93	28.94	30.27	31.71	33.07	34.20	34.96	35.68
200	26.59	26.99	27.99	29.33	30.76	32.12	33.25	34.01	34.73
220	25.74	26.13	27.14	28.47	29.91	31.27	32.40	33.16	33.88
240	24.96	25.35	26.36	27.69	29.13	30.49	31.62	32.38	33.10
260	24.24	24.63	25.64	26.97	28.41	29.77	30.90	31.66	32.38
280	23.57	23.97	24.97	26.31	27.75	29.11	30.23	31.00	31.72
300	22.95	23.35	24.35	25.69	27.13	28.49	29.61	30.38	31.10

4.1. Simplified Assessment Method

ETSU-R-97 does provide a simplified method of assessment. It states that If it can be demonstrated that the estimated wind turbine noise is limited to an $L_{A,90}$ of 35dB(A) up to wind speeds of 10m/s at 10m height then this condition alone would offer sufficient protection of amenity without considering the actual background noise at the site under consideration.

Figure 5 shows that a minimum slant distance (distance from turbine hub to point of interest) of **180m** is required in order for the noise levels to be below an $L_{A,90}$ of 35dB(A) up to wind speeds of 10m/s at 10m height.

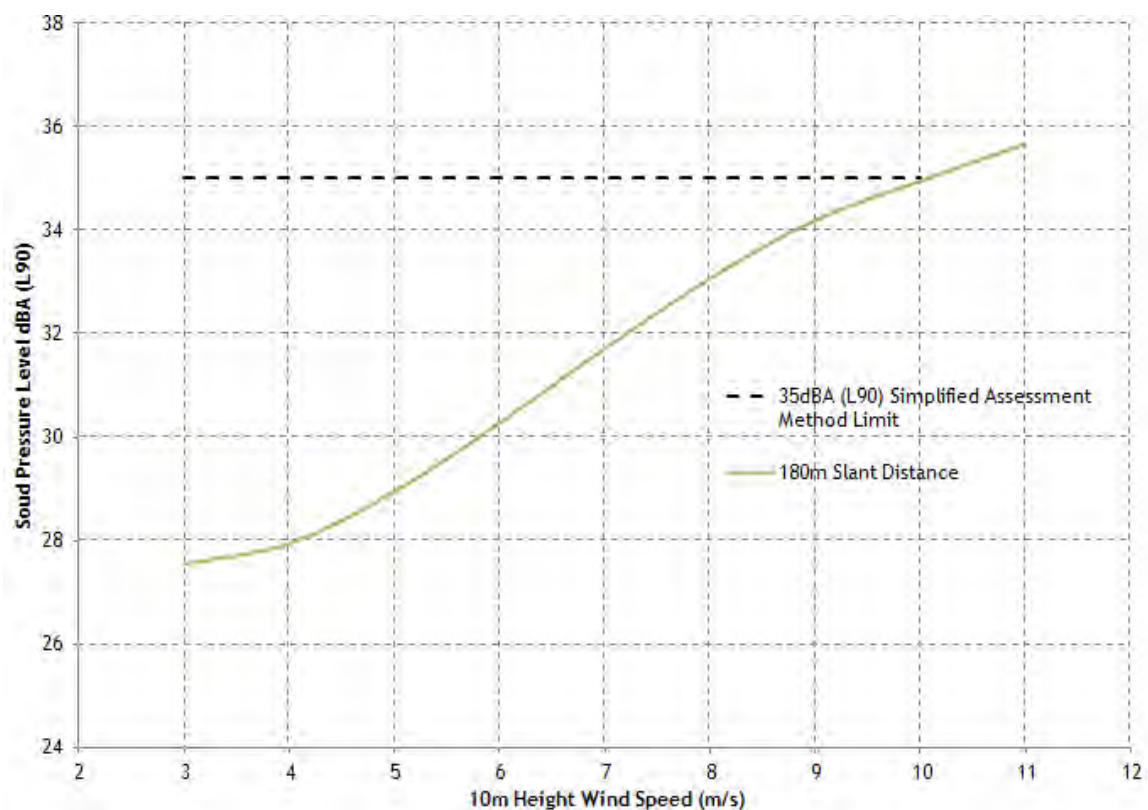


FIGURE 5 - SIMPLIFIED ASSESSMENT METHOD RESULTS

Table 4 shows a summary of the equivalent minimum slant distances for one, two and three wind turbines. It has simply been assumed that the multiple turbines are at the same location. Although clearly this is not possible in practice, such an approach gives an initial indication of the impact of using multiple turbines and will be conservative if the results in the table are applied to the turbine closest to the noise sensitive property. Case by case calculations may be required where such an approach is too crude.

Number of turbines	Slant distance required to achieve an $L_{A,90}$ of 35dB(A) up to wind speeds of 10m/s at 10m height
1	180m
2	251m
3	305m

TABLE 4 - SUMMARY OF RESULTS FOR 1, 2 AND 3 TURBINES

5. References

1. Small Wind Turbine Performance and Safety Standard. British Wind Energy Association. 29 Feb 2008
2. The Assessment and Rating of Noise from Wind Farms, ETSU-R-97
3. ISO 9613-2, Acoustics - Attenuation of sound during propagation outdoors, 1996

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15kW Wind Turbine

- Specifically designed for high reliability and low maintenance
- Two versions – optimised for use in high and lower wind speed sites
- Exceptionally low payback times
- Conforms to IEC 61400-2 (ed3) international standard
- MCS accreditation makes the turbine eligible for Feed-in-Tariffs in the UK



The Britwind H15 is a state of the art small wind turbine, designed by the same team that developed the market leading Britwind R9000 wind turbine.

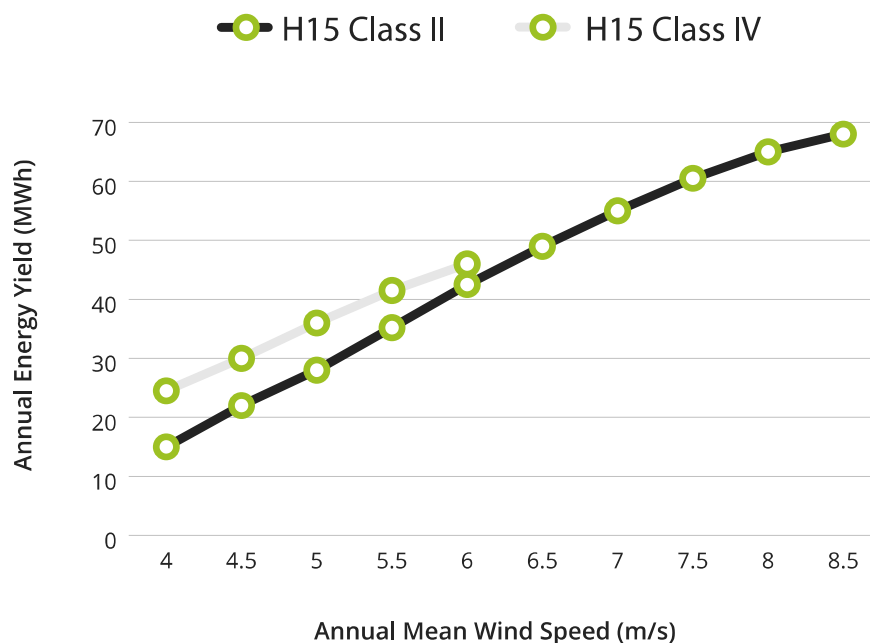
The whole concept of the Britwind H15 has been has been engineered with robustness, high reliability and low maintenance in mind, with the only wearing parts being the rotor bearing, the yaw bearing and the anemometer.

The turbine also has class leading performance to installed cost ratio.

There are two versions of the turbine; the Class II (as per IEC 61400-2) for the windiest sites, and the large rotor Class IV, which has exceptional performance at lower wind speeds.

Annual Energy Yield vs Annual Mean Wind Speed

This document provides indicative data for the H15 wind turbine.



Specification

Architecture	Upwind, 3 bladed rotor, self regulating	
Control Method	Stall regulated	
Blade	Fully optimised aerofoil ensuring maximum yield and minimum noise. Low reflection, UV & anti-erosion coatings	
Generator	Brushless direct drive, air-cored high efficiency radial flux permanent magnet alternator	
Gearbox	None required (see generator)	
Primary Brake	Electrical brake	
Secondary Brake	Aerodynamic brake	
Yaw Control	Passive using tail vane, for low maintenance	
Tower	Free-standing monopole, hydraulic ram tilt.	
Tower Foundation	Reinforced concrete pad	
Design Longevity	20 years design life	
Design Temperature Range	-20°C to +50°C	
IEC 61400-2 Turbine Class	Class II	Class IV
Design maximum wind conditions	60m/s gust 8.5m/s AMWS	42m/s gust 6m/s AMWS
Rotor	Diameter: 10.4m Speed: 100rpm nominal	Diameter: 13.1m Speed: 73rpm nominal
Tower height	14.5m (23m option)	18m
Noise	Measured sound power at 8m/s at hub height: 88.6dB Declared sound power at 8m/s at hub height: 89.9dB	Awaiting test results – expected to be lower than the Class II.
Maximum Power	16kW (600 second average) 20kW (1 second average) – 3 phase* 17kW (1 second average) – 1 phase*	12kW (600 second average). 17kW (1 second average) – 3 phase* 17kW (1 second average) – 1 phase*
Reference Power (11m/s @ hub height)	14.5kW – 3 phase 14.5kW – 1 phase	12kW – 3 phase 12kW – 1 phase

*The peak export power can be capped to a lower value if required.



SUPPORTING STATEMENT

Single Britwind 15kW Small Wind Turbine at Wharlawhill Farm, KY13 0NZ

Prepared for Perth & Kinross Council

March 2018

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- 1 Britwind H15 Brochure**
- 2 Britwind H15 Noise Report**
- 3 Fixed Link Responses – No Objections**

1 PROJECT DESCRIPTION

This supporting statement accompanies an application submitted by Britwind to Perth and Kinross Council ('PKC' or 'the Council') for planning permission to install a single (1no.) wind turbine and associated underground cabling at Wharlawhill Farm near Carnbo. This application follows a similar application for two wind turbines (17/01902/FLL) which was refused on landscape and ecology grounds on 8th December 2017. The previous application was for two smaller machines (14.5m to hub and 20.2m to tip height). This single turbine application is for a slightly taller machine with an 18.5m hub and 25m tip height.

1.1 Reasons for this Application

This application aims to deal with the reasons for refusal summarised below:

1. The location means the site would be visible from viewpoints across a significant part of the Loch Leven Basin landscape character area. The scale of the wind turbines would result in unacceptable adverse landscape impact having regard to landscape character and setting within the immediate landscape and wider landscape character types.
2. The proposal would give rise to unacceptable cumulative landscape and visual impacts.
3. The application will adversely affect the special landscape quality of the designated Ochil Hills.
4. No detailed evidence has been submitted to demonstrate the proposal will not impact detrimentally on protected or priority species.

The reduction from two turbines to one will reduce the cumulative impact across the local area. Wind energy development is not uncommon locally with some ten cumulative schemes within 5km, with a maximum tip height of 47.1m. Furthermore the single turbine shares the same field as a large electricity pylon, some 35m tall, as such this turbine is in keeping with the surrounding development heights. The impact on the Ochil Hills has been assessed with additional photomontages and viewpoints, which note wind energy schemes closer to the viewer when assessed from the local core paths – these have been discussed with the case officer at Perth and Kinross Council. Additional ecological information has been sourced and reference is made to this to ensure that the proposal will not impact on protected or priority species.

1.2 Summary of Key Data

The farm has been identified as having good potential for wind energy development with this horizontal axis wind turbine generating a maximum capacity of 15kW. The electricity produced will be used to directly supply Wharlawhill Farm to satisfy onsite demand. Any excess energy generated would be exported to the distribution network through the existing onsite grid connection.

The site's estimated annual average wind speed of 6.2m/s at tip height indicates the proposed location is very good for wind generation. The expected generation of approximately 48,000 kilowatt-hours (kWh) of electricity per annum would contribute towards the annual electricity demand of the farm being met onsite. This proposed development could also contribute to the



reduction of carbon emissions with an estimated annual saving of some 17 tonnes of carbon dioxide per annum¹.

Britwind H15 15kW turbine key facts:

- The Class IV H15 turbine consists of an 18m tower, 18.5m to hub height and with a 13.1m rotor diameter. The overall height to blade tip is 25m.
- The turbine is a modern British designed and built structure with a tapered tubular tower and three blades attached to a direct drive generator.
- The turbine is small enough to be delivered on a regular goods vehicle with no specialised equipment (e.g. a crane) required to erect it due to the built in lifting mechanism.
- The circular concrete foundations have a diameter of up to 5m with the internal re-bar cage prefabricated off-site to allow for easier delivery and installation on site.

The overall height of each turbine, expressed as total height to the tip of the blades, in this proposed development is below 30m, hence it is classed in the 'Community Cluster' category for wind energy proposals² under 2005 guidance (page 6), and would fall into the lower end of the 'Small' category as farm-sized under the draft 2017 guidance³ (page 19).

The delivery of the turbines and associated development will be via the local road network utilising the A977 and the unnamed roads used to access the property. Their small scale means only a single flatbed lorry will be required for the delivery of each turbine.

¹ Gov.uk conversion factors guidelines for 2017 <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2017>

² Supplementary Planning Guidance for Wind Energy Proposals in Perth and Kinross Wind Energy, May 2005 http://www.pkc.gov.uk/media/13439/Wind-Energy-Supplementary-Guidance/pdf/WindEnergy_SPG_May2005_1_

³ Renewable and Low Carbon Energy Supplementary Guidance: Consultation Draft; Perth and Kinross – The Environment Service, July 2017 <http://www.pkc.gov.uk/media/39833/PKCRenewableSG-Draft/pdf/PKCRenewableSG-Draftv1-31>

2 DESIGN

2.1 Site Location and Description

Wharlawhill Farm is located approximately 1km south of Carnbo and 5.7km west of Kinross. The property itself is very remote being surrounded by farmland with very few neighbouring properties sparsely dispersed around the area. The nearest public highway is Gelvan Moor Road approximately 730m west of the proposed turbine with access from this road via the farm track. See **Figure 1** for the Location Plan.

The nearest residential properties are Wharlawhill Farm Cottages 430m to the north west of the proposed development, owned by the landowner of Wharlawhill Farm and rented to third parties. All further third party properties are 775m or more from the proposed turbine.

The proposed development is to be located in the field to the south east of the farm currently grazed by sheep. Pylons are already present in the vicinity, the closest is 50m south east of the proposed turbine.

The site is not located within, or adjacent to, any national or local landscape, heritage or ecological designation.

2.2 Site Layout

The Site Plan (**Figure 2**) shows the red line site boundary of the development encompassing the proposed turbine; associated cable route and access back to the public highway.

The proposed turbine siting has been largely determined by the comments of the previous application and relevant technical, planning and physical constraints, see **Figure 3**. The proposed location has been optimised to provide as clean and turbulence-free supply of wind as possible while maintaining as much distance from neighbouring properties and mitigating any visual impact to the local area as far as possible. This includes reducing the number of turbines from the previous application, as well as siting the remaining turbine closer to the existing pylon so that it is keeping with electrical infrastructure in the vicinity.

There would be no impact or damage to any stone walls separating the fields within the property. Existing tracks will be also used where possible so no new access track is required to deliver and construct the turbine. The cable run from the turbine to the point of connection (within the property of Wharlawhill Farm) has also been routed along the shortest possible path to minimise disturbance of existing land use and avoid existing features such as stone walls and trees. The proposed route is approximately 560m long and for the majority runs alongside the field boundary.

2.3 Turbine Specification

The installation consists of a single (1no.) 15kW Britwind H15 wind turbine, mounted on free-standing 18.5m galvanized steel tower, with concrete pad foundations. The turbine is a three-bladed horizontal-axis propeller design, with a rotor diameter of 13.1m. The overall height of the turbine, expressed as total height to the blade tip, is 25m. An elevation drawing of the turbine is shown in **Figure 4**, along with the Britwind H15 Brochure submitted as **Appendix 1**.

