# Appendix G: Specialist Assessments

## G.1 VISUAL IMPACT

GREEN BEAN DESIGN landscape architects

# Rye Park Wind Farm Modification 1

## VISUAL IMPACT ASSESSMENT

*Prepared for:*

## RYE PARK RENEWABLE ENERGY PTY LTD

*Prepared by:*

**GREEN BEAN DESIGN**
*landscape architects*

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## DOUCMENT CONTROL

| Item | Detail |
|---|---|
| **Project Name:** | **Rye Park Wind Farm Modification 1** |
| **Report Title:** | **Visual Impact Assessment** |
| **Project Number:** | **19-263** |
| **Version Number:** | **v6** |
| **Status:** | **Final** |
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## Green Bean Design Pty Ltd - experience

Green Bean Design Pty Ltd has prepared eight Visual Impact Assessment (VIA) modification reports for consented wind farm projects in New South Wales. These include:

- Boco Rock Wind Farm Modification 1 New South Wales: Consented
- Coppabella Wind Farm Modification 1, New South Wales: Consented
- Crookwell 2 Wind Farm Modification 2, New South Wales: Consented and constructed
- Flyers Creek Wind Farm Modification 1, New South Wales: Consented
- Glen Innes Wind Farm Modification 1, New South Wales: Determination in progress
- Sapphire Wind Farm Modification 1, New South Wales: Consented and constructed
- Silverton Wind Farm Modification 3, New South Wales: Consented and constructed
- White Rock Wind Farm Modification 6, New South Wales: Consented

The overall objectives and methodology applied to each wind farm modification VIA have been consistent and assessed by the NSW Department of Planning, Industry and Environment (DPIE) as part of the modification application process. The wind farm modification VIA have also been reviewed by the NSW Independent Planning Commission when referred by the DPIE for assessment and determination.

**Table 1** Glossary

| Term | Definition |
|---|---|
| **Blade tip** | The wind turbine rotor blade including and up to the tip of the rotor blade |
| **Cumulative effects** | The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions. |
| **Wind turbine hub** | The wind turbine hub is the component connecting the rotor blades to the main shaft and is usually visible together with the nacelle. |
| **Magnitude (of visual change)** | A combination of the visible scale and extent of wind turbine visibility. |
| **Mitigation** | Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project. |
| **Residual visual effect** | Observable difference between the consented RPWF and the proposed Mod 1 wind turbines. |
| **Sensitivity** | Susceptibility of a receiver to a specific type of change. |
| **Visibility** | A relative determination at which the wind turbines can be discerned and described. |
| **Visual amenity** | The value of a particular area or view in terms of what is seen. |
| **Visual effect** | The changes in the character of the available views resulting from the development or the changes in visual amenity of the visual receivers. |
| **Visual Impact Assessment** | A process of applied professional and methodical techniques to assess and determine the extent and nature of change to the composition of existing views that may result from a development. |
| **View location** | A place or situation from which a proposed development may be visible. |
| **Visual receiver** | Individual and/or defined groups of people who have the potential to be impacted. |

**Table 1** Glossary

| Term | Definition |
|---|---|
| **Visual significance** | A measure of visual effect culminating from the degree of magnitude and receiver sensitivity. |
| **Zone of Visual Influence Diagram** | A map, usually digitally produced, showing areas of land within which wind turbines are theoretically visible. Zone of Visual Influence Diagrams do not account for screening elements above ground level, such as vegetation or built structures. |

## Executive summary

Green Bean Design Pty Ltd (GBD) has been commissioned by Rye Park Renewable Energy Pty Ltd (the Proponent) to prepare a VIA report for the Rye Park Wind Farm Modification 1 Application (Mod 1). This VIA has been prepared with regard to the visual assessment process outlined in the New South Wales State Government Wind Energy: Visual Assessment Bulletin December 2016 (the Guidelines) as applicable to the Rye Park Wind Farm (RPWF) Mod 1 Application.