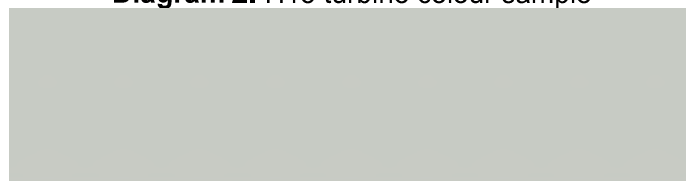
The small scale of the turbines, with a tapering tower to the hub and slender blade design is a key design feature which reduces visibility over medium to long distances. The proposed turbine tower will be of monopole construction made from galvanised steel whilst the turbine blades will be constructed from glass fibre and polyester resin.

Diagram 1: An H15 turbine fully installed



All components will be RAL 9018 Papyrus White which can be described as light grey in colour. This is to look unobtrusive against both skyline and rural backdrops.

Diagram 2: H15 turbine colour sample



RAL 9018 Papyrus White

2.4 Construction

The circular concrete foundations for each turbine will be no more than 5m in diameter and up to 1m deep as shown in **Figures 5.1 and 5.2**. The foundations consist of the re-bar cage which is prefabricated off-site, delivered in sections and slotted together in the foundation hole before the concrete is poured. The tower and turbine components will be assembled on the ground before being mounted onto the foundation to allow for easier and safer access during construction. The turbines will then be raised into position using the built in lifting mounts fitted to the foundation so there is no requirement for external lifting equipment (such as a crane) to raise the turbine.

The proposed development will comprise the following work:

- Ground excavation and installation of the H15 foundation bases measuring up to 5m in diameter.
- Excavation of a trench approximately 560m long, 0.5m wide and 0.6m deep to lay the underground cabling before backfilling between the turbines and metered connection point within the main building.
- Ground based turbine assembly before being raised into position.

The laying of the underground cable will not require the loss of trees or hedges. Any soil and turf removed for the excavation of the cable trench will be set aside and immediately replaced following the laying of the cable. This will ensure the surrounding environment is reinstated back to its original condition upon completion. The cable route has also been designed to avoid disturbance to the existing stone walls around the fields to ensure no damage will occur. The connection point is within the main farm building, therefore no external electrical housing unit would be required.

Diagram 3: Example of re-bar cage installed onsite



Diagram 4: A typical H15 Foundation



Diagram 5: A typical trench for laying of the cable



3 PLANNING POLICY AND GUIDANCE

An application for the development of a wind project should be assessed in the context of national policy and guidance, local planning authority development plan, and supplementary planning guidance.

3.1 Scottish Government Planning Policy

The **Scottish Energy Strategy**⁴ (SES) and **Onshore Wind Policy Statement**⁵ (OWPS) both published in December 2017 are material considerations. The SES sets out a vision of Scotland for 2050 *“delivering secure, affordable, clean energy for Scotland’s households, communities and businesses”*. Onshore wind is identified as a key technology and the SES states *“we will push for UK wide policy support for onshore wind, and take action of our own to prioritise and deliver a route to market – combined with a land use planning approach which continues to support development while protecting our landscapes”*. Small wind is specifically mentioned in the foreword to *“help meet energy demand at a household or community level.”*

The OWPS foreword notes: *“our energy and climate change goals mean that onshore wind will continue to play a vital role in Scotland’s future – helping to substantively decarbonise our electricity supplies, heat and transport systems, thereby boosting our economy.”* This supporting statement demonstrates that the carefully considered development has sought to achieve a well-designed proposal with acceptable impacts, whilst at a local level generating a valuable contribution to renewable energy and electricity targets.

Scottish Planning Policy⁶ 2014 (SPP) sets out national planning policies which reflect Scottish Ministers' priorities for the development and use of land and provides strong support for renewable energy development. The SPP states that *“development plans should support all scales of development associated with the generation of energy and heat from renewable sources”*.

The SPP in relation to onshore wind development advises that *“Proposals for energy infrastructure developments should always take account of spatial frameworks for wind farms and heat maps where these are relevant. Considerations will vary relative to the scale of the proposal and area characteristics”*. Such considerations listed include economic impact, contribution to renewable energy targets and emissions, cumulative impacts, impacts on communities, landscape and visual, natural and cultural heritage, aviation, telecommunication, traffic and decommissioning.

The **National Planning Framework**⁷ sets the context for development planning in Scotland and provides a framework for the spatial development of Scotland. National Planning Framework 3 (NPF3) was published in June 2014 and focuses on supporting the transition to a low carbon economy with the need to reduce energy use and to generate energy from renewable sources. Chapter 3 titled *“A Low Carbon Place”* sets out the Scottish Governments vision for achieving this. It recognises in 3.4 that *“We have a significant wind resource, both on and offshore, and electricity generation from wind continues to rise.”* With paragraph 3.9 stating *“We want to continue to capitalise on our wind resource”*.

⁴ Scottish Energy Strategy, 2017 <http://www.gov.scot/Resource/0052/00529523.pdf>

⁵ Onshore Wind Policy Statement, 2017 <http://www.gov.scot/Resource/0052/00529536.pdf>

⁶ Scottish Planning Policy, 2014 <http://www.gov.scot/Resource/0045/00453827.pdf>

⁷ National Planning Policy Framework 3, 2014 <http://www.gov.scot/Publications/2014/06/3539/0>

NPF3 also highlights (at 3.24) the importance of small scale generation stating it “*can have a lasting impact on rural Scotland, building business and community resilience and providing alternative sources of income*”.

3.2 Local Planning Policy

Section 25 of the Town and Country Planning (Scotland) Act 1997 states that a Planning Authority’s decision on a planning application must be made in accordance with the Development Plan unless material considerations indicate otherwise.

The Development Plan for Perth and Kinross currently consists of two tiers:

1. The **Strategic Development Plan TAYplan 2016 - 2036**⁸ jointly prepared by Perth & Kinross, Dundee, Angus and Fife Councils and approved in October 2017. The Plan names the area as ‘Scotland’s *SusTAYnable Region*’. The vision states “*By 2036 the TAYplan area will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice, where more people choose to live, work and visit and where businesses choose to invest and create jobs.*” The relevant policy from the plan is detailed below:

Policy	Extract and Notes
Policy 7 Energy, Waste and Resources	The aim of this policy is “ <i>to deliver a low/zero carbon future and contribute to meeting Scottish Government energy and waste targets...</i> ” This policy seeks to support the provision of renewable energy subject to criteria being met – this includes, but not limited to: land take requirements including safety exclusion zones; proximity to grid connections; anticipated effects of construction and operation on air quality, carbon emissions, noise and vibration, odour, surface and ground water pollution and drainage; sensitivity of landscape; water; biodiversity; tourism; recreational and heritage interests; and cumulative impacts. Furthermore the policy notes that Local Development Plans should identify areas that are suitable for different forms of energy infrastructure and policy to support this.

2. The second tier is the **Local Development Plan**⁹ approved in February 2014 and covers the whole PKC area (apart from those areas covered by the National Parks). The draft Proposed Plan for the Local Development Plan 2 was approved, subject to amendments, on 22nd November 2017. The Proposed Plan period of representation is being completed at the time of writing (01.12.17 – 02.02.18)¹⁰. The 2014 Local Development Plan will be referenced accordingly where policies are relevant to this development:

Policy	Extract and Notes
PM1A and B Placemaking	Development must contribute positively to the quality of the surrounding built and natural environment, respecting the character and amenity of the place. All development should be planned and designed with reference to climate change mitigation and adaption. This proposal has been sensitively designed to maintain the

⁸ Strategic Development Plan TAYplan 2016 - 2036, 2017 http://www.tayplan-sdpa.gov.uk/strategic_development_plan

⁹ Local Development Plan, 2014 http://www.pkc.gov.uk/media/23633/Local-Development-Plan/pdf/Adopted_LDP_Web_Version

¹⁰ Proposed Plan for the Local Development Plan 2, <http://www.pkc.gov.uk/ldp2>

	local characteristics of the area, and is designed to allow the farm to adapt to a low carbon and more sustainable business so is considered compliant with PM1.
Policy TA1B Transport Standards and Accessibility Requirements	Development proposals that involve significant travel generation are required to be served by all modes of transport, provide safe access and appropriate car parking. The minimal transport impacts associated with this development have been considered and no significant generation are predicted. The previous application was assessed by Transport Planning who raised no objection.
CF2 Public Access	Developments must not have an adverse impact on any core path, disused railway line, asserted right of way or other well used route, <i>unless these impacts are adequately addressed and suitable alternative provision is made</i> . There are no core paths on site with the closest some 0.9km to the north. The Landscape and Visual Assessment (LVA) below assesses the impacts and concludes that there would be no significant visual impacts on the core path network.
HE1A Scheduled Monuments and Non Designated Archaeology	Areas or sites of known archaeological interest and their settings will be protected and there is a <i>'presumption against development which would have an adverse effect on the integrity of a Scheduled Monument and its setting, unless there are exceptional circumstances'</i> . The proposal complies with this policy as it would not impact any natural heritage features or their settings. The previous application considered that the turbines would be unlikely to have any significant impact on any sites of cultural interest. The existing intervening topography and woodland and the distances involved would not result in any major impact on the character or setting of the historic sites listed above. It is therefore considered that the proposal is consistent with the relevant policies with regard to cultural heritage.
HE2 Listed Buildings	This policy states <i>'the layout, design, materials, scale, siting and use of any development which will affect a listed building or its setting should be appropriate to the building's character, appearance and setting'</i> . The proposal has been assessed to ensure it will not impact any heritage features or their settings so is compliant with this policy.
HE3A Conservation Areas	This policy states <i>'Development within a Conservation Area must preserve or enhance its character or appearance'</i> . The proposal lies outside of local Conservation Areas and is a sufficient distance away to not affect their setting and so complies with this policy.
HE4 Gardens and Designed Landscapes	The Council seeks to protect and enhance the integrity of these landscape. The proposal is a sufficient distance to ensure no unacceptable impacts to comply.
NE1 Environment and Conservation	Development which could have a significant effect on a site designated or proposed as a Special Area of Conservation, Special Protection Area or Ramsar site will only be permitted where an appropriate assessment shows that the integrity of the site will not be adversely affected, there are no alternative solutions, and there are imperative reasons of overriding public interest. Development which would affect a National Park, National Scenic Area, Site of Special Scientific Interest or National Nature Reserve will only be permitted where the integrity of the area or the qualities for which it has been designated are not adversely affected or any adverse impacts are clearly outweighed. Development which would affect areas of local conservation or geological interest will only be permitted where the integrity of the area or the qualities for which it has been designated are not adversely affected or any adverse impacts are clearly outweighed by benefits of local importance. This supporting statement has assessed all of the above designations and is found to comply with policy NE1.

NE3 Biodiversity	<p>The Council will <i>'seek to protect and enhance all wildlife and wildlife habitats, whether formally designated/protected or not, taking into account the ecosystems and natural processes in the area'</i>. The previous report of handling noted the proposal was contrary to this policy as no detailed evidence has been submitted to demonstrate that the proposal will not impact detrimentally on protected or priority species. Further survey work and assessment has been carried out and has been included in the supporting statement under Ecology and Nature Conservation to satisfy this reason for refusal. It concluded that due to the location of the proposed turbine and distance to suitable wildlife habitat that the proposal will not result in the loss of biodiversity rich habitat and will have no significant adverse impacts on legal protected species or those listed on Tayside Biodiversity Action Plan either on the site or in the surrounding area. This is detailed in Section 4.4 below.</p>
ER1A Renewable and Low Carbon Energy Generation	<p><i>Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported subject to the following factors being taken into account:</i></p> <ul style="list-style-type: none"> <i>a) The individual or cumulative effects on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, tranquil qualities, wildness qualities, water resources, aviation, telecommunications and the residential amenity of the surrounding area.</i> <i>b) The contribution of the proposed development towards meeting carbon reduction targets.</i> <i>c) The effects on the elements listed in criterion (a) of the connection to the electricity distribution or transmission system.</i> <i>d) The transport implications, and in particular the scale and nature of traffic likely to be generated, and its implications for site access, road capacity, road safety, and the environment generally.</i> <i>e) The hill tracks and borrow pits associated with any development.</i> <i>f) The effects on carbon rich soils.</i> <i>g) Any positive or negative effects they may have on the local or Perth & Kinross economy including tourism and recreation interests either individually or cumulatively.</i> <i>h) In the case of large-scale onshore wind energy developments, their fit with the spatial framework for wind energy developments.</i> <p>Each of these key relevant areas have been addressed in this supporting statement and the proposed development is found to be compliant with this policy. The previous report of handling noted the first and second reasons for refusal resulted in the scheme being contrary to this policy (a). The report considered that the scale of the proposed wind turbines would result in unacceptable adverse landscape impact to character and setting of the immediate landscape and wider landscape character types. Furthermore the location, prominence and scale of the development and its relationship to other turbines and pylons in the area would give rise to unacceptable cumulative landscape and visual impacts. Further information is added under LVA to address this reason for refusal and demonstrate that the scheme is compliant with ER1A.</p>
ER6 Managing Future Landscape Change to Conserve and Enhance the Diversity and	<p>Under Policy ER6, developments will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross. The proposal is located outside the Special Landscape Area at a distance of 950m. The LVA and supporting visualisations illustrates that at this distance, due to the small scale of the proposed turbine and landscape and visual context, the level of impact would be slight at most and not significant in landscape planning terms. The special qualities and valued aspects of landscape character as stated in adopted guidance would continue to be preserved in accordance with this policy.</p>

Quality of the Areas Landscapes	
EP2 New Development and Flooding	The general presumption is against development in areas of flood risk. The proposed development has been sited outside of flood risk areas to comply with policy EP2.
EP8 Noise Pollution	There is a presumption against the siting of proposals which will generate high levels of noise in the locality of sensitive receptors. The proposed turbine is of sufficient distance to meet the simplified assessment method for small turbines so is considered compliant with this policy.
ED3 Rural Business and Diversification	This policy favours the expansion of existing businesses and the creation of new business. There is a preference that this will generally be within or adjacent to existing settlements. Outwith settlements, proposals may be acceptable where they offer opportunities to diversify an existing business or are related to a site specific resource or opportunity. All proposals are required to meet all the criteria set out in the policy. The proposed development would support the day to day demands of this farm business and contribute towards increasing both the local level and national level of renewable capacity, whilst reducing carbon emissions, as such it is considered compliant with this policy.

3.2.1 Other Relevant Materials

Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross² (SPG) was published in 2005. This SPG has been developed to support the local plan in regards wind Energy so has been considered whilst preparing this application. This will be replaced by statutory supplementary guidance to support policy ER1 of the local plan, but this has not yet been adopted following the consultation stage over the summer.

Renewable and Low Carbon Energy Supplementary Guidance³ (July 2017) will supersede the 2005 guidance. Consultation has now closed and all comments are being considered. Any updates or modifications can then be incorporated, before the next draft goes before Committee, expected in early 2018. As such the document remains draft and not adopted.

Landscape Supplementary Guidance (2015)¹¹ incorporates a review and update of Special Landscape Designations (SLAs) in accordance with LDP ER6 'Managing Future Landscape Change to Conserve and Enhance Diversity and Quality of the Area's Landscapes'.

Advice from Scottish National Heritage (SNH)¹² has been followed to sensitively site the turbine where impacts are minimised.

¹¹ Landscape Supplementary Guidance, May 2015 [http://www.pkc.gov.uk/media/31507/Perth-Kinross-Landscape-SG-2015/pdf/Perth_Kinross_Landscape_SG_2015_W_\(2\)](http://www.pkc.gov.uk/media/31507/Perth-Kinross-Landscape-SG-2015/pdf/Perth_Kinross_Landscape_SG_2015_W_(2))

¹² Siting and designing windfarms in the landscape – version 3a: Annex 1, SNH, August 2017 <https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a>

4 SITE SPECIFIC PLANNING CONSIDERATIONS

4.1 Landscape and Visual Impact

4.1.1 Approach to Landscape and Visual Appraisal

This Landscape and Visual Appraisal (LVA) has been carried out in accordance with the following best practice guidance:

- Landscape Institute and Institute of Environmental Management and Assessment (2013), *Guidelines for Landscape and Visual Impact Assessment*, Third Edition.
- SNH (March 2016) Assessing the impact of small-scale wind energy proposals on the natural heritage. Version 3¹³.
- SNH (August 2017) Siting and designing windfarms in the landscape – version 3a: Annex 1: Siting and design considerations for turbines of 15 and 50m in height¹²
- Landscape Institute Advice Note 01/11 photography and photomontage¹⁴.