This Mod 1 VIA has been prepared to assess proposed amendments to the consented RPWF wind turbines and their potential visual effect. Amendments to the consented RPWF wind turbines include an increase to the consented RPWF wind turbine tip height from 157 metres (m) up to 200m above ground level, as well as a reduction in the number of wind turbines to 80 in total. As the Proponent has not selected a preferred wind turbine model, this Mod 1 VIA has adopted and modelled the following design criteria for this Mod 1 VIA:

- hub height up to 117.5m and
- maximum rotor dimeter up to 165m.

GBD understand that the final preferred wind turbine could include a taller hub height and smaller rotor diameter e.g. a hub height of 125m from ground level and 150m rotor blade diameter . In any design scenario the preferred wind turbine tip height would not exceed 200m. For the purpose of this Mod 1 VIA, wind turbine modelling for the Zone of Visual Influence Diagrams, wire frame diagrams and photomontages has adopted a hub height of 117.5m and a rotor diameter up to 165m, and is referred to as the 'proposed Mod 1 wind turbine'. The selection of the Mod 1 design criteria has adopted a maximum rotor diameter to capture views toward tip of blades in a worst-case scenario.

The Zone of Visual Influence (ZVI) Diagrams (**Figures 3** to **8)** depict the area of land from which the consented RPWF wind turbines and proposed Mod 1 wind turbines would be theoretically visible (as well as overall number of wind turbines being visible at tip and hub height). The ZVI Diagrams demonstrate that the visibility of the turbines for the consented project and the proposed Mod project would be very similar in extent and location. ZVI Diagrams have also been prepared to demonstrate the overall low to negligible influence of the Mod 1 wind turbines on cumulative visual effects associated with the neighbouring consented Bango Wind Farm project (**Figures 48** to **51**).

This Mod 1 VIA included a consideration of 146 residential dwellings within 4km of the consented wind turbine locations. The degree of visual change between the consented RPWF and proposed Mod 1 wind turbine is not considered to be of a magnitude that would significantly increase the determination of visual effects associated with the consented RPWF development. Visual change between the consented RPWF and proposed Mod 1 wind turbines are illustrated in **Figures 9** to **12**.

Wire frame diagrams have been prepared to illustrate the consented RPWF wind turbines and the proposed Mod 1 wind turbines. The wire frame diagrams have been prepared from representative residential dwellings as well as from 3 photomontage locations included in the original RPWF LVIA 2016.

Photomontages have been prepared from 3 locations to illustrate the consented and proposed Mod 1 wind turbines. The photomontages have been prepared with regard to the Scottish Natural Heritage Guidelines Version 2.2 February 2017.

# 1 Introduction

## 1.1 Introduction

This Mod 1 VIA has been prepared to compare the potential visual effect of the proposed Mod 1 amendments with the visual ratings determined for the consented RPWF project. The RPWF consented visual ratings have been extracted from the Revised Rye Park Wind Farm Landscape and Visual Impact Assessment Report, GBD June 2016 and the Rye Park Wind Farm Supplementary and Detailed Assessment for Rye Park Village, GBD March 2017, submitted to support the original development application that was consented in May 2017.

A comparison between the consented RPWF and proposed Mod 1 wind turbines has been undertaken to determine if residential dwellings within 4 kilometres (km) of the consented RPWF wind turbines would be subject to an increased visual effect as a result of the proposed Mod 1 wind turbine amendments.

The original development application included a proposal for 109 wind turbines. The NSW Independent Planning Commission (IPC), formerly the NSW Planning Assessment Commission, recommended the exclusion of 17 wind turbines (an approximate 15.6% decrease). The development consent that was granted in May 2017 allows for up to 92 wind turbines, with a maximum tip height of 157m above ground level.

The Proponent seeks to modify the development consent to reduce the total number of wind turbines to 80 (a reduction of a further 12 wind turbines) and increase the maximum tip height to 200m. The 12 wind turbines proposed to be removed in the Mod 1 application are turbine numbers 6, 16, 35, 38, 52, 53, 56, 77, 102, 103, 104 and 140. This represents an approximate 26.6% decrease from the 109 wind turbines included in the original RPWF development application and represents an approximate 13% decrease from the 92 wind turbines consented."