Other documents consulted when undertaking the LVA include:

Statutory Supplementary Guidance

- Renewable and Low Carbon Energy Supplementary Guidance³ which, once adopted will supersede the 2005 guidance and is currently available as a consultation draft, July 2017 (Draft SPG).
- LUC Landscape Supplementary Guidance (Adopted June 2015)¹¹. Incorporates review and update of Local Landscape Designations (SLAs) in accordance with LDP ER 6 'Managing Future Landscape Change to Conserve and Enhance Diversity and Quality of the Area's Landscapes'.

Non statutory guidance / planning advice and other relevant documents

- David Tyldesley and Associates on behalf of PKC (2010) Landscape Study to Inform Planning for Wind Energy¹⁵. This is aimed at two categories of wind energy, above 20MW and below 20MW, although the guidance in the 'below' 20MW category only applies to clusters of smaller turbines in groups of up to about 75m to blade tip (about 5-9MW), and groups of 3-7 turbines up to 120m.
- Supplementary Planning Guidance (SPG) for Wind Energy Proposals in Perth and Kinross Wind Energy² (2005).
- SNH (1999) Tayside Landscape Character Assessment¹⁶.

This LVA includes a review of national and local landscape designations and other valued landscapes, located within 15km of the application site (The 'Wider Study Area'). **Figure 6** also shows a bareground zone of theoretical visibility (ZTV) up to a 15km radius from the site.

¹³ SNH (March 2016) *Assessing the impact of small scale wind energy proposals on the natural heritage. Version 3.*
<https://www.nature.scot/assessing-impact-small-scale-wind-energy-proposals-natural-heritage>

¹⁴ Landscape Institute (2011) www.landscapeinstitute.org/PDF/Contribute/LIPhotographyAdviceNote01-11.pdf

¹⁵ David Tyldesley and Associates on behalf of PKC, *Landscape Study to Inform Planning for Wind Energy 2010*
<http://www.gov.scot/Resource/0046/00466159.pdf>

¹⁶ Character Assessment 1999 <http://www.snh.org.uk/pdfs/publications/review/122.pdf>

Taking account of the type and scale of the proposed development and the landscape and visual context, the LVA focuses on an assessment of effects within 5km of the site (the 'Detailed Study Area'). Based on a review of the ZTV at **Figure 6** baseline appraisal, and in line with SNH's and GLVIA3's emphasis on proportionality of assessment¹⁷, a 5km Detailed Study Area is considered appropriate and sufficient to identify likely landscape and visual effects arising. The Draft Supplementary Guidance on Wind Energy also recommends a Study Area of 2km for turbines between 15-50m in hub height, with the proposed single turbine having a hub height of 18.5m and falling at the lower end of this spectrum.

The following figures are therefore included in this assessment:

- **Figure 6:** Wider Study and Bareground ZTV (15km)
- **Figure 7:** Detailed Study Area and Landscape Context (5km)
- **Figure 8:** Viewpoint Locations
- **Figure 9:** Photomontages and Wirelines
- **Figure 10:** Cumulative Plan Landscape Context
- **Figure 11:** Aerial Site Plan

This application follows a similar application for two wind turbines (17/01902/FLL) and seeks to address the case officer's reasons for refusal by:

- Reducing the number of turbines from 2 to 1, with a slight increase in height from 20.2m to 25m tip height;
- Adjusting the siting of the proposed turbine to allow a better relationship to other landscape features in certain views whilst increasing the set back from residential properties; and,
- Providing two additional photomontages and two additional wirelines to address the case officers concerns in respect to 'potential' landscape and visual effects of the proposal in more distant, elevated views not captured by the previous photomontages. It should be noted that the previously submitted six photomontages (Viewpoints 1 - 6) were taken from a range of distances and orientations and were selected to be representative of a range of local landscape and visual receptors to accord with the locality and scale of development. The case officer did not identify any significant impacts from the previously submitted viewpoint locations.

4.1.2 Relevant Guidance on Small Scale Wind Energy

Assessment of the potential impacts of the proposed development have been informed by the use of statutory and non-statutory supplementary planning guidance / planning advice and other published materials relevant to the LVA as detailed below.

Supplementary Planning Guidance (SPG) for Wind Energy Proposals in Perth and Kinross Wind Energy² (2005)

The proposal of the single Britwind turbine with a 18.5m hub and 25m tip height are less than the 'single' community sized turbines specified in the SPG, and falls in the intermediate range between

¹⁷ GLVIA3 stresses the need for an approach that is in proportion to the scale of project that is being assessed (Paragraph 1.17 GLVIA3). GLVIA3 recommends that the level of information provided should be appropriate and proportional to the scale and type of development and the type and level of the landscape and visual effects likely to occur (Para 3.16 GLVIA3). The Landscape and Visual Assessment which follows is considered to provide the level of detail which is reasonably required to understand the nature of the proposed changes and the resulting effects of the Proposed Development on the physical landscape fabric, landscape character, designated landscapes and views and visual amenity.

community domestic (up to 7m hub height) and the next category of 'community single' (more than 20m to hub). The application site would also be classified as being located in a 'Broad Area of Search' under the 2005 guidance rather than the identified 'Strategically Sensitive Areas', although it noted that this pre dates current Scottish Planning Policy, 2014 (and will be replaced by the Renewable and Low Carbon Energy Supplementary Guidance, once adopted).

Table 4.1: Scales of Wind Energy Development: Perth & Kinross

Type	Scale	Example
Community	Domestic	Single small turbine (typically up to 7m to hub height, and blade diameter of 4m)
	Single	Single 'standard' turbine (typically more than 20m to hub height, and blade diameter more than 20m)
	Cluster	2-5 turbines (typically no more than 30m from ground to blade tip) in a single installation
Commercial	Cluster	2-5 turbines (up to 120m from ground to blade tip) in a single installation
	Wind Farm	6 or more turbines (up to 120m from ground to blade tip) in a single installation

Source – Perth and Kinross Council, 2005, 'SPG for Wind Energy Proposals in Perth and Kinross', 2005 –page 6, para, 7.3

The detailed landscape guidance has been considered in the LVA (Guideline 1, Landscape Impact, Guideline 2 Visual Impact and Guideline 3 Cumulative Impact), giving due consideration to the age of the document (2005) and subsequent changes to policy and best practice guidelines.

Renewable and Low Carbon Energy Development Supplementary Guidance (Draft July 2017)³

A draft version of 'Renewable and Low Carbon Energy Development Supplementary Guidance (Draft SG)' was published for consultation in July 2017. This Draft SG has been developed to respond to Scottish Planning Policy (2014) and will support Policy ER1 on Renewable Energy of the Local Development Plan. Whilst the Draft SG has not yet been adopted and therefore does not yet form part of the statutory development plan, this application has had due regard to the content of this document in the design and assessment process and as a source of background / baseline information.

The draft proposes the following turbine sizes and typologies:

Table 4.2: Draft SG defines the following categories for turbine size (page 14).

Category	Hub Height	Description
Micro	Up to 15m	Planning permission required unless covered by Permitted Development Rights (PDR): - domestic use only - outwith historic interests and SSSIs - > 100m from curtilage of another dwelling PDR is subject to prior notification & approval
Small	15-30m	Under 50kW. Typically used for domestic FIT schemes
Medium	30-50m	Over 50kW – Planning permission required. If under 50kW PDR potentially applies as above
Large	>50m	Planning permission required. Assessed against Spatial Framework and Strategic Land Use Capacity maps

Category	Hub Height	Description
Wind Farms	More than 1 turbine >30m	Planning permission required. Assessed against Spatial Framework and Strategic Land Use Capacity maps

Whilst there has been a slight increase in height since the previous submission (but reduction in the number of turbines), the proposed turbine (with a maximum hub height of 18.5m; tip height of 25m and 15kW power rating per turbine) would still be categorised into the lower end of the 'Small' category as farm-sized rather than commercial or industrial machines. This category means the proposed development falls below the size where assessment against the *Draft Spatial Framework and Strategic Land Use Capacity Maps* designed for large scale wind farms (50m+ to tip) would be required. As a small scale turbine, the (draft) spatial framework for wind energy would therefore not apply to a turbine of this, however general considerations (such as locational, technological, environmental, and design guidance) would still apply to all proposals including small scale and micro generation.

The study recommends between 15-50m in hub height:

“Detailed design and location information including studies of visual impacts upon receptors within 2km including photomontages and wire drawings. A Landscape and Visual Impact Assessment (LVIA) may be required.”

The Draft SG also recommends that SNH guidance on small scale wind is referred to. SNH Guidance (March 2016)¹³ highlights that small turbines will in many cases have less landscape and visual impacts than large commercial models and that a simplified form of assessment is more appropriate for small scale development. The SNH guidance suggests that between 15-50m tip to tip a limited number of viewpoints / photomontages should be provided. Whilst no definition of the term 'limited' is provided for the 15-50m category, the guidance does state that for turbines over 50m (double the height of this proposal) between 5-10¹⁸ viewpoints would be sufficient in most locations. The eight submitted photomontages and two wirelines, which include the nearest public roads and routes, as well as the additional suggested more distant views, are therefore considered to meet this requirements for a turbine of this scale.

Whilst acknowledging the draft status of the SG, this study also provides a useful source of baseline information. On the supporting maps accompanying the SG, the site would not be located within 5km of any identified Iconic Viewpoints, Sensitive Visual Compartments or any Landmark Landscape Features (the nearest of which is some 5km east of the proposal / M90). The proposal is also not within 15km of any Principal or Amenity Tourist Routes defined in this study.

¹⁸ SNH guidance highlights that whilst the level of assessment required will vary depending on the sensitivity of the location of the turbines, the following indicative levels of assessment based on different wind turbine heights (to blade tip) are recommended as described: For turbines of between 15m and 50m height. “The precise detail should be agreed by the planning authority but, as a minimum, we recommend: – a ZTV map covering an area up to 15km (radius) from the turbine/ outermost turbines; and – wireline drawings and/ or photomontages from a **limited [original emphasis]** number of key viewpoints”. No definition of the number of viewpoints is provided for the 15-50m category, however it is emphasised that these should be limited. In contrast for turbines over 50m the guidance recommends that 5-10 viewpoints would be sufficient in most locations.

**David Tyldesley and Associates Landscape Study to Inform Planning for Wind Energy (2010)
on behalf of PKC¹⁵**

The David Tyldesley and Associates (2010) capacity study does not apply to turbines of this size, however it does identify that LCT 12 Lowland Basin, Landscape Character Unit Loch Leven Basin (in which the site is located) has a low landscape sensitivity and capacity for up to medium sized turbines at the strategic level i.e. turbines in greater number and scale than the one proposed. This study is discussed in greater detail in the section of landscape character.

Table 4.3: David Tyldesley and Associates, 2010, 'Landscape Study to Inform Planning for Wind Energy: Methodology'

Scale of Windfarm over 20MW	Number and Height of Turbines
Small	8 – 12 turbines up to approx. 100m high (about 20–25MW)
Medium	13 – 20 turbines up to approx. 120m high (about 25–50MW)
Large	20 – 100 turbines up to approx. 140m high (over 50MW)
Scale of Windfarm under 20MW	Number and Height of Turbines
Small	3-5 turbines up to 75m (about 5 – 9 MW)
Medium	3-7 turbines up to approx. 120m high (6-14MW)

Source – David Tyldesley and Associates, 2010, 'Landscape Study to Inform Planning for Wind Energy: Methodology', 2010 – page 4, para 2.2¹⁵

LCT 12 Lowland Basin, Landscape Character Unit Loch Leven Basin was therefore identified as one of the landscape character units across Perth and Kinross with the potential for wind turbine development (up to 120m in height), following a combined assessment of landscape sensitivity and visual sensitivity. This study suggests that within these units (including Loch Leven Basin) there is potential to accommodate wind energy at the strategic level, where proposals are likely to be supported subject to satisfactorily addressing all other material considerations. Within these potential 'strategic areas' (of medium or low landscape sensitivity overall), the David Tyldesley Landscape Study (2010) gives further consideration to possible impacts on principal tourist and amenity routes and the potential for cumulative effects (Table 7, page 33). LCT 12 Lowland Basins, Landscape Character Unit Loch Leven Basin comprises part of two areas in PKC where no further strategic issues in terms of principal tourist routes or cumulative effects were identified.

Scottish Natural Heritage – Tayside Landscape Character Assessment (1999)¹⁶

The SNH guidance provides background and baseline information on landscape character; context and guidelines on the siting of wind turbines, but does not provide a wind turbine typology or dedicated sensitivity or capacity study in its own right. Baseline characteristics informed by this assessment are provided below. The Tayside LCA contains a 'Wind Farms' section on pages 76-84. In the 'Changes in the Landscape' subsection it states (emphasis added):

"A critical influence on the scale and nature of wind farms' visual impact is the nature of the landscape in which they are developed... A further factor is the degree of existing development. Impacts are likely to be greater in unsettled landscapes and least where the landscape has already been affected by masts pylons and other structures. A further influence on windfarms' landscape impact is their prominence. Thus, turbines sited on the skyline are likely to be far more noticeable than those located a little further down the hill slope. Topography and landcover may further influence these impacts.

providing screening or back clothing for all or part of the turbines....” (Tayside LCA, page 79, para 4.61)

The study recognised some potential for larger commercial scale wind turbines within the Ochil Hills themselves but (given the guiding criteria on areas most likely to be feasible for large scale wind¹⁹) did not provide a detailed analysis of the Loch Leven Basin, where a greater level of detail is provided in the David Tyldesley Study.

Whilst it is recognised that the above provides broad level strategic guidance, the assessment below highlights how the development of this smaller scale turbine has been located and designed to minimise landscape and visual impacts. This includes appropriately siting the turbine in an area that makes use of existing natural and man-made features, as well as back-dropping and avoiding the elevated hill tops where more open views are afforded. Furthermore, the turbine is sited away from key recreational and tourist routes. This resubmission has also sought to identify adjustments, improvements to the siting of the (now single) turbine that seek to further help integrate and assimilate the turbine into its surroundings in respect to landforms, built structures and tree lines.

4.1.3 Landscape Context

Designated Landscapes

The site is not located within any national or local landscape designations. No National Parks, National Scenic Areas or Wild Land Areas are located in the 15km Wider Study Area. The proposed development is located approximately 950m south of the Ochil Hills Special Landscape Area (SLA No. 10) where it borders the A91 and approximately 6km west of the Loch Leven and Lomond Hills SLA (SLA No.11). Pages 40-41 Landscape Supplementary Guidance (LUC, June 2015) provide a description of the Ochil Hills SLA, including its special qualities, which have been reviewed as part of this assessment.

The Ochil Hills comprises a relatively expansive area, covering the hill range between Strathearn and Loch Leven Basin and over a distance of approximately 40km across the width of Perth and Kinross. The southern boundary of the Ochil Hills SLA follows minor roads and tracks between Glenfarg and Carnbo, marking the line between enclosed farmland and unenclosed hills. From Carnbo to Yetts o’Muckhart the boundary is drawn along the A91 at the foot of the hills. The proposed development is located outside of the SLA, approximately 950m south of its boundary and the A91, within the semi enclosed settled farmland. The site is located away from the higher peaks to the north and west where collectively this expanse of hills forms a major feature of the wider surrounding area, and form a backdrop for many communities. The site is not located near to any historical associations or key features noted in the Statement of Significance for the SLA, however the description notes how the accessibility and proximity of the Ochil Hills ensures that they are well used for outdoor sport and recreation by nearby settlements.

19 The ‘Regional Overview’ subsection of the Tayside LCA draws together its recommendations on appropriate locations for windfarm development set out in earlier sections. The study primarily focuses on areas where there is likely to be a demand for commercial scale turbines up to approximately 65m in height (taking in account the need for higher wind speeds, the electricity distribution network at the time etc.) and thereby focuses on the comparative potential / constraints of the highland summits and plateaus, transitional hills, Silawns and Ochils and lowland hills. Para 4.74 also provides further context on the Ochil Hills. The study concludes that The Sidlaws and Ochils are close to the principal centres of population and, over the years, have accommodated a considerable amount of development including masts, pylons, roads, plantations and reservoirs. While the overall aim should be to reduce the impact of these past developments, the different character and quality of these areas suggests that they may be better for wind farm development, subject to siting in respect to sensitive landscape features. A supplement to this study in 2004 found that wind turbines up to approximately 120m would generally be inappropriate in the Ochil Hills due to the smaller scale of the hills, recommending that turbines of 60m would be considered more appropriate, subject to sensitive setting / locational aspects.

The nearest Inventory Gardens and Designed Landscape (IGDL) is located approximately 4.8km south east of the proposed development (Cleish Castle) with a further IGDL located 5.8km west (Kinross House). The nearest Country Parks are located approximately 11.4km to the south east (Lochore Meadows) and 15.6km south west (Gartmorn Dam). Cleish, Muckhart Village, and Kinross are the nearest Conservation Areas each just over 5km from the proposed development.

Landscapes in excess of 5km are considered too distant to experience any significant (or perceptible change) to landscape character or visual amenity. This is because at this distance smaller turbines (if at all visible) are unlikely to be discernable in the wider landscape context. Even within 2-5km a farm size turbine of this scale may not be readily discernable (as illustrated by Viewpoints 8-10, **Figure 9**), however the assessment adopts a 5km Detailed Study Area to adopt a precautionary approach and to account for any potential landscape and visual effects arising

4.1.4 Landscape Character

The site is located in LCT No 15 (Lowland Basin), sub unit Loch Leven Basin under the SNH assessment (1999). Under the Tyldesley Study of 2010 the site is located in LCT 12 Lowland Loch Basin, and Landscape Character Unit 'Loch Leven Basin'. The site lies approximately 1.5km south of Landscape Character Unit 8a 'Ochil Hills', which forms part of the Igneous Hills (LCT 8). The landform of the Ochil Hills to the north of the site is comprised of igneous rock, which is the dominant landscape characteristic, with a few large glens through the hills. The Ochil Hills are characterised as open with almost conical summits dominated by grass moorland, with some areas of extensive forestry.

Loch Leven Basin was formed at the end of the last ice age creating a hollow between the Lomonds (to the east), Cleish Hills (to the south), and the Ochil Hills (to the north). The landscape character unit as a whole lies at about 110m AOD²⁰, rising to around 150m in places. The overall impression of the wider LCT is of a very broad, shallow basin within which the influence of water is apparent, particularly at the eastern end, where water and sky, together with the enclosing hills are the dominant landscape elements. The area has been a focus for human settlement and land use which has expanded, with telecommunications installations near to Kinross. The area as a whole is rich in nature conservation interest and contains a number of historical associations. There are considerable areas of arable and pasture, which provides a semi open character, enclosed by hedges and tree lines. Commercial forestry is largely absent, but semi natural woodland punctuate the landscape. Surrounding the Loch Leven Basin are the rising hills which form a distinctive skyline / backdrop.

At a site specific level the description of the Loch Leven Basin landscape character unit is broadly characteristic of the area: however historical associations and water bodies are not clearly evidenced near to site, with tree lines and vertical transmission equipment being more characteristic at the site level and providing a frame of reference in views. There is a slightly higher degree of enclosure than some of the more open views that can be experienced across the wider area / hills tops, owing to topography, buildings and treelines in the near vicinity. This transition from the more open hills of the Ochil Hills (some 1.5km to north) to the settled semi-enclosed basins is acknowledged in the SLA description and character descriptions.

The proposed development is located in a large open field set over 950m south of the nearest settlement of Carnbo. At a local level, the site is typical of a working farm landscape where the surrounding area also includes a number of large farm holdings. Field sizes are generally large,

²⁰ Above ordnance datum

regularly shaped, and gently sloping down towards the east. Pylons, approximately 35m in height, run in a NE-SW direction 50m to the south east of the proposed turbine. Surrounding the site are a large number of mature trees 15m - 20m in height, which are of a similar size to the proposed turbine helping provide a frame of reference.

4.1.5 Visual Context

Wharlawhill Farm is south of the settlement of Carnbo, with the proposed development site to the south east of the Farm. There are very few neighbouring properties located in the immediate vicinity of the proposal. The nearest neighbouring residential properties are Wharlawhill Farm Cottages 430m to the north west of the site within the landholding (rented to third parties). The next closest property is North Kilduff Farm located at least 775m from the proposed development to the south, and partially set within a small copse of woodland. Beyond this are properties located 890m to the north, just east of Carnbo.

There are no core paths within close proximity of the proposed turbines. The nearest core paths are approximately 900m north (Viewpoint 1 is located on this route) and 1.1km to the south west (Viewpoint 5 is located near the entry point of the closest part of this route). The nearest National Cycle Route is located approximately 5.2km to the south east near Kinross. The Butter Road Heritage Path is located on the north side of the A91, leading from Carnbo approximately 1km north west of the application site and 300m west of Viewpoint 1. The Heritage Path links with the Core Path network described above.

The A91 is located approximately 850m north of the application site and the A977 approximately 700m to the south. Gelvan Moor Road runs along the boundary of the farm to the west 730m from the proposed turbine.

The photomontages and wirelines provided in **Figure 9** illustrate the potential visual effect of the proposed development from a representative range of viewpoints and landscape and visual receptors as described below (with viewpoint locations shown on **Figure 8**).

As advised in best practice guidance, the purpose of viewpoints is not to capture every available view but to provide representative coverage from a range of receptors and distances / orientations to allow the effects of the proposal to be assessed and understood²¹. Whilst the assessment considers the potential for effects up to 5km, the focus of the assessment is out to 2km as advised by the Draft Supplementary Guidance on Wind Energy (2017) for a turbine of this size. In this instance the nearest recreational routes (core paths and heritage paths) are located at distances in excess of 900m, with the nearest roads (excluding minor roads) and locally designated landscapes located at a similar distance. The assessment also includes a number of (closer) views from the minor roads to the east and west to be reflective of the nearest receptors (on minor roads and from nearby residential properties), although it is acknowledged that these areas would generally have a lower level of public usage.

²¹ When assessing small-scale wind energy proposals it is important to identify a list of representative viewpoints, rather than simply include all of the 'important' viewpoints in the study area. It is important that the number is proportionate to the likely impacts of the proposal. (SNH 'Assessing the impact of small scale wind energy proposals on the natural heritage. Version 3.' March 2016). The selected photomontages have been chosen to be representative of how the proposed development would be experienced in relation to the wider landscape. The aim is to illustrate how the proposal would relate to the existing situation ('the baseline'). In considering which viewpoints to select the following factors were taken into account: Maps of Zones of Theoretical Visibility; landscape designations and landscape character types; vehicular and tourist routes; recreational routes (long distance walking routes, heritage paths, core paths, national and local cycle routes); locally important viewpoints OS Map references (e.g. viewpoint, museum, tourist interest); cultural heritage features; residences and settlements; and location of other wind schemes.

Table 4.4: Viewpoints and Key Receptors (Numbers 7-10 are additions for this resubmission)

Viewpoint	Distance, Bearing to site and Elevation	Visual Receptors
1. Gelvan Moor Road	726m; north east; 178mAOD	Road Users (Minor Road)
2. Carnbo	926m; south south east; 175mAOD	Settlement / Road Users (A Road) / Core Path / Outer Edge of Special Landscape Area
3. South of Bellfield	947m; west; 146mAOD	Road Users (Minor road)
4. A977 / Minor Road Intersection	983m; west north west; 144mAOD	Road Users (Minor Road / A Road)
5. Gelvan	1.04km; north east; 187mAOD	Core Path / Residential / Minor Road
6. A91	1.22km; south west; 164mAOD	Road Users (A Road)
7. A977 layby near Kilduff Farm	0.96km; north north west; 158mAOD	Road Users, Residential
8. Core Path North of Carnbo (Ochil Hills Special Landscape Area)	1.28km; south east; 188mAOD	Core Path, Special Landscape Area
9. Core Path north of Arlick Hill (Ochil Hills SLA)	3.61km; south south west; 332mAOD	Core Path, Special Landscape Area
10. Core Path / Minor Road near B9097 (Cleish Hills)	5.14km; north west; 132mAOD	Core Path, Minor Road, Special Landscape Area

The distances to the nearest non-involved properties and property / settlement clusters are shown in **Table 4.5** below.

Table 4.5: Non-Involved Properties

Property name	Distance and Bearing to Turbine	Orientation of property / main view / Level of Screening (Robust, Partial, None)
1 Wharlawhill Farm Cottage*	430m south west	East; Main aspect looks away from proposed development; Partial.
2 Wharlawhill Farm Cottage*	430m south west	East; Main aspect looks away from proposed development; Partial.
North Kilduff Farm	810m north	South; Some intervening barns and woodland with some visibility of the proposed development likely. Viewpoint 7 is taken from the boundary showing the access and frontage to the property; Partial.
Hallhill	850m north	South; Property obscured by mixed tree planting on the southern boundary and undulating landscape, obscuring full views towards the site; Partial.
Bellfield Park	850m north west	South; Direct line of site is obscured by mixed tree planting, and electricity towers with main aspect looking away from the site; Partial.
*Owned by the landowner associated with this development, rented to third party tenants		

4.1.6 Landscape Assessment

Designated Landscapes

The proposed development would be located outside of, and at some distance from, national landscape designations (in excess of 15km). The ZTV on **Figure 7** illustrates that the proposed turbine would also be of a suitable scale and separation distance to avoid any adverse effects on the nearest IGDLs or Conservation Areas.

The proposal is not located within any non-statutory or local landscape designations, being located approximately 950m from the nearest local landscape designation at its closest point - Ochil Hills Special Landscape Area (SLA).

The Bareground ZTV at **Figures 6 & 7** shows a very small area of intervisibility across the Ochil Hills SLA when taken as a whole. Theoretical visibility of the proposed development is limited to the southern perimeter hills and slopes located approximately 1km from the site. It should be noted that the Bareground ZTV only takes into account theoretical visibility in relation to landform, therefore excluding buildings, trees and vegetation. The ZTV shown therefore provides a worst case scenario with visibility more limited in reality, as demonstrated by the landscape context shown in the Photomontages and Wirelines at **Figure 9**.

The site is not located near to (or within the ZTV of) any of the specific / key landscape or historical features noted in the Statement of Significance for this SLA (Landscape Supplementary Guidance, 2014). The area of theoretical visibility excludes the higher hill summits to the west and centre of the SLA with the proposal not being visible from any Iconic Viewpoints.

Figure 7 shows that the proposal would be theoretically visibility from parts of the core path network, at distances of approximately 1km+. This theoretical visibility varies across the network as the core paths pass between the lower hills as shown on **Figures 6 & 7**.

Figure 9: Viewpoint 8 is taken from rising ground on a core path to the north of the site at a distance of approximately 1.3km. This viewpoint is representative of the range of views likely to be afforded looking towards the site from within the SLA near to its boundary. In these views the proposal would not skyline as it benefits from back-clothing by landform and would be seen in the context of the comparatively more prominent pylons which characterise the landscape near to site. Even at this distance (which represents one of the first available views afforded from the within the SLA on rising ground) the small scale of the proposal would comprise a very minor component of the wider landscape in view, where the turbine is well sited in respect to existing landscape features.

Figure 9: Viewpoint 9 (Wireline) is located on elevated ground 3.61km from the proposal and has been selected as it is located on a unforested hill top (where the Bareground ZTV will not take into account other forested areas / slopes / hill tops near to site). The wireline shows how the proposal would comprise an indiscernible feature, or at most barely discernible feature at this distance (also taking account of the comparative views afforded from Viewpoint 8 and the wider landscape and visual context). The surrounding hills would continuing to be the dominant feature in view. There are a number of small scale existing turbines located within the SLA itself (**Figure 10**) which occupy the foreground of the views near the hill top and core path as shown at this Viewpoint.

The SLA description notes the contribution that the Ochil Hill range provides for the setting and backdrop to settlements. The view looking out of and towards the Ochil Hills from the nearest

settlement of Carnbo would be retained as the development is located within the settled land to the south and would not intrude on this northerly backdrop.

A negligible magnitude of change is predicted from the lower slopes on the edge of the SLA, with no appreciable change beyond this or across the SLA as a whole. Consequently the level of effect on local character and the Ochil Hills, including its special qualities, would be slight at most and not significant in landscape planning terms. This would also accord with the acceptability criteria provided Guideline 1 – Landscape Impact of the 2005 Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross².

Overall the proposal is considered to be of a suitable scale and location to ensure that it does not detract from, or fundamentally alter, the key features, qualities or valued aspects of the SLA designation.

Landscape Character

Since there is no requirement for any additional ground based equipment housing, additional access tracks or compound fencing, overall the proposal is considered to have a low impact on the physical fabric and quality of the landscape, with the pylons cutting across the lowland basin remaining the dominant man-made feature. This type of siting and positioning is recommended within SNH guidance to ensure successful integration into the existing landscape with minimal visual impact. No important landscape features such as trees or hedgerows will need to be removed or otherwise affected to allow the proposal to progress with all natural features contributing to the landscape setting to be retained.

The proposed farm scale turbine of 18.5m hub and 25m tip has been designed to respond to the local landscape context in terms of number, height and colour of the turbine against the scale, form, complexity and cover of the landscape as described below.

The proposal is not located on a prominent ridgelines or hill tops and avoids more sensitive locations such as on loch and river shores; areas of wildness; remoteness and sensitive skyline locations.

The proposal is located on gently sloping ground within the Loch Leven Basin and avoids the tall, enclosing Ochil Hills and more prominent slopes and hill tops. The scale and siting of the turbine would relate well to local topography – where the proposal is frequently back-dropped by landform (as shown in **Figure 9**: Viewpoints 1, 2, 5, 7, 8, 9 and 10). This beneficial aspect of its siting is particularly apparent when viewed from the north, representative of views from the SLA, the closest settlement and a collection of core paths. There are a limited number of views where the proposal would skyline, however this tends to be from lower sensitivity landscape and visual receptors and the parts of the minor road network closer to the site, where as acknowledged by the case officer public usage is likely to be lower.

The proposal is sited near to existing pylons which has a characterising influence on the existing landscape baseline. The proposed farm sized turbine (at 25m to tip) would be of a smaller height than the pylons (some 35m) which collectively appear both more prominent and have a more regular presence across the landscape in view. Whilst the proposal would, to a very limited degree create an additional vertical element in the landscape, its contribution is considered to be slight (adverse) at most, owing to its small scale. There is also a need to balance this with avoiding more remote / wildness areas, free from man-made structures as suggested in SNH – Tayside Landscape Character Assessment (1999)¹⁶. Overall it is considered that the proposal would relate

well to the scale of existing landscape features such as landform, farm buildings, and small blocks of woodland and tree lines, and would have a more sympathetic arrangement with landform than the existing pylons which tend to skyline due to their size and hillside locations.

The settled landscape; tree lines; and agricultural boundaries provide a higher degree of enclosure at the local site level, when compared to the surrounding landscape as a whole. This also tends to filter views as described in the visual assessment. This sensitive siting of the turbine will help assimilate it into the existing landscape context whilst helping to avoid more open areas which characterises parts of the wider area.

The size of the proposal is appropriate to other buildings and structures in the local landscape. For instance, the turbine has been positioned to the south east area of the landholding where the topography means the site sits approximately 15m lower than the main farm buildings of Wharlawhill Farm so as not to become prominent in the landscape

The site would not be located within 5km of any identified Iconic Viewpoints, Sensitive Visual Compartments or any Landmark Landscape Features (the nearest of which is some 5km east of the proposal / M90). The proposal is also not within 15km of any Principal or Amenity Tourist Routes defined in the capacity study or Draft SG.

There are no historical or archaeological interests located in close proximity to the site – including conservation areas, IGDLs, designated assets or any known undesignated assets or local monuments. The Cultural Heritage assessment below, and the case officer's report of handling for the previous scheme does not identify any effects that would impact on the special significance of heritage assets, including their setting.

As described in the visual assessment, there are relatively few sensitive visual receptors or recreational routes within close proximity to the site. The nearest core paths / heritage are located over 900m from the proposed development (with Viewpoints 2 and 5 located at the end of or closest parts of these routes. No significant effects were identified in the report of handling for the previous submission on this site). The nearest publically available views (and closest views) are from the minor roads to the east and west of the site, where road users are typically considered to be of low visual sensitivity²². The report of handling for the previous submission did not identify any significant effects from the minor road network and recognised the likely low frequency of usage of these routes, however did express some concerns over the skylining effect of the turbines from Viewpoint 4. The Applicant has sought to address this concern by improving the siting of the turbine from this view in the resubmission. No notable concerns were expressed in relation to remaining five viewpoints of the previous submission.