The proposed Mod 1 wind turbine layout will comprise a total of 80 wind turbines located in accordance with the RPWF Development Consent.

GBD confirm the following information has been provided by the Proponent, or procured by GBD, for consideration and/or incorporation into this VIA:

- confirmation of RPWF Mod 1 wind turbine layout
- RPWF Mod 1 wind turbines description and design criteria
- Zone of Visual Influence (ZVI) diagrams
- wireframe models illustrating the consented RPWF and the Mod 1 wind turbines
- NSW Planning Assessment Commission Determination Report Rye Park Wind Farm (SSD 6683)
- Rye Park Wind Farm Development Consent and Conditions of Approval
- Rye Park Wind Farm Landscape and Visual Impact Assessment Report, Green Bean Design 2016 (RPWF LVIA 2016) and
- Bango Wind Farm Landscape and Visual Impact Assessment Report, Green Bean Design 2016 (Bango Wind Farm LVIA 2016).

# 2 Report structure

## 2.1 Report structure

This VIA Mod 1 report been structured into thirteen parts as outlined in Table 2:

**Table 2** – Report structure

| Report section | Description |
|---|---|
| **Section 1**<br>Introduction | This section introduces this VIA Mod 1. |
| **Section 2**<br>Mod 1 VIA report structure | This section outlines the VIA Mod 1 report structure and the report sections included in this VIA Mod 1. |
| **Section 3**<br>Methodology | This section sets out the methodology employed in the VIA Mod 1 preparation. |
| **Section 4**<br>Consented RPWF and proposed Mod 1 amendments | This section describes the key differences between the consented RPWF and Mod 1 amendments. |
| **Section 5**<br>Zone of Visual Influence (ZVI) diagrams | This section identifies the area of land surrounding the wind farm from which the consented RPWF and Mod 1 wind turbines, or portions of wind turbine structures, may be theoretically visible. |
| **Section 6**<br>Ancillary structures | This section describes infrastructure associated with the wind farm other than the wind turbines. |
| **Section 7**<br>Visual effects | This section describes the assessment and determination of residual visual effects between the consented RPWF and proposed Mod 1 amendments. |
| **Section 8**<br>Visual assessment | This section assesses the potential residual visual effects between the consented RPWF and the proposed Mod 1 amendments, against the requirements set out in the NSW State Government Wind Energy: Visual Assessment Bulletin, December 2016. |

**Table 2** – Report structure

| Report section | Description |
|---|---|
| **Section 9**<br>Wire frame diagrams | This section describes and presents wire frame diagrams prepared for this VIA Mod 1. |
| **Section 10**<br>Photomontages | This section describes and presents photomontages prepared for this VIA Mod 1. |
| **Section 11**<br>Cumulative effect | This section considers the potential visual effect of the Mod 1 amendments with regard to the consented Bango Wind Farm. |
| **Section 12**<br>RPWF Conditions of Consent | This section identifies the RPWF Consolidated Conditions of Consent (November 2017) relevant to visual amenity and confirms their applicability to the proposed Mod 1 amendments. |
| **Section 13**<br>Conclusion | Conclusions are drawn on the overall potential visual effect of the proposed Mod 1 amendments within the surrounding viewshed. |

# 3 Mod 1 VIA methodology

## 3.1 Introduction

The VIA Mod 1 included the following tasks:

- desktop review of the consented RPWF and Mod 1 wind turbine layouts
- preparation of ZVI diagrams and cumulative ZVI diagrams
- assessment of visual effects
- preparation of wire frame diagrams and illustrative figures and
- preparation of photomontages.

## 3.2 Desktop study

A desktop study was carried out to review the RPWF consented project together with associated reports and approval documentation. The desktop study also included a review of the consented wind turbine layout, as well as the surrounding landscape and dwelling locations. This was carried out by reference to topographic maps as well as aerial photographs of the surrounding landscape.