The location of the development site accords well with the sensitivities identified and guidance contained in the Tayside LCA and Tyldesley Study of 2010²³, the Lowland Basin character unit is attributed a low landscape sensitivity with capacity for up to medium sized turbines (up to 120m). Overall this indicates that significantly smaller turbines such as the proposed development could be accommodated in this landscape.

²² Users of the road network are typically attributed low sensitivity unless the routes are recognised as tourist or visually sensitive routes, or within designated landscapes, or have recognised potential to be used as connecting routes for non-motorised forms of transport or hold recreational value at the local level.

²³ Within approximately 1km of Igneous Hills LCT and Ochil Southern and Eastern Hills and Slopes Landscape Unit. Attributed Medium landscape sensitivity in 2010 study, with capacity for up to small sized turbines.

Summary

The above characteristics illustrate that the site and the local level context would allow this small scale proposal to be accommodated into the landscape context with minimal landscape and visual impacts as shown on **Figure 9**.

Overall it is concluded that this farm sized single turbine scheme is of an appropriate scale to its location and setting and that siting is in accordance with the relevant guidance and constraints set out in the landscape studies and SNH small wind guidance. No significant or unacceptable effects on valued landscape or landscape character are predicted to arise.

4.1.7 Visual Assessment

Visual Context and Views

Overall, the Bareground ZTV at **Figure 6** illustrates theoretical visibility would be limited largely to the east, where views in practice would be further restricted by farm buildings and vegetation both immediately surrounding the site, and further afield. A number of representative photomontages have been submitted across varying distances looking from different directions to provide indicative views of the proposed development. Distance is important in considering visibility. Particularly for a small turbine scheme such as the proposed development where the apparent size diminishes quickly with distance, and the atmospheric conditions help cause the development to fade from view with increasing distance.

Although a characteristically quite open landscape at a wider scale, the photomontages show how the siting of this farm sized turbine would relate well to the landform and existing natural and man-made landscape features to help reduce the level of landscape and visual impact. For instance, the photomontages from Viewpoints 1, 2, 5, and 6 shows that when viewed from the north and west of the site, in the vicinity of the A91, Carnbo, Gelvan Moor Road, or associated recreational routes, the turbine would be back-dropped against landform and would be read in conjunction with the landscape features described above so would not be overtly prominent. From all directions the field where the turbine is proposed is surrounded by a substantial number of trees and woodland. This obscures clear views of the turbines in many cases as demonstrated by Viewpoint 1²⁴, highlighting the high level of screening and existing vertical elements. In this respect the turbine would not demonstrably or significantly alter the visual experience along these routes from any direction.

Settlement and Residential Properties

With regards to visual amenity of local residential properties, the nearest third party occupied properties are Wharlawhill Farm Cottages 430m to the north west of the site. These cottages are set back slightly from the main farm complex and agricultural units and are orientated east-west, with the turbines located to the south east and so there would be no direct views of the proposed turbines from the main aspects of the cottages. Where visible e.g. from the parts of the grounds / approach, boundary trees and vegetation around the curtilage would tend to fragment views. Overall the turbine has been carefully sited to avoid intruding on the main outlook from these properties and where visible, the small scale, combined with the landscape context would ensure that no significant or unacceptable effects are predicted to arise in relation visual amenity for residents of either property. The case officer in the previous submission was generally satisfied

²⁴ The report of handling for the previously refused scheme noted that the impact from Viewpoint 1 would not be significant, and the resubmitted single turbine would not appear substantially different in the view, appearing predominantly screened and below the skyline provided by the distant Lomand Hills.

that the impact on these properties (and others) would not be significant. The set-back distance from residential properties has also been increased by approximately 50m for this resubmission.

Approximately 890m from the proposed development are a cluster of properties east of Carnbo. Viewpoint 2 provides a photomontage in the vicinity of the settlement of Carnbo. In these views the turbines would be well integrated with the surrounding land uses, back dropped against landform, and partly screened by the higher land separating the turbines with these properties. They would sit comfortably below the horizon so as not to breach the skyline, and be smaller in scale than existing vertical elements such as the pylons which partly penetrate the skyline. The sensitive siting of the turbine combined with the scale and separation distance would not dominate the outlook from these properties and would not lead to a significant or overbearing effect on residential visual amenity. The case officer in the report of handling for the previously refused scheme was satisfied that the impact from Viewpoint 2 would not be significant, and the resubmitted single turbine would not appear substantially different in the view, with the turbine being back clothed by the landform of the Cleish Hills, sited within the gently undulating topography and interpreted in the context of existing vertical features.

North Kilduff Farm is located approximately off the A977 to the south and is partially set within a small copse of woodland. Agricultural barns immediately north of the property further obscure direct views from the back of the house towards the site, with Viewpoint 7 showing views from the approach to the property. Viewpoint 7 illustrates that at a separation distance of approximately 850m, the farm sized turbine would appear as a relatively minor element in the wider view that would not lead to a marked effect on the overall quality of the scene.

Recreational Routes

There are relatively few sensitive visual receptors or recreational routes within close proximity to the site. The nearest core paths / heritage are located over 900m from the proposed development (with Viewpoints 2 and 5 located at the end of or closest parts of these routes where no significant effects on these viewpoints were identified in the report of handling for the previous submission on this site). No significant or unacceptable impacts on settlements or residential properties were identified for the previously submitted scheme. Whilst the proposed development would be visible from parts of the core path network, typically at distances in excess of 1km, the additional photomontage and wirelines provided at **Figure 9** (Viewpoints 7 - 10) illustrate that at this distance effects would not be significant. Additional viewpoints and visualisations have been provided from the core path network at distances in excess of 1km to try to allay previous concerns noted in the report of handling in respect to the lack of visualisations of the potential visual effects at these distances. Overall it is considered that this small scale turbine would not be a prominent feature in views and would not detract from the dramatic backdrop of hills in view.

Road Users

Views from the A91 to the north of the site have also been considered with Viewpoints 2 and 6. Along some stretches, the road sits on an elevated position approximately 20m higher than the application site. Viewpoint 6 demonstrates the occasional wide open views on offer looking across the lowland basin. From this view, the proposed turbine would appear settled amongst trees of a similar scale and with minimal sky lining, so would not be intrusive. In contrast, the larger turbines of Bankhead Farm (47.1m to tip) are more clearly visible on the horizon, whilst the pylons also breach the skyline, and are significantly more dominant due to their larger scale and position within the foreground. The case officer in the report of handling for the previously scheme was satisfied

that the impact from Viewpoint 2 and Viewpoint 6 would not be significant, and the resubmitted single turbine would not appear substantially different in the view, appearing predominantly screened and below the skyline provided by the distant Lomand Hills.

Views from the A977 to the south would generally be restricted to occasional glimpses due to roadside embankments and intervening woodland in areas near to site. Viewpoint 4 however gives an idea of the clearest but transient view along this route looking towards the site, where screening is at its lowest level. Views looking north towards the site would like only be brief at most, as it would be directed away from the main line of site when driving along this road in a NE – SW direction, where road users travelling along this route would typically be accorded low visual sensitivity (as the A977 is not a recognised tourist route). Potential views from along the A977 to the east of Viewpoint 4 are restricted by dense copse of woodland, where potential views are most likely to be experienced between Viewpoint 4, and the new viewpoint provided for the resubmission at Viewpoint 7 (although part of this section contains an embankment which fully obscures potential views). Views are similarly screened or heavily filtered to the west of Viewpoint 7 by a line of tree planting to the west of North Kilduff property. Beyond this short stretch of the A977 between Viewpoints 4 and 7 potential visibility diminishes due to landscape context and roadside trees / vegetation. Where occasional visibility (i.e. gaps / breaks in vegetation allow) the proposal is not predicted to adversely alter the visual experience of users of this road, due to the combined scale, separation distances and frequency of views.

Notwithstanding that no significant effects were identified from the previously submitted viewpoint locations, the resubmitted proposal seeks to improve the siting of the turbine, in particular Viewpoint 4 in respect to landform; skylines and the relationship with other infrastructure. The resubmission provides a new viewpoint on from a layby on the A977 (Viewpoint 7) to accord with the location of Photo 3 in the report of handling for the previous submission. Whilst the Photo in the report of handling shows the surrounding landscape it does not look towards the proposed development site. The proposal in this view would be set behind the tree line and building of North Kilduff Farm. Viewpoint 7 is located in a similar location to Photo 3 but slightly further along the layby to the east to avoid the foreground screening of trees and buildings. This contrasts to the characteristically more open view of farmland and the Ochil Hills that are afforded in Photo 3 (of the report of handling) and seeks to illustrate how the proposal has been sited to make best of use of existing features (including built and natural features and landform) to minimise landscape and visual effects.

Viewpoints 3 and 5 provide views from the minor roads to the east and west of the site. At distances of between 726m and 947m, the proposed turbine would form a minor element from these routes, with the pylons forming the dominant feature. Whilst the turbine partially skylines in views from Viewpoint 3 (for both the previous and resubmitted scheme) it will be situated between and interpreted in the context of the existing 35m pylons which dominate the landscape. The case officer in the report of handling did not consider a turbine of this scale to result in any significant impact on visual amenity from Viewpoint 3. In addition limited weight was attributed by the case officer to the visual impact of Viewpoint 5 in the overall assessment, due to it not being located in a sensitive location.

Summary

Viewpoints 8, 9 and 10 have been included as new viewpoints in this resubmission and show more distant and elevated views from the core path network to the north and south (at distances of 1.28km, 3.61km and 5.14km). These illustrate the relatively small scale of the proposal in its wider

setting, where the turbine would be back-clothed and not detract from the dramatic backdrop of hills in view. The proposal is unlikely to be discernable, or at most, barely discernable in the wider views and landscape context at distances in excess of 1.5km as illustrated by Viewpoints 9 and 10.

In summary, where visible in views from the surrounding area, the proposal would generally cause a very low level of change to visual amenity due the farm scale size, its sensitive siting in relation to existing man-made and natural landscape features, and being some distance from recreational routes such as the National Cycle Network and Core Paths. Overall no significant visual effects are predicted to arise to either key views, or the visual amenity of local settlements, public routes and other sensitive visual receptors in the surrounding area.

4.2 Cumulative Impact

Cumulative landscape and visuals effects potentially arise when a development proposal is experienced in conjunction (or sequential views) with one or more similar, existing or proposed developments. Cumulative effects are those which arise in addition to the effects caused by the proposed development considered on its own. **Table 4.6** below lists the existing approved turbine sites closest to the proposed development, along with **Figure 10** providing a wider overview of existing sites within the 5km study area.

Table 4.6: Cumulative Sites within 3km

Reference	Site	Tip Height	Distance to site
11/00009/FLL	Easter Fossoway	20.3m x 1	1.6km
11/02053/FLL	Bankhead Farm	47.1m x 2	1.7km
08/02311/FUL	Hoodshill	23m x 1	2km
09/02078/FLL	Caresfoot	19.8m x 1	2.1km
12/02200/FLL	Thorntonhill (larger turbine)	45.5m x 1	2.4km
10/01919/FLL	Thorntonhill (smaller turbine)	20.3m x 1	2.7km
09/02060/FLL	Lediation Farm	20m x 4	2.9km

The proposal would not be located in an area where cumulative visual impact is considered to be highest under the mapping provided in the Draft SPG (2017) Figure 4.3 Wind Strategic Land-use Capacity Map. The David Tyldesley and Associates Landscape Study (2010)¹⁵ also sought to identify any visual compartments or corridors where further wind energy developments should be limited, owing to the cumulative effects with existing and approved schemes based on the likelihood of (further) in combination, successive, or sequential views of wind farms. The proposal is not located in any of these areas but gives due regard to potential additional cumulative effects as outlined below.

Figure 10 provides a map of cumulative schemes in the 5km study area. With the exception of the small turbine cluster located with the Special Landscape Area the existing cumulative baseline tends to be informed by single or pairs of turbines of 20-50m in size turbines spaced at approx 0.5-1.5km apart²⁵. The proposal would therefore continue this trend of ensuring that turbines are sufficiently separated so that, collectively, they do not have a defining influence on the landscape

²⁵ Given the existing context / pattern of development it is also worth noting that where the focus of assessment for small scale turbines of this size is within 2km, by its very nature the proposal will be likely to occupy the foreground of the view (in close views).

or visual amenity in combined or sequential views. This is shown on the photomontages at Figure 9, where these are accompanied by cumulative wirelines. As noted in SNH Guidance on small scale wind¹³ (March, 2016) a cumulative assessment is not typically required for turbines between 15m-50m in height. For this application, cumulative schemes located within a 5km radius have been included in the cumulative assessment (and accompanying **Figures**), which is considered appropriate and proportionate for a turbine of this size. It is however noted and acknowledged that the 18 turbine scheme at Green Knowes (93m to tip), located in the SLA to the north west at a distance of approximately 10km from the proposed development is visible from Viewpoint 4, where the cumulative effects from this transient view would be slight adverse at most, and not significant in landscape planning terms.

This small farm scale turbine at 25m to tip is a similar size when compared to other wind turbines in the area. SNH Guidance highlights that small turbines will in many cases have less landscape and visual impacts than large commercial models, but where there are existing turbines, the use of a similar design and size is recommended. In this case, the proposed development will be comparative / slight larger in scale than the single turbine at Easter Fossoway (25m compared to 20.3m tip height) and smaller in scale than the two turbines located at Bankhead Farm (25m compared to 47m), which are the two closest schemes to the proposed development.

From Viewpoint 6 the Bankhead Farm turbines at 47.1m to tip are visible looking west towards the site from the A91. From this view, whilst the Bankhead Farm turbines are visible in the background, the proposed smaller turbine at Wharlawhill Farm would be less prominent being partly screened by vegetation and less readily apparent in the view. From this viewpoint, the additional cumulative effect, attributable to the proposed development when viewed in combination with other schemes, would be very slight and not significant in landscape planning terms. Similarly from Viewpoint 3 (minor road) the proposal would not be out of scale with existing turbines and would be less prominent than existing electrical infrastructure / pylons in view which tend to occupy a more prominent position.

The case officer for the previously refused scheme expressed concerns about the *potential* cumulative effects of the scheme from higher ground to both the north and south of the Proposed Development, where he stated that no supporting evidence had been submitted relating to possible landscape and cumulative effects from these receptors (in particular the Ochil Hills, Cleish Hills and Core Path Network approximately 1km+ to the north). The applicant has sought to address these concerns by including new photomontages and / or wirelines from Viewpoints 8, 9 and 10 from more distant elevated views (between approximately 1km and 5km).

Figure 10 shows that (in contrast to the proposed development which would be located outside the SLA) a number of wind turbines are located within the Ochil hills SLA itself, near to its southern perimeter. Viewpoint 9 is located on a core path within the SLA. In this view the existing schemes of Ledlation Farm and Touchie Farm would be visible in the foreground, with the proposed single turbine at Wharlawhill Farm located at a distance of approximately 3.5km. This viewpoint clearly demonstrates that (even in the wireline view) the addition of the proposal would have an extremely limited effect on the cumulative baseline when viewed in conjunction with both the existing schemes which occupy the foreground, or more distant turbines of a comparative scale located in Loch Leven Basin below. Similarly from the Cleish Hills to the south (Viewpoint 10) no cumulative landscape or visual effects are predicted to arise attributable to the proposed development, where at this distance the proposal is unlikely to be readily discernable and would not detract from or draw the eye existing features in view.



The proposed development benefits from being located at some distance (950m) from the SLA and core path network²⁶. These separation distances are apparent when comparing the proposed scheme to other cumulative schemes in the Study Area, which are frequently located in closer proximity to the core path network (as shown on **Figure 10**), illustrating that smaller farm sized wind turbines can often be appropriately located near to these routes without having a detrimental effect on views or visual amenity.

The supporting photomontages and figures illustrate that through a combination of its small scale, location and limited extent of visibility from key public views, cumulative impacts would be very limited. The proposal would be sufficiently separated to avoid a dominating effect on landscape character or visual amenity, and at most would lead to slight adverse cumulative visual effect from Viewpoints 3, 4 and 6 which would not be significant in landscape planning terms. There would be no appreciable cumulative effect on the character or qualities of the Ochil Hills or Cleish Hills through the addition of the proposed development.

In conclusion, the detailed assessment provided above reinforces that the cumulative landscape and visual effects would not result in any significant or unacceptable cumulative effects either in combination or sequence with other schemes. As a whole the photomontages and cumulative wirelines show how the proposal has been sympathetically sited to take advantage of landform and vegetation patterns (when compared to other schemes such as the Bankhead Farm turbines and electrical infrastructure which tend to be more readily visible on the skyline). The proposal is also located at some distance from sensitive landscape and visual receptors, including the SLA and its associated core paths which minimises the potential for individual and cumulative effects. These aspects should be weighed in the planning balance, when considering the limited (and not significant) range of effects that are predicted to arise.

26 The previously submitted scheme focussed on a range of receptors closer to site including the nearest core paths to the proposed development to the SW and N at approximately 900m-1km as represented by viewpoints 2 and 5 (where the case officer did not identified any significant impacts from these previously submitted views – See Viewpoints 2 and 5). However no photomontages / wirelines were previously submitted from the areas of rising / elevated ground to the north of the site (at distances in excess of 1km). Figure 10 illustrates that there is an existing small scale groups of wind turbines located within the SLA approximately 200-350m from the core path network to the north of the site where the proposal would be located outside of the SLA at viewed at distances or approximately 1km or greater where the proposal is not considered to have detrimental cumulative impact on the visual experience from these routes on either in combined or sequential views (as shown on Viewpoints 8 and 9).

4.3 Cultural Heritage

There are no protected buildings or features within the immediate vicinity of the proposed development, with no recorded features within 1km of the turbine. A Scheduled Ancient Monument (SAM) known as Braughly is located some 1.4km to the north west, some 215m above sea level. The monument comprises an unenclosed settlement consisting of a sub-circular solid crop mark and a ring-ditch. The monument is of national importance because it has the potential to contribute to an understanding of prehistoric settlement and economy. The classification indicates a high sensitivity.

Located on the south facing slope of Cairn Hill the SAM benefits from extensive views of the countryside, including towards the proposed development. The Bareground ZTV of **Figure 7** indicates the turbine would be visible. The small scale of the proposal would not dominate the large open views from this feature and would appear adjacent to the existing pylons of a slightly larger scale (35m). Combined with the large separation distance, the overall quality of the setting or visual amenity of the site would not be significantly affected. The overall magnitude of effects can therefore be described as low.

In total, there are seven SAMs within 5km of the site. Based on the ZTV in **Figure 7**, the turbine would likely only be visible from four such features. All are 1.4km or greater from the site. The separation distances and natural screening would ensure the settings of each SAM would be preserved.

The closest listed feature is Tullibole Church and Burial Ground, category C listed, some 1.7km to the south west. The church is set south of A977 and is outside of the ZTV so would not experience any impacts. Tullibole Dovecot sits near the church and is the only additional listed property within 2km of the proposed development, but also sits outside of the ZTV. Other listed properties are also shown on **Figure 7**. The majority of which are outside of the ZTV, so would not be materially impacted by a farm sized turbine scheme. For the listings falling within the ZTV, visibility would be limited by screening from surrounding structures and vegetation, which coupled with the large separation distances will ensure no unacceptable adverse impacts arise from the development of this scheme.

Cleish Castle is the nearest IGDL some 4.8km south of the proposed development, and sits within woodland providing significant screening, the magnitude of any effect would be negligible.

The closest conservation areas are Cleish, 5.1km to the south east, and Kinross, 5.6km east of the proposed turbine. Due to the intervening topography both areas fall partly outside of the ZTV and benefit from significant separation distances. Kinross Conservation Area in particular is separated by the M90 and an urban area. Overall, there is no change expected to their settings with potential impacts being negligible.

The site does not fall within a World Heritage Site (WHS) and there are no such designations within the surrounding area so there would be no impacts from the proposed development. The Antonine Wall is the nearest WHS located approximately 22km to the south.

The case officer's report of handling for the previous scheme does not identify any effects that would impact on the special significance of heritage assets, including their setting. The proposed development is considered to be compliant with policies: HE1A; HE2; HE3A and HE4.

4.4 Ecology and Nature Conservation

4.4.1 Approach to Ecology and Nature Conservation Appraisal

The fourth reason for refusal associated with application 17/01902/FLL noted the proposal is contrary to Policy NE3 of Local Development Plan as no detailed evidence has been submitted to demonstrate that the proposal will not impact detrimentally on protected or priority species. The officer's report noted that *"[whilst] the site is not protected by any specific designation [this] ... does not necessarily indicate that the proposed development would not impact on protected wildlife and it is important to consider the impact the development could have on local wildlife interests."*

In response to this further surveys and assessment have been carried in the revised ecological assessment

This appraisal is in line with the proportionality principle of British Standard 42020²⁷. that all work in preparing and implementing ecological surveys and measures for avoidance, mitigation and compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development

An ecological appraisal for this single turbine development has been carried out for protected species and species listed on regional and local Biodiversity Action Plans (BAP) and designated sites. A walkover survey established existing habitats on site and assessed suitable habitat for protected and Tayside Biodiversity Action Plan Species.

The appraisal has been carried out in accordance with the following best practice guidance on ecology and nature conservation:

- SNH (January 2016). Micro renewables and the natural heritage. Revised guidance²⁸
- Joint Nature Conservancy Council. (2010) (revised reprint) Handbook for Phase I habitat survey²⁹.
- BS42020 Biodiversity - a code of practice for planners and developers
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). BCT
- Perth and Kinross Local Development Plan 2014, NE3: Biodiversity⁹
- Perth and Kinross Council (no date). Biodiversity: A Developer's Guide³⁰,
- Perth and Kinross Council (2008). A Guide to incorporating Biodiversity into Development³¹
- Supplementary Planning Guidance for Wind Energy Proposals in Perth and Kinross (2005)².

The resubmission of planning application 17/01902/FLL seeks to address the case officer's reasons for refusal. Regarding ecology, the following additional information is provided:

- Results of a walkover survey and assessment of suitability of the habitat to protected species and those species listed on the Tayside Biodiversity Action Plan
- A Phase 1 habitat map; and

²⁷ BSI (2013). Biodiversity - Code of practice for planning and development

²⁸ SNH (January 2016). Micro-renewables and the natural heritage. Revised guidance.

<https://www.nature.scot/sites/default/files/2017-06/A301202.pdf>

²⁹ JNCC (2010) (revised reprint) Handbook for Phase I habitat survey

http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf

³⁰ Perth and Kinross Council. Biodiversity: A Developer's Guide

³¹ Perth and Kinross Council (2008). A Guide to incorporating Biodiversity into Development, Tayside Biodiversity Partnership, Dundee City Council

- Records centre data for protected species.

Table 4.7: Planning Guidance Relating to the Natural Environment

Document	Policy	Extract and Notes
SNH (2016) Micro renewables and the natural heritage	Guidance	Most micro wind turbines can be sited to have little or no impact on the natural heritage.
Supplementary Planning Guidance for Wind Energy Proposals in Perth and Kinross	Guideline 4: Impact on Biodiversity	Wind energy proposals will be supported except in locations where they would have a significant adverse impact on biodiversity... <i>Design measures:</i> Impacts can be minimised by use of appropriate: <ul style="list-style-type: none"> • Windfarm design • Siting in relation to significant habitats or species • Siting in relation to other wind farms • Positioning of turbines in relation to significant habitats or species • Size of turbine • Number of turbines • Siting and design of tracks, borrow pits, building and any power lines
Supplementary Planning Guidance for Wind Energy Proposals in Perth and Kinross	Guideline 5: Cumulative Ornithological Interests	To avoid unacceptable significant cumulative impacts both within and outwith Perth & Kinross on ornithological interests... <i>Design measures:</i> Impacts can be minimised by use of appropriate: <ul style="list-style-type: none"> • Size and number of turbines • Positioning of turbines in relation to other turbines and wind farms • Siting and design of the windfarm in relation to power lines • Technical and operational controls

4.4.2 Introduction

For an ecological assessment, the application of a single 15 kW wind turbine of at Wharlawhill Farm falls within the category of **micro renewables** (a wind energy development of less than 50kW), with micro- renewables having a smaller impact than 'small scale wind energy' which is defined as three or fewer wind turbines with an output greater than 50kW, as defined in SNH Guidance (March 2016)¹³. This assessment is based on best practice guidance for micro-renewables²⁸²⁸.

4.4.3 Site Description

The proposed turbine location is situated in a large open field of improved grassland within the boundary of Wharlawhill Farm approximately 430m to the south east of the farm buildings. Farming practices within the land ownership are arable and sheep farming. The proposed turbine location is situated 50 metres north of a large electricity pylon, some 35m tall and electricity lines.

Picture No. 1 : Field of proposed turbine location looking south



The site is typical of a working farm landscape with generally large field sizes. Within the wider countryside context there are considerable areas of arable and pasture, which provides a semi open character, enclosed by hedges and tree lines. Commercial forestry is largely absent, but semi natural woodland punctuate the landscape.

4.4.4 Description of Potential Disturbance

Construction work consists of excavating and casting a small concrete base – up to 5m in diameter, the erection of the turbine and the excavation of a cable trench.

Operational disturbance has been minimised by locating the turbine close to existing power lines and away from any habitat features.

The cable run follows an existing track and crosses one field boundary as shown in Picture 2.

Picture No. 2: Boundary on north eastern corner of the field with proposed turbine location where cable run would cross into the field (viewed from the south).



4.4.5 Methodology

Desk Study

Information for designated sites has been obtained from sitelink³² for a 5km radius. Species records were supplied by Tayside Bat Group and by Fife Nature Records Centre. Further records were checked on the National Biodiversity Network (NBN) website³³. The search radius for protected species was 1km. The search radius for bats was 5km (Fife Records Centre) and 15km (Tayside Bat Group).

Surveys

A walkover survey was undertaken on 26 February 2018. Habitats were noted and assessed for their suitability for protected species. Any records or signs of protected species were noted.

Limitations

The time of survey was early in the season, and may have overlooked species that are not active yet at this time of the year. However, a general assessment of suitable habitat and checking for any potential bat roosts or old bird nests was possible.

4.4.6 Results

4.4.6.1 Designated Sites

As shown within **Figure 7**, the proposed turbine location is not within or adjacent to any designated areas for nature conservation. There are no internationally designated sites or local wildlife sites within 5km of the development³⁴. The closest designated site is a nationally designated site, Glen Queich Site of Special Scientific Interest (SSSI) approximately 1.9km to the north west, notified for its habitats of rocky slopes and lowland neutral grassland habitat. There is no ecological or hydrological link between the proposed turbine site and this SSSI. The nearest internationally designated site is Loch Leven SPA/Ramsar/SSSI/NNR 6.15km to the east of the turbine location. Loch Leven is designated for its internationally important numbers of over wintering Whooper Swan *Cygnus cygnus*, Pink-footed Goose *Anser brachyrhynchus*, Shoveler *Anas clypeata* and wintering waterfowl. The Killoch burn, which at its closest point is approximately 240m to the south west of the proposed turbine location. Approximately 5.1km downstream this burn flows into the South Queich Burn which after passing through the industrial estate on the south of Kinross enters Loch Leven.

There are no locally designated sites within a 5km radius. Habitats

The following habitats were found within a 250m radius from the proposed turbine location, **Figure 12** Phase 1 Habitat Map:

- Improved grassland
- Defunct species-poor hedgerows,
- Broad-leaved woodland
- Running water

³² Available at: <https://gateway.snh.gov.uk/sitelink/>

³³ Available at: <https://nbn.org.uk/>

³⁴ See <http://gateway.snh.gov.uk/sitelink/searchmap.jsp>; last accessed on 15/02/2018

- Marshy grassland

Improved grassland

The fields within a 250m radius from the turbine location are heavily grazed improved grassland which is rotated arable crops.

Field boundaries- Defunct species-poor hedgerows

Field boundaries around the proposed turbine location to the north and south consist of sheep fencing. The field boundary to the west is also mainly sheep fencing, with a short stretch of gorse south of the electricity line crossing the field. The eastern boundary is a dilapidated stonewall with a short patch of scrub and a standing tree and a tree line (non-managed hedgerow) in the north eastern corner. These remnants of hedgerows are patchy, non-stock-proof and species-poor with mostly one or two woody species. Woody species are either gorse, or hawthorn.

Broad-leaved woodland

Three small pockets of woodland were found within the 250m radius. The woodland to the north east is a narrow strip of woodland of young and semi-mature broadleaved trees (beech, hazel ash). The wood is heavily grazed with no understorey. No potential bat roost features such as cracks, woodpecker holes or ivy on stems were identified. However no bird nest were recorded. The habitat is suitable for a small number of common and widespread farmland birds

Picture No. 3: Woodland to the north east of the field of the proposed turbine location



The woodland approximately 140m to the west of the proposed turbine location is mature scattered broadleaved trees, mainly beech. There is limited ground flora or understorey due to heavy grazing. No potential bat roost features were observed due to the age of the trees present.

Picture No. 4: Woodland 140m to the northwest of proposed turbine location.



The third small pocket of woodland is 214m to the south east of the proposed turbine location and consists of a short patch of unmanaged hedgerow that has turned into a tree line (hawthorn) with several mature beech trees. No potential bat roost features or bird nests were observed.

Running water

A small watercourse (Killoch Burn) runs from west to east 240m to the south of the proposed turbine location. This has limited marginal vegetation due to extensive grazing of both banks with evidence of poaching in some locations (**Figure 12**).

Picture No. 5: Watercourse looking east to west



Marshy and acid grassland

Two small areas of *marshy grassland* (at 166m from the proposed turbine location) and *acid grassland* (at 112m from the proposed turbine location) were interspersed with the broad leaved woodland to the west of the turbine location (**Figure 12**).

4.4.6.2 Protected Species (excluding bats and birds)

The following protected species and species listed on the Scottish and Tayside Biodiversity lists (BAP) have been recorded within a 1km radius.

Table 4.8: Protected Species Records

Common Name	Latin name	Source (Fife Records Centre (F) and NBN gateway (NBN))
Bluebell	<i>Hyacinthoides non-scripta</i>	F
European Otter	<i>Lutra Lutra</i>	F
Brown hare (Scottish BAP)	<i>Lepus europaeus</i>	NBN
Stoat (Tayside BAP)	<i>Mustela erminea</i>	NBN
Red squirrel	<i>Sciurus vulgaris</i>	NBN
Fox (Tayside BAP)	<i>Vulpes Vulpes</i>	NBN
Roe Deer (Tayside BAP)	<i>Capreolus capreolus</i>	NBN
Hedgehog (Tayside BAP)	<i>Erinaceus europeus</i>	NBN

4.4.6.3 Mammals (other than bats)

The records centre search returned one record for otter and one for bluebell. Further records for brown hare, red squirrel and roe deer, fox and stoat were found on the NBN. Levels of protection differ for these species. Otter, red squirrel and bluebell are strictly protected, whereas brown hare, stoat, roe deer, fox and hedgehog are species on the Tayside Biodiversity Action Plan or Scottish Biodiversity Plan and have no legal protection status³⁵.

No signs of protected species were found (hair, potential bat roost in trees or buildings, bird nests, animal tracks).

4.4.6.4 Bats

All species of Bats are protected by UK law so it is important to ensure developments pose no impacts.

Twelve bat records of four species were returned within a 5km radius from the local bat group and the Biological Records centre for the last 30 years. None of these were roost records. Species were common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Natterer's bat *Myotis nattereri* and Daubenton's bat *Myotis daubentonii* (see Table 4.9). Two further species are found within a 10km radius on the NBN gateway, namely Nathusius pipistrelle *pipistrellus nathusii* and brown long-eared bat *Plecotus auritus*³⁶.

³⁵ Hedgehogs are protected under Schedule 6 of the Wildlife and countryside Act, which protects them from being killed or taken by certain methods

³⁶ See Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).section 3.6 Foraging habitat preferences

Table 4.9: Bat records within a 5km radius (15km Tayside Bat group, 10km NBN gateway)

Species	Year	Number of records	Distance to site
Records from Tayside Bat Group within a 15 km search radius of the proposed turbine			
Pipistrelle sp.	2011		2km
Daubenton's bat (<i>Myotis daubentonii</i>)	2015		4.29km
Records from Fife Nature Records Centre within a 5km search radius of the proposed turbine			
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2012	1	Field observation
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	1999,2012	2	Field observation
Pipistrelle sp	1987, 1987	2	Field observation
Daubenton's bat <i>Myotis daubentonii</i>	1987,1990, 2012	3	Field observations
Natterers bat <i>Myotis nattereri</i>	1986,1987	2	Field observation
NBN records (showing the number of records in each cell)			
	2 km radius	5km radius	10km radius
Brown long-eared bat	0	0	3
Nathusius Pipistrelle	0	0	10
Soprano pipistrelle	0	4	97
Common pipistrelle	0	2	68
Natterers bat	0	2	5
Daubenton's bat	0	29	40

4.4.6.5 Reptiles

No records of reptiles were returned. The habitat within 250 metres is deemed unsuitable for reptiles.