## 3.3 ZVI diagrams

ZVI Diagrams were prepared to illustrate the theoretical visibility of the consented RPWF wind turbines (tip and hub height) and Mod 1 wind turbines (tip and hub height). The ZVI diagrams do not illustrate the screening influence of vegetation or built structures above the earth's surface. The ZVI Diagrams are illustrated in **Figures 3** to **8**. Cumulative ZVI have been prepared to illustrate wind turbine visibility between the consented Bango Wind Farm (Buffalo cluster) and the Mod 1 wind turbines. The cumulative ZVI are illustrated in **Figures 48** to **51**.

## 3.4 Proposed Mod 1 visual effects

The determination of potential visual effects resulting from the Mod 1 amendments would result primarily from observable differences between the consented RPWF and the proposed Mod 1 wind turbines. Observable differences may include views toward an increased number of wind turbines (hubs and blade tips) where previously screened by landform, or a reduced number of wind turbines where removed from the project and a difference in distance between view locations and wind turbines.

This VIA has considered the potential visual effects for dwellings located within 4km of the consented RPWF wind turbines. The 4km threshold distance (blue line, refer **Figure 1**) has been established by reference to the NSW Wind Energy Visual Bulletin, December 2016 (Visual Bulletin Figure 5 Visual magnitude thresholds for visual assessment).

This VIA has also considered the potential cumulative visual impacts associated with the RPWF Mod 1 wind turbines and wind turbines within the consented Bango Wind Farm.

## 3.5 The NSW Wind Energy Visual Bulletin, December 2016

The Guidelines state that the NSW Wind Energy Bulletin will apply to any modification application submitted after the date of the Bulletin that propose additional turbines, or a significant reconfiguration or increase in height to the approved turbines. GBD confirm that:

- no additional turbines are proposed. Mod 1 includes a reduction in the number of approved turbines

- there is no significant reconfiguration of turbines. The Mod 1 turbines will be located in approved locations
- the Mod 1 turbines are proposed to increase to a maximum 200m tip height.

GBD has reviewed the Guidelines and confirms this VIA has considered the Visual Assessment Process set out in Appendix 1 of the Guidelines against the proposed Mod 1 amendments where considered relevant to the Mod 1 Application as outlined in Section 8 of this Mod 1 VIA report. This Mod 1 VIA report has not addressed some parts of the Guidelines. These include:

- The NSW Wind Energy Visual Bulletin Stage 1 Preliminary Environmental Assessment (pre-lodgement) guidelines. Stage 1 of the Guidelines is not considered to be pertinent to the proposed Mod 1 VIA as the RPWF is a consented Project and does not require SEARs.
- The NSW Wind Energy Visual Bulletin Stage 2 Assessment and determination which addresses the preparation of a Visual Baseline Study as part of the Environmental Impact Statement and submission to determine the development application. Stage 2 of the Guidelines is not considered pertinent to the proposed Mod 1 VIA as the RPWF is a consented Project.
- the Mod 1 VIA wind turbines have not been evaluated against the Guidelines Visual Performance Objectives as there are no objectives regarding proposed modifications.

### 3.6 Wind turbine wire frame diagrams

Wire frame diagrams have been prepared from the same 26 residential dwelling locations included in the RPWF LVIA 2016 report that supported the original development application. The wire frame diagrams illustrate and contrast the consented RPWF wind turbines and the proposed Mod 1 wind turbines. The residential dwellings for wireframe locations are illustrated in **Figures 1** and **2** and the wireframes in **Figures 13** to **38**.

### 3.7 Photomontages

Photomontages have been prepared from 3 public view locations at the request of the Proponent. The 3 photomontage locations are illustrated in **Figures 1** and **2**. The photomontages include views toward the consented RPWF and the proposed Mod 1 wind turbines and are illustrated in **Figures 39** to **47**.

# 4 Consented RPWF and proposed Mod 1 wind turbine design criteria

## 4.1 Consented RPWF

The RPWF Development Consent permits construction and operation of up to 92 wind turbines to a maximum 157m tip height in addition to a range of ancillary wind farm infrastructure.