4.4.6.6 Birds

No records were returned for birds within a 1km radius from the Records Centre Search. The NBN search for a 1km radius shows two records for protected birds.

Table 4.10 Protected Birds within a 1km radius (NBN records)

Common name	Scientific name (interpreted)	Order	Year
Barn Owl	<i>Tyto alba</i>	Strigiformes	2006
Pink-Footed Goose	<i>Anser brachyrhynchus</i>	Anseriformes	2009

4.4.7 Assessment

The habitat in the area surrounding location of the proposed turbine is intensive grassland and arable farmland regularly disturbed by agricultural activities. The arable fields are grazed by sheep after harvest.

Field boundaries around the proposed turbine location are a combination of wire sheep fencing, remnant of stonewalls and defunct species-poor hedgerows.

The trees within small pockets of woodland within 250m of the turbine location are all relative young with no potential site for bat sites and due to livestock grazing have limited or no understory. There is limited bat foraging habitat with the 250m of turbine.

The site itself is of low value to foraging or nesting birds, with very limited suitable nesting habitat in the boundary hedgerows or on the short grass. It is likely to support a small number of common and widespread farmland species.

The Killoch Burn 240m to the south of the proposed turbine location is relatively small and both banks are heavily grazed and it is considered highly unlikely to support protected or Tayside BAP species.

Taking into account the lack of suitable habitat on and adjacent to the site, the low number of records of protected species and Tayside Bap species within 5km and the proportionality principle (British Standard 42020) it was considered that no further detailed ecological surveys were required.

4.4.7.1 Designated Sites

At 1.6km distance, Glen Queich SSSI has no ecological or hydrological connection with the proposed turbine location and there will be no effect on the SSSI and its designated species.

The turbine location is within 6km of Loch Leven SPA/Ramsar/SSSI/NNR. This is within the feeding radius for Pink-footed Goose *Anser brachyrhynchus* a designated species for the Loch Leven SPA/Ramsar/SSSI/NNR. The species is assessed below.

The Killoch burn which at its closest point is approximately 240m to the south west of the proposed turbine location. Approximately 5,1km downstream, this burn flows into the South Queich Burn which, after passing through the industrial estate on the south of Kinross, enters Loch Leven. The turbine location is 240m from the burn. Given the limited scale of excavation required and distance from the burn, it is considered that there would be no increase in runoff of fine silts entering the burn during the construction of the foundation, and therefore no potential effect on Loch Leven SPA/Ramsar/SSSI/NNR.

4.4.7.2 Habitats

The proposed turbine will be located on improved grassland. This habitat is of low ecological value. The foundation needed for this type of turbine is less than 20m². The effect of the loss of improved grassland is therefore negligible. Other potential effects to habitats could result from the excavation of the cable run, which will run from the farm buildings along an existing track and cross into the field of the proposed turbine location. This will be a small temporary disturbance close to the track when the cable run is dug. There are no trees or hedgerows at the crossing into the field as shown in Picture No. 6. No wildlife habitat will be lost or disturbed. Therefore there will be no effect on any surrounding habitats from the excavation of cable route.

Picture No. 6: Boundary on north eastern corner of the field with proposed turbine location where cable run would cross into the field (viewed from the south).



The small watercourse running 250m south of the proposed turbine location will not be affected by the installation of the concrete foundations to support the turbine.

4.4.7.3 Watercourses

The proposal is not located within a floodplain or adjacent to a watercourse. The nearest watercourse is the Killoch burn, which at its closest point is approximately 240m to the south west of the proposed turbine location. Approximately 5,1km downstream, this burn flows into the South Queich Burn, which, after passing through the industrial estate on the south of Kinross, enters Loch Leven. The turbine location is 240m from the burn. Given the limited scale of excavation required and distance from the burn it is considered that there would be no increase in runoff of fine silts entering the burn during the construction of the foundation and therefore no potential effect on Loch Leven SPA/Ramsar/SSSI/NNR. The local hydrology including main rivers, private watercourses or Ground Water Protection Zones will not be materially affected by the installation of the concrete foundation to support the turbine.

4.4.7.4 Species

Although otters are present within the area, the nearest suitable watercourse (South Queich Burn) for otters lies 600m north. This watercourse (Killoch burn) 240m to the south is considered too small and lacking in suitable habitat to be used by otters for foraging, breeding or resting. The turbine location in an open grassland field is not suitable otter habitat. Therefore there will be no effect on otters.

Brown hares will use arable and grazing farmland and have been recorded within a 2km radius³⁷ from the site. Hares will, however, avoid areas grazed by sheep, so are not likely to use the field extensively³⁸. The construction and operation of the micro-turbine will have no effect on hares.

The small cell of woodland to the north east of the site is heavily grazed by sheep with no understorey. All three parcels of woodland are small and open. Together with the lack of understorey this makes them unsuitable for other mammal species such as red squirrel and roe deer. It is possible that fox and stoat may use the site, however the development of the turbine will not result in a loss of habitat within which their prey species live and they hunt, and will not cause disturbance to this species.

There is no evidence of badger setts within 50m of the proposed turbine locations.

³⁷ NBN gateway for a 2km radius

³⁸ Cresswell, W.J., Birks, J. D.S., Dean, M, Pacheco, W.J, Trehwella, D, Wells, D, Wray, S (2012). UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society

There is no suitable habitat for pine marten or wildcat within 250m of the proposed turbine location.

The Killoch Burn running to the south of the turbine is relatively small and unlikely to support water vole. The lack of marginal vegetation and extensive grazing mean that there is no suitable habitat along this section of the burn to support water vole within 240m of the proposed turbine location.

4.4.7.5 Bats

SNH Guidance (January 2016 - Micro-renewables and the natural heritage) recommends small turbines to be erected at least 30m away from potentially suitable bat habitat (watercourses, hedges, woodland edges, known bat roosts), especially in landscapes with little suitable habitat). The same guidance refers to a study by Stirling University on small turbines (Minderman *et al.*) which concludes that bats will avoid the immediate vicinity (0-5m) of micro turbines but there is no effect at longer distances (20-25m). Thus supporting the SNH recommendation for siting small wind turbines at least 30m away from potentially suitable bat habitats.

The proposed turbine will be located on open improved grassland. There are no identified or potential bat roosts within 250m of the turbine location (**Figure 12**). None of the field boundaries of the field in which the turbine is proposed have a continuous hedgerow and are not well connected, therefore do not provide suitable commuting routes for bats. The nearest woodland features are 115m to the north east and the north west.

The proposed turbine has been located on open ground with a minimum distance of approximately 70m from features such as the trees, field boundary or groups of mature trees, hedge lines and water bodies such as ponds and lakes, which could be used as foraging and commuting routes and over 250m from buildings that could be used as roosts. This is significantly further than the minimum recommended distance by SNH guidance. This distance will provide suitable mitigation to ensure there is no impact to bats.

In addition, all of the bat species recorded within 5km of the proposed turbine location either forage in woodland or in riparian habitat³⁹. The unsuitable open habitat, the large distance to habitat features and the avoidance of micro turbines from bats means that there will be no effect on bats from this development.

4.4.7.6 Birds

SNH guidance on micro turbines does not stipulate a protocol for surveying birds as required for larger wind turbines, but suggests locating turbines away from buildings in order to protect bird species that commonly fly close to and nest on or within buildings such as house martins, swifts, swallows, house sparrows and starlings. The proposed turbine location is over 430m away from the nearest building. Therefore there is no risk from the turbine to house martins, swifts, swallows, house sparrows and starlings.

The location of the proposed turbine is in an area of intensive arable farmland being regularly disturbed by agricultural activities. The arable fields are grazed by sheep after harvest. The site itself is of low value to foraging or nesting birds, with very limited suitable nesting habitat in the boundary hedgerows or on the short grass. The habitat on site will support a low number of common

³⁹ See Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).section 3.6 Foraging habitat preferences

and widespread farmland birds. Operational disturbance has been minimised by locating the turbine away from any habitat features.

Experiments by Minderman *et al* on the effects of small turbines carried out at 20 small wind turbines (up to 50kW) has shown that bird activity is not affected by small wind turbine operation⁴⁰.

Pink Footed Goose

One record was returned for pink footed goose within a 1km radius, a qualifying species of Loch Leven SPA. At 6.15km distance from Loch Leven SPA the site is within foraging range from the SPA for these geese.

SNH regard the risk of collision, displacement and barrier effect for Pink footed geese from small-scale wind farms at a distance further than 1.5 km away from a SPA boundary as low with no likely significant effects. Displacement would only occur if the area was previously attractive as a feeding area to geese⁴¹. From personal communications with the farmer, geese do not feed on his fields, as all fields, including the arable land immediately after harvest, is grazed by sheep. Moreover, pink-footed geese tend to return to areas where they have already fed safely resulting in particular fields being used to a large extent⁴². A study by Hearn and Mitchell (1995) showed that of 1492 fields surveyed around Loch Leven, only 14% were ever used and just 10 fields accounted for 24.6% of daytime feeding⁴³. SNH guidance on pink footed geese is written for small scale wind (groups of three or fewer wind turbines with an output greater than 50kW). As stated previously, this turbine is considered 'micro renewable' by SNH.

The close turbine location to the overhead power lines means that there will be no additional risk than the already existing power lines. However, it is considered highly unlikely that the geese would use the field close to the proposed turbine location because of the proximity of power lines, the farm buildings, their historic preferences for feeding areas and the use of the fields by sheep.

The proposed turbine location will therefore not have an effect on pink footed geese because it will not pose a collision risk or result in disturbance.

Barn Owl

One record was retrieved for barn owl within 1km square from 2006. There are no potential barn owl roost or nest site within 250m of the proposed turbine location. Barn owls hunt low to the ground typically at less than 3m height and are therefore considered to be at low risk of collision by the Barn Owl Trust and are known to nest successfully close to small turbines (within 35m)⁴⁴. It is considered that there will be no risk to barn owls from the proposed turbine.

⁴¹ SNH (Feb 2014). *Assessing impacts to pink-footed and greylag geese from small-scale wind farms in Scotland*

⁴² Mitchell, C. (July 2012). *Mapping the distribution of feeding pink-footed and Iceland Greylag Geese in Scotland. A report funded by WWT and SNH.*

⁴³ Mitchell, C. R., Hearn, R. D. (2004). *Pink-footed Goose Anser brachyrhynchus in Britain 1960/61-1999/2000. Waterbird-Review Series, The Wildfowl & Wetlands Trust/ Joint Nature Conservation Committee, Slimbridge para 1.4.3.4*

⁴⁴ Barn Owl Trust <https://www.barnowltrust.org.uk/hazards-solutions/barn-owls-wind-turbines/>

4.4.8 Cumulative

Seven schemes are within a 3km radius of the proposed turbine site (see Table 4.6). Five of these are of similar height (around 20m to blade tip), with two schemes comprising three turbines over 45m to tip height with an estimated rotor diameter of 20m. All of these would be classed as micro-turbines²⁸, the combined effect to the ecology of the area of which is negligible.

4.4.9 Conclusion

There will be no negative effect on habitats and species resulting from this proposal, therefore no mitigation is required.

The habitat that would be directly affected by the turbine is improved species- poor grassland with negligible nature conservation value. There will be no negative effects on any other habitats or loss of trees, hedgerows or areas of high biodiversity interests. This is therefore compliant with Perth and Kinross Council Supplementary Planning Guidance No 4 on biodiversity.

There are no known bat roosts within 5km and bat species present in the area prefer to use woodland and riparian habitat for foraging. The nearest hedgerows at more than 70ms distance for commuting bats are gappy and unlikely to be used by bats.

According to SNH guidance the turbine is at a sufficient distance from the farmhouses for there to be no risk house sparrows, house martins, swifts and starlings. The site is over 6.15km from Loch Leven SPA. There is no evidence of the use of the site by pink footed geese and it is considered highly unlikely that the geese would use the field close to the proposed turbine location because of the proximity of power lines, the farm buildings, their historic preferences for feeding areas and the use of the fields by sheep. Therefore in line with Perth and Kinross Council Supplementary Planning Guidance No 5 on Ornithological Interest⁴⁵.

The proposed turbine and location is compliant with policies NE1 and NE3 in the Perth and Kinross Local Development Plan (Natural Environment), because the assessment concludes that the proposed development will have no effect on habitats of high nature conservation value, designated sites or protected species.

4.5 Noise

ETSU-R-97 is generally used for large wind developments due to the complexity and cost of undertaking onsite noise tests. It does however provide a simplified method of assessment for smaller projects. It states that if it can be demonstrated that the estimated wind turbine noise is limited to an LA,90 of 35dB(A) up to wind speeds of 10m/s at 10m height then this condition alone would offer sufficient protection of amenity without considering the actual background noise at the site under consideration.

⁴⁵http://www.pkc.gov.uk/media/13439/Wind-Energy-Supplementary-Guidance/pdf/WindEnergy_SPG_May2005_1_ It should be noted that the guidance on biodiversity and cumulative impact on ornithological interests are written for both large scale and individual wind turbines. Point 5 on Commercial and Community Wind Energy Schemes acknowledges the 'important distinction' between developments that are primarily intended to service a local demand or need, such as an individual farm and large scale wind proposals.

Based on the simplified assessment method for small wind turbines, the minimum slant distance (distance from turbine hub to point of interest) for one turbine is **180m** is required in order for the noise levels to be below an $L_{A,90}$ of 35dB(A) up to wind speeds of 10m/s at 10m height.

In this case the proposed turbine is located **430m** south of the nearest non-involved residential dwellings of 1 and 2 Wharlawhill Farm Cottages which are rented out to third parties on the farm holding. This is far enough away to remain below the 35dBA noise threshold and to ensure the turbine will not be a nuisance or a material consideration in deciding the planning application.

Further details can be found in the accompanying **Appendix 2: Noise Report** which provides general noise specifications for the H15 wind turbine.

4.6 Shadow Flicker

Shadow flicker is caused from the rotating blades interrupting the sunlight when the turbine is between the sun and a property. This generally occurs more in the morning and evenings or during sunny days in winter when the sun is lower.

The guidance document 'Onshore Wind Energy Planning Conditions Guidance Note', October 2007 for all UK local planning authorities states the following *'Only dwellings within 130 degrees either side of north relative to a turbine can be affected and the shadow can be experienced only within 10 rotor diameters of the wind farm'*.

In this case the separation distance between the turbine and the nearest third party property to the north is 430m, well in excess of the recommendations above ($10 \times \text{rotor diameter} = 10 \times 13.1\text{m} = 131\text{m}$). Therefore shadow flicker will not affect any surrounding neighbouring properties.

There are also no public highways, footpaths, or open access within 10 rotor diameters with the nearest being Gelvan Moor Road 730m to the west. Based on these details, it is anticipated that no sensitive receptors would be adversely impacted by potential shadow flicker from the proposed small turbine.

4.7 Aviation and Radar

Due to the small scale nature of this proposal and acceptance of existing larger turbines in the area, the proposed turbines are unlikely to affect radar or aviation safety.

Publicly available, self-assessment maps available from NATS have been referred to which provide guidance for developers. The maps do not represent no-go areas nor do they provide an exhaustive list of areas which will be affected. A review of the available mapping indicates that the proposed site is depicted outside the area for 20m to 40m obstacles to be detected. Further assessment by NATS is therefore unlikely.

The Ministry of Defence (MOD) raised no objection to the previous application.

4.8 Electronic Communications

As with aviation and radar, interference with wireless communications is unlikely to occur with small wind turbines due to their low height and small rotor diameter. Internal data shows the nearest fixed links are over 700m south west of the site. The turbines are also not within 100m of an electronic

communications installation to avoid any risk of disturbance. Responses from Ofcom, Arqiva, Joint Radio Company and Atkins have confirmed no objection to siting turbines at Wharlawhill Farm (see **Appendix 3**).

4.9 Traffic and Access

Access on to the site will be via existing private driveway and onsite tracks within the fields. The delivery will be via the local road network utilising the A977 and Gelvan Moor Road used to access the farm. The small scale of the turbine means that no abnormal equipment, such as cranes, will be required, with only a single lorry required for delivery. It won't be necessary to remove street furniture or widen / modify any road or junction, close or restrict any roads, or put down any temporary surfaces. Construction traffic will not cause interference to traffic flow due to the low level of vehicle movements required and remote location off the main road.

The existing access to the property and the track leading to the field will be used during construction, no additional access track is proposed. Access will be required for the ground works, erection of the wind turbines and electrical fitting. The components will be moved into position by a mini-digger and 4x4. Excavations for the foundations and cable trench will also be carried out by the mini-digger. All excavations, protection, cable laying, builders work and electrical fitting will be carried out in accordance with relevant health and safety requirements.

The table below indicates the anticipated number of movements to and from site, and when they will occur. Stage 1 and 2 of the construction phases would be separated by a 2 to 3 week separation to allow time for the foundations to set. Given there is no requirement to alter the site access and all vehicles used in the construction of the wind turbine are vehicles already using the local highway network and accessing the site currently, there is no requirement for a Construction Traffic Management Plan in addition to the information provided in this section.

Phase	Time Period	Vehicle Type	Total anticipated number of movements (in and out = 1)
Construction stage 1 – Ground works	1 week	Short wheel base van	5
		4x4 with 4m trailer for digger	1
		Fixed axle concrete mixer	3
Construction stage 2 – Turbine installation	2 days	Short wheel base van	3
		Class 2 HGV	1
		4x4 with 4m trailer for digger	1
Construction stage 3 – Electrical work and commissioning	1 day	Short wheel base van	1
Operation	20-25 year life	SWB maintenance van	1 visit per year

Once operational, only occasional access using a standard 4x4 vehicle will be required for servicing and maintenance over the expected 25 year operational life.

4.10 Public Safety

The proposed development will not create a risk for public safety as there is no public right of way or access into the property. The site is located in a fenced field within the private ownership of Wharlawhill Farm, and would be installed by a trained team.

Transport Scotland recommend a minimum setback distance of 1.5 times the height of the wind turbine (to blade tip) from the edge of the carriageway. For the H15 turbine this would mean a 37.5m setback distance. The nearest public highway to the west is some 730m from the turbines so there will be no risk to road users.

4.11 Ground Conditions

The site has been checked on the Coals Authority's Interactive Map Viewer⁴⁶. This assessment has confirmed that the site would not fall within either a low risk or high risk area for coal mining activities and so no further risk assessment is required.

Before any construction work would begin for the proposed development, the ground conditions would be suitably checked before installation. The required cabling will run from the point of connection (within the main building) and run south along the field boundaries and track to the turbine site to minimise disturbance. There will be no impacts to the existing stone wall field boundaries or hedgerows.

4.12 Hydrology

A review of the SEPA⁴⁷ data shows that the site does not fall within an area of River, Surface, or Coastal type flooding, and is outside of areas considered as *Potentially Vulnerable*.

Overall there are no significant hydrological effects predicted as a result of this proposed small development and would not increase the risk of flooding at the site nor at other locations.

4.13 Socio-Economic and Environmental Benefits

There are many wider environmental and economic benefits of renewable energy projects at all scales, and these should be considered as a material consideration in support of the application. The Local Development Plan encourages opportunities to generate energy from renewable sources and states all development "*should be planned and designed with reference to climate change, mitigation, and adaptation*".

Policy ED3 of the LDP (Rural Business and Diversification) favours the expansion of existing businesses and the creation of new business. This proposal supports an existing farm business providing onsite generation for electricity usage, directly supporting the day to day demands of the farm. The contribution towards increasing both the local level and national level of renewable capacity, whilst reducing carbon emissions is further justification for this proposal. It is estimated that the turbine could produce around 48,000 kWh of electricity per annum, representing an annual carbon dioxide saving of approximately 17 tonnes.

⁴⁶ The Coal Authority Interactive Map, 2018 <http://mapapps2.bgs.ac.uk/coalauthority/home.html>

⁴⁷ Scottish Environment Protection Agency Flood Maps, 2018 <http://map.sepa.org.uk/floodmap/map.htm>

5 DECOMMISSIONING

The typical lifespan expected of the Britwind H15 turbine is 25 years when regularly serviced and maintained although this could be longer. At the end of the operational life, if the landowner decides to remove the turbine the above ground components can be decommissioned and removed from site. The ground can then be restored back to original condition in keeping with the surrounding land.

6 CONCLUSION

The proposed development should not be mistaken for a large scale wind farm, but of a small farm scale project that will contribute towards a more sustainable form of energy generation at a local level within the rural community. The single 15kW wind turbine is British designed and manufactured and will be used at Wharlawhill Farm to generate renewable electricity. This will help to provide both an economic benefit to the day-to-day running of the farm by using a sustainable power supply for a significant proportion of the onsite usage, whilst also contributing to wider Scottish renewable energy and carbon emission targets.

The proposed site has been selected following careful consideration of multiple physical constraints and planning requirements as demonstrated within this supporting statement. The previous reasons for refusal have been considered and are addressed in this statement. The location of the turbine has been carefully and sensitively located in order to minimise or avoid adverse effects on amenity, landscape and environmental receptors with due regard to operational constraints. This has been achieved by locating the site to the south of the farm where components would be viewed alongside existing infrastructure in the form of the pylons. The site additionally sits on lower ground within the landholding to minimise views of project components from surrounding properties and the wider landscape, and is a sufficient distance that the slim tapered design will be only a minor element where still visible. Potential views from the closest vantage points are largely obscured from the undulating topography, existing vegetation, and buildings on and around the site. At greater distances the slim profile of the turbine would blend well into the existing landscape and appear minor in comparison to the larger pylons already present crossing the farm.

This supporting statement has considered each of the key policies and shown how the proposed development complies with the Perth and Kinross Council Local Development Plan, by not having an unacceptable impact on residential amenity, biodiversity and landscape. The slim profile of the turbine would blend in well with the existing landscape. Overall, the small scale, context, and character of the site and the surrounding landscape comfortably enables this small, farm scale turbine scheme to be acceptably integrated into the landscape and would ensure there would not be an unacceptable impact on the amenity of nearby residential areas.

On a national scale, SPP and the Onshore Wind Policy Statement supports the development of renewable energy projects to generate low carbon electricity at all scales. This is a material consideration further supporting this application.

By demonstrating how this application complies with both the Local Development Plan, and national policy, the applicant requests that this application for a small renewable energy development at Wharlawhill Farm is considered favourably.

**TCP/11/16(550) – 18/00473/FLL – Erection of a wind turbine
and associated works on land south east of Warlawhill
Farm, Carnbo, Kinross**

REPRESENTATIONS

From:NATS Safeguarding
Sent:9 Apr 2018 14:38:54 +0100
To:Development Management - Generic Email Account
Subject:RE: Planning Application Consultation for Application No 18/00473/FLL

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours Faithfully

NATS

NATS Safeguarding

D: 01489 444687
E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk





Defence Infrastructure Organisation

Kalie Jagpal
Assistant Safeguarding Officer
Ministry of Defence
Safeguarding – Wind Energy
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Your Reference: 18/00473/FLL

Our Reference: DIO 10043006

Telephone [MOD]: +44 (0)121 311 3656

Facsimile [MOD]: +44 (0)121 311 2218

E-mail: Kalie.Jagpal326@mod.gov.uk

Nick Brian
Perth & Kinross Council

20/04/2018

Dear Nick,

Please quote in any correspondence: DIO 10043006

Site Name: Land South East Of Wharlawhill Farm

Proposal: Erection of 1 Wind Turbine

Planning Application Number: 18/00473/FLL

Site Address: Carnbo, Kinross, KY13 0NZ

Thank you for consulting the Ministry of Defence (MOD) on the above Planning Application in your communication dated 04/04/2018.

I am writing to tell you that the MOD has no objection to the proposal.

The application is for 1 turbine at 25.05 metres to blade tip. This has been assessed using the grid references below as submitted in the planning application or in the developers' or your pro-forma

Turbine	Easting	Northing
1	306075	702380

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

Defence Infrastructure Organisation Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

If planning permission is granted we would like to be advised of the following prior to commencement of construction;

- the date construction starts and ends;

- the maximum height of construction equipment;
- the latitude and longitude of every turbine.

This information is vital as it will be plotted on flying charts to make sure that military aircraft avoid this area.

If the application is altered in any way we must be consulted again as even the slightest change could unacceptably affect us.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

MOD: <https://www.gov.uk/government/publications/wind-farms-ministry-of-defence-safeguarding>

Yours sincerely

Mrs Kalie Jagpal
Assistant Safeguarding Officer – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

Response from Fossoway Community Council

Tracy McManamon

From: Fossoway Community Council [REDACTED]
Sent: 24 April 2018 21:24
To: Development Management - Generic Email Account
Subject: Objection letter for planning application 18/00473/FLL
Attachments: 1800473FLL Wind Turbines, Wharlawhill .docx

For the attention of the Development Manager

Please find attached an objection letter in respect of planning application **18/00473/FLL** Erection of a wind turbine and associated works at Land South East of Wharlawhill Farm.

This is sent on behalf of Fossoway and District Community Council.

Jennifer Donachie
Community Councillor, Fossoway and District Community Council

ENTERED IN COMPUTER

26 APR 2018

For the attention of the Development Quality Manager

Tuesday 24th April, 2018

Planning Application 18/00473/FLL Erection of a wind turbine and associated works at Land South East of Wharlawhill Farm.

Fossoway and District Community Council discussed the above planning application by email consultation and have decided to object. Although this application has been revised to erect only one wind turbine, the Community Council as per policy, will lodge an objection to any planning applications involving Wind Turbines and will continue to do so until Perth & Kinross Council have a policy relating to the aforementioned.

Yours sincerely,

Jennifer Donachie

Community Councillor, Fossoway and District Community Council

Memorandum

To	Development Quality Manager	From	Regulatory Service Manager
Your ref	18/00473/FLL	Our ref	LA
Date	24 April 2018	Tel No	██████████

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

Consultation on an Application for Planning Permission

RE: Erection of a Wind Turbine and Associated Works at Land South East of Wharlawhill Farm, Carnbo, Kinross, KY13 0NZ for Ecotricity

I refer to your letter dated 4 April 2018 in connection with the above application and have the following comments to make.

Recommendation

I have no objections in principle to the application subject to the under noted conditions being included on any given consent.

Comments

The application is for the erection of a single Britwind H15 Class IV (15kw) wind turbine and I can advise that I have seen the submitted information and visited the site.

Noise

I understand that the H15 turbine has two difference models namely the Class II with a rotor diameter of 10.4 m and the Class IV with a rotor diameter of 13.1m. I note from the manufacturer's data submitted for the H15 turbine that there only appears to be noise data available for the Class II model and that test results for the Class IV is currently not available.

The noise report submitted for the H15 turbine has been assessed in terms of the BWEA Performance and Safety Standard and the simplified criteria according to ETSU-R-97 guidelines. Having looked at the noise report it appears that no assessment for tonality has been provided by either of the standards used and the report does not make reference to the details of the test turbine under assessment i.e. rotor diameter hub height etc.

I would advise that if no assessment for tonality has been undertaken a penalty of 5 dB would need to be applied to the SWL and the noise levels would need to be re-calculated. Based on this and the distance to the nearest residential property being 430m away, I have assessed the likely noise impact using the British wind energy performance and safety standard 2008 and based upon this I am satisfied that noise should not cause any significant impact to adjacent residential properties subject to appropriate conditions being attached to the consent.

Shadow Flicker

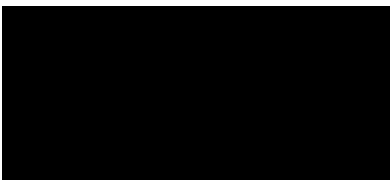
I would advise that Scottish guidance on shadow flicker is given in PAN45 which states that the seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site. Where this could be a problem, developers should provide calculations to quantify the effect. In most cases however, where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), shadow flicker should not be a problem.

The proposed wind turbine will be located approximately 430 metres from the nearest residential property with a rotor diameter of 13.1 metres. Based on the 10 rotor diameter rule any property more than 131 metres of the turbine should not significantly be affected by shadow flicker and I therefore satisfied that shadow flicker should not be a problem.

Conditions

In light of the above this service would not object to the application subject to the following conditions:

- The turbine shall be a Britwind H15 on an 18.5m mast unless otherwise agreed in writing by the Council as Planning Authority.
- Noise arising from the wind turbine shall not exceed an $L_{A90, 10 \text{ min}}$ of 35 dB at the nearest noise sensitive premises at wind speeds not exceeding 10m/s and measured at a height of 10m above ground at the wind turbine site, all to the satisfaction of the Council as Planning Authority. In the event that audible tones are generated by the wind turbine, a 5dB (A) penalty for tonal noise shall be added to the measured noise levels.
- On a formal written request by the Council as Planning Authority, appropriate measurements and assessment of the noise arising from the wind turbine (carried out in accordance with ETSU report for the DTI - The Assessment and Rating of Noise from Wind Farms (ETSU-R-97)) shall be submitted for the approval in writing by the Council as Planning Authority.



Perth and Kinross Council
By email

25th April 2018

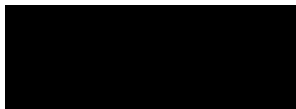
Dear Sir/Madam

**Re: Planning Application No. 18/00473/FLL
Erection of a wind turbine and associated works, Land South East Of Wharlawhill
Farm, Carnbo, Kinross, KY13 0NZ**

Our Ref: EDI2691

The proposed development has been examined from an aerodrome safeguarding perspective and does not conflict with safeguarding criteria. We therefore have no objection to this proposal,

Yours sincerely



Nyree Bell
Edinburgh Airport Limited



Comments to the Development Quality Manager on a Planning Application

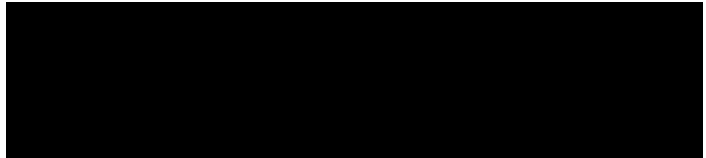
Planning Application ref.	18/00473/FLL	Comments provided by	Tony Maric Transport Planning Officer
Service/Section	Transport Planning	Contact Details	[REDACTED] [REDACTED]
Description of Proposal	Erection of a wind turbine and associated works		
Address of site	Land South East Of Wharlawhill Farm Carnbo Kinross KY13 0NZ		
Comments on the proposal	Insofar as the roads matters are concerned, I have no objections to this proposal.		
Recommended planning condition(s)			
Recommended informative(s) for applicant			
Date comments returned	26 April 2018		



Defence Infrastructure Organisation

Your Ref. TCP/11/16 (550)
DIO Ref. 10043006

Ministry of Defence
Safeguarding
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom



Via Email

Perth and Kinross Council
Review Body Admin Team
Council Building
2 High Street
Perth
PH1 5PH

20th August 2018

Dear Sir/Madam,

Council Planning Review Body reference – TCP/11/16 (550)

Planning Application reference – 18/00473/FLL

Re: Erection of a wind turbine and associated works on land SE of Warlawhill Farm, Carnbo, Kinross

The Ministry of Defence (MOD) has received notification from Perth and Kinross Council stating that the above planning application will be reviewed by the Council's Local Review Body.

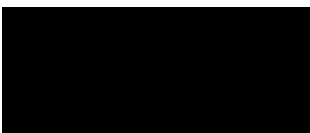
The MOD submitted a response dated 20th April 2018 to Perth and Kinross Council raising no objections to the proposal. The MOD has reviewed this response in light of the Review and I can confirm that the MOD raises no objection to this proposal.

If planning permission is granted, the MOD would like to be advised of the following information;

- The date construction starts and ends;
- The maximum height of construction equipment;
- The latitude and longitude of the turbine erected

I trust that the above will be taken into account during the Review consideration. Should you require any additional information, please do not hesitate to contact me.

Yours faithfully



Laura Nokes
Senior Safeguarding Officer