## 4.2 Proposed Mod 1 wind turbine

The proposed Mod 1 amended wind turbine would include a tip height of 200m and include a preferred combination of hub height and rotor blade length to achieve this tip height. The preferred combination of hub height and rotor blade length will be consistent across all RPWF wind turbines. The indicative dimensions used for this assessment for hub height and rotor dimeter include:

- a 117.5m hub height and
- rotor diameter up to 165m.

**Table 3** outlines the consented RPWF and Mod 1 wind turbine design criteria.

**Table 3:** Consented RPWF and proposed Mod 1 wind turbine design criteria

| | Modelled hub height | Modelled rotor diameter | Tip height | Total number |
|---|---|---|---|---|
| Consented RPWF wind turbine | 101m | 130m | 157m | 92 |
| Mod 1 wind turbine | Up to 117.5m | Up to 165m | Up to 200m | 80 |
| Difference | +16.5m | +35m | +43m | -12 |
| Percentage difference | +16% | +27% | +27% | -13% |

Other than the removal of 12 consented RPWF wind turbines, no other changes are proposed to the consented turbine locations as part of Mod 1. The consented and Mod 1 wind turbine locations and residential dwellings out to 4km from the Mod 1 wind turbines are shown on **Figures 1** and **2**.

4km
2.7km
R121
R120
R119
R309
R126
R1
T1
T2
R118
R117
R116
R130
R124
R125
R289
R329
T3
T4
T151
R2
T5
T7
T9
T11
T12
R4
R286
R8
R6
R7
R10
R9
R115
R114
R131
R328
R127
R330
R14
R128
R11
R132
R15
PM1
T18
T17
T20
R18
R17
R16
T21
T22
T136
R20
R19
T26
T25
T137
R22
T28
T138
T30
R267
R64
T32
T135
T31
T36
R268
R65
T34
R202
R204
R203
T37
T39
PM5
T43
T41
T42
R113
R24
Rye Park Village.
Refer ZVI Figures 3 - 6
for dwelling locations
within 4km of the Mod 1
wind turbines
R26
R25
T48
T49
R266
R29
R28
R112
T139
T50
R31
T51
4km
2.7km
T61
T58
T62
T141
T63
T64
T65
4km
2.7km
T66
T68
T67
T69
R34
T146
R73
R36
T147
R72
R38
T148
T71
R74
T72
R75
T73
R76
T74
T75
T76
R40
T78
T79
T150
T80
R298
T82
R77
T83
R80
R41
T143

Legend

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 2.7km and 4km of wind turbine
- Non residential structure
- Consented RPWF wind turbines (indicative location)
- Rye Park wind turbine removed by the Planning Assessment Commission or Proponent (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- Photomontage locations PM1, PM5 and PM6

0km 2km

Figure 1
Residential dwelling locations within 4km of consented RPWF wind turbines (north)

# Rye Park Wind Farm Modification 1

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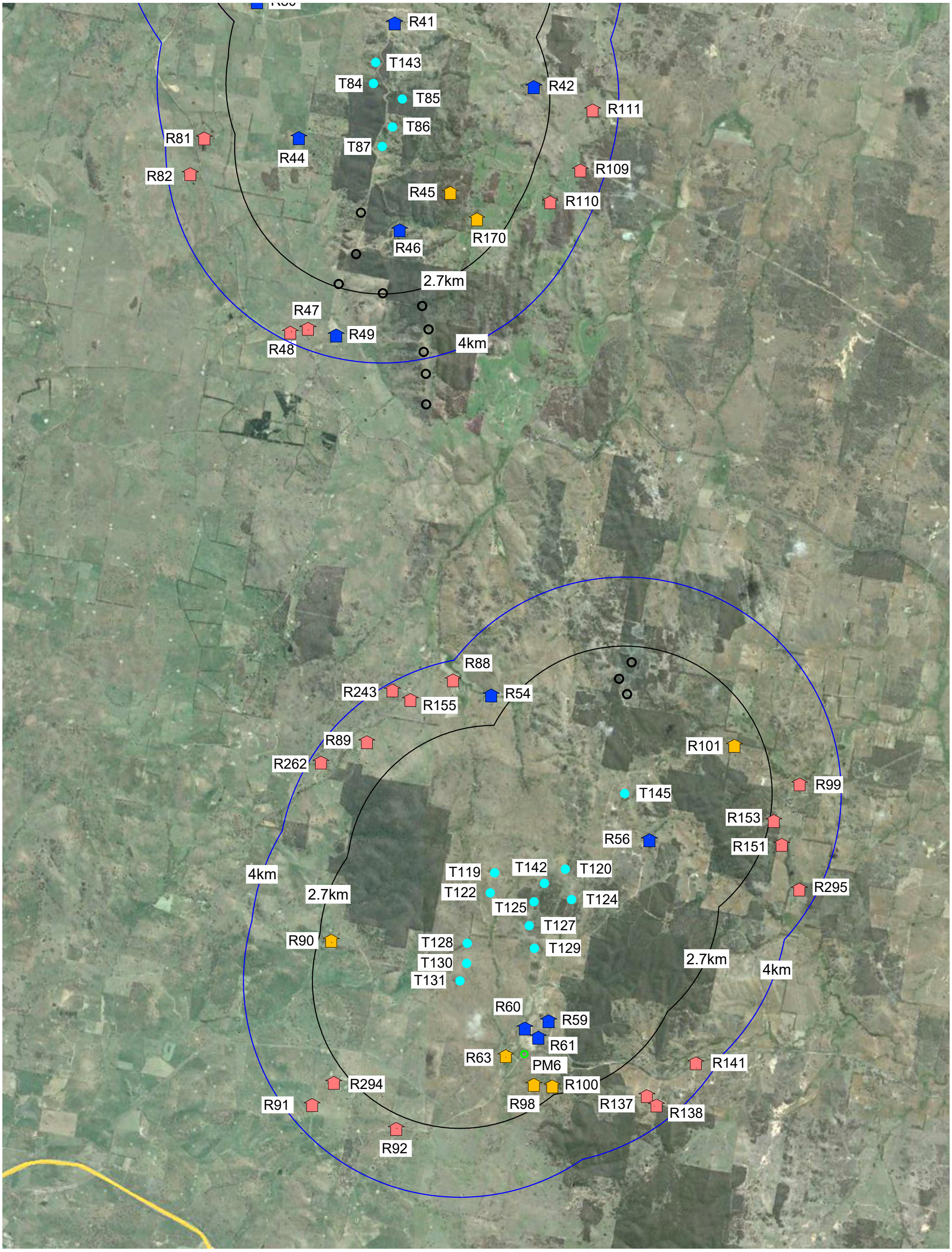


Legend

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 2.7km and 4km of wind turbine
- Non residential structure
- Consented RPWF wind turbines (indicative location)
- Rye Park wind turbine removed by the Planning Assessment Commission or Proponent (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- Photomontage locations PM1, PM5 and PM6

0km 2km

Figure 2
Residential dwelling locations within 4km of consented wind turbines (south)

# Rye Park Wind Farm Modification 1

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### 4.3 Consented RPWF and Mod 1 wind turbines – changes in distance, hub and blade tip visibility

**Table 4** includes 146 residential dwellings within 4km of the consented RPWF wind turbines and identifies:

- the closest consented RPWF wind turbine to each residential dwelling
- any change in distance between residential dwelling, the consented RPWF and the proposed Mod 1 wind turbines
- any change in the number of consented RPWF and proposed Mod 1 wind turbine hubs visible from residential dwellings and
- any change in the number of consented RPWF and proposed Mod 1 wind turbine blade tips visible from residential dwellings.

**Table 4** rows have been shaded grey to identify residential dwellings associated with the project, or where the distance between the residential dwelling and Mod 1 wind turbine now exceeds 4km following the removal of closer wind turbines.

The ZVI Diagrams in **Figures 3** and **4** illustrate the areas surrounding the consented RPWF that would be subject to a potential increase or decrease in the number of visible wind turbine hubs and blade tips as a result of the Mod 1 wind turbines. **Figures 3** and **4** also illustrate the areas where no change in the numbers of visible hubs and blade tips would be likely to occur. The ZVI modelling used to determine the consented and Mod 1 wind turbine hub and blade tip of blade visibility, does not account for built elements or vegetation between the residential dwelling and the wind turbines. The changes in wind turbine hub and tip of blade visibility are therefore considered to be conservative in nature.

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R001 Associated | 677418 | 6187127 | T001 | 911 | 66 | 71 | T001 | 911 | 60 | -6 | 67 | -4 |
| R002 Associated | 678095 | 6185733 | T005 | 539 | 31 | 42 | T005 | 539 | 31 | 0 | 47 | 5 |
| R004 | 680436 | 6185190 | T005 | 2,633 | 21 | 34 | T005 | 2,633 | 25 | 4 | 36 | 2 |
| R006 | 681484 | 6184020 | T017 | 1,347 | 22 | 28 | T017 | 1,347 | 23 | 1 | 27 | -1 |
| R007 | 681917 | 6183967 | T017 | 1,401 | 26 | 32 | T017 | 1,401 | 26 | 0 | 33 | 3 |
| R008 | 682339 | 6183864 | T017 | 1,533 | 3 | 6 | T017 | 1,533 | 3 | 0 | 9 | 3 |
| R009 | 682517 | 6183838 | T017 | 1,633 | 10 | 13 | T017 | 1,633 | 9 | -1 | 17 | 4 |
| R010 | 682842 | 6183767 | T017 | 1,833 | 41 | 68 | T017 | 1,833 | 41 | 0 | 66 | -2 |
| R011 | 679650 | 6183618 | T018 | 1,623 | 20 | 26 | T018 | 1,623 | 19 | -1 | 26 | 0 |
| R014 Associated | 677807 | 6183115 | T012 | 799 | 6 | 9 | T012 | 799 | 6 | 0 | 10 | 1 |
| R015 Associated | 675095 | 6182805 | T012 | 2,420 | 44 | 56 | T012 | 2,420 | 42 | -2 | 57 | 1 |
| R016 Associated | 677297 | 6181991 | T026 | 1,283 | 10 | 15 | T026 | 1,283 | 12 | 2 | 18 | 3 |
| R017 | 676127 | 6181740 | T012 | 2,338 | 23 | 32 | T012 | 2,338 | 25 | 2 | 30 | -2 |
| R018 | 676024 | 6181739 | T012 | 2,393 | 22 | 32 | T012 | 2,393 | 25 | 2 | 36 | 4 |
| R019 | 676412 | 6181665 | T026 | 2,101 | 20 | 29 | T026 | 2,101 | 20 | 0 | 32 | 3 |
| R020 Associated | 676130 | 6181544 | T026 | 2,382 | 24 | 31 | T026 | 2,382 | 22 | -2 | 35 | 4 |
| R022 | 676095 | 6181037 | T028 | 2,394 | 21 | 31 | T028 | 2,394 | 20 | -1 | 37 | 6 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R024 | 683597 | 6178847 | T049 | 2,015 | 6 | 11 | T049 | 2,015 | 6 | 0 | 16 | 5 |
| R025 Associated | 677075 | 6178323 | T043 | 2,106 | 3 | 5 | T043 | 2,106 | 3 | 0 | 7 | 2 |
| R026 | 676523 | 6178178 | T043 | 2,673 | 30 | 42 | T043 | 2,673 | 33 | 3 | 51 | 9 |
| R028 | 684090 | 6177918 | T049 | 2,148 | 33 | 44 | T049 | 2,148 | 29 | -4 | 47 | 3 |
| R029 | 676434 | 6177903 | T043 | 2,862 | 34 | 55 | T043 | 2,862 | 34 | 0 | 57 | 2 |
| R031 Associated | 679304 | 6177019 | T140 | 1,501 | 24 | 32 | T139 | 1,762 (+261) | 22 | -2 | 38 | 6 |
| R034 Associated | 681817 | 6174338 | T069 | 804 | 37 | 51 | T069 | 804 | 35 | -2 | 53 | 2 |
| R036 Associated | 679988 | 6173811 | T067 | 1,447 | 30 | 37 | T067 | 1,447 | 28 | -2 | 42 | 5 |
| R038 | 679623 | 6173620 | T067 | 1,735 | 63 | 74 | T067 | 1,735 | 57 | -6 | 67 | -7 |
| R040 Associated | 678605 | 6171136 | T076 | 1,878 | 5 | 8 | T076 | 1,878 | 7 | 2 | 10 | 2 |
| R041 Associated | 681870 | 6168503 | T143 | 687 | 36 | 53 | T143 | 687 | 32 | -4 | 53 | 0 |
| R042 Associated | 683370 | 6168206 | T085 | 1,712 | 20 | 24 | T085 | 1,712 | 18 | -6 | 25 | 1 |
| R044 Associated | 679986 | 6166322 | T087 | 1,553 | 68 | 74 | T087 | 1,553 | 62 | -6 | 66 | -8 |
| R045 | 682847 | 6165279 | T087 | 1,728 | 38 | 58 | T087 | 1,728 | 39 | 1 | 65 | 7 |
| R046 | 681835 | 6164679 | T087 | 1,751 | 12 | 17 | T087 | 1,751 | 12 | 0 | 21 | 4 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| Associated | | | | | | | | | | | | |
| R047 | 680155 | 6162689 | T087 | 3,963 | 14 | 31 | T087 | 3,963 | 18 | 4 | 48 | 7 |
| R049 Associated | 680667 | 6162540 | T087 | 3,961 | 15 | 17 | T087 | 3,961 | 12 | -3 | 14 | -3 |
| R054 Associated | 683514 | 6155819 | T103 Removed | 2,544 | 7 | 11 | T145 | 3,046 (+502) | 6 | -1 | 11 | 0 |
| R056 Associated | 686567 | 6153140 | T145 | 1,171 | 9 | 13 | T145 | 1,171 | 9 | 0 | 12 | -1 |
| R059 Associated | 684670 | 6149654 | T129 | 1,666 | 15 | 15 | T129 | 1,666 | 12 | -3 | 12 | -3 |
| R060 Associated | 684244 | 6149529 | T131 | 1,697 | 12 | 14 | T131 | 1,697 | 12 | 0 | 12 | -2 |
| R061 Associated | 684489 | 6149335 | T129 | 1,965 | 11 | 11 | T129 | 1,965 | 11 | 0 | 12 | 1 |
| R063 | 683875 | 6148991 | T131 | 1,905 | 12 | 12 | T131 | 1,905 | 12 | 0 | 12 | 0 |
| R064 Associated | 676239 | 6180502 | T032 | 2,332 | 19 | 27 | T032 | 2,332 | 17 | -2 | 29 | 2 |
| R065 | 676668 | 6179644 | T032 | 2,057 | 16 | 21 | T032 | 2,057 | 16 | 0 | 23 | 2 |
| R066 | 683628 | 6159544 | T102 Removed | 3,867 | 5 | 13 | T145 | 5,876 (+2,009) | 5 | 0 | 18 | 5 |
| R067 | 683606 | 6159059 | T102 Removed | 3,541 | 8 | 19 | T145 | 5,450 (+1,909) | 6 | -2 | 21 | 2 |
| R072 | 677635 | 6173854 | T067 | 2,971 | 3 | 21 | T067 | 2,971 | 8 | 5 | 23 | 2 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R073 | 677725 | 6173856 | T067 | 2,890 | 17 | 27 | T067 | 2,890 | 18 | 1 | 34 | 7 |
| R074 | 677256 | 6172562 | T076 | 3,360 | 38 | 52 | T076 | 3,360 | 40 | 2 | 53 | 1 |
| R075 | 677851 | 6172291 | T076 | 2,710 | 2 | 5 | T076 | 2,710 | 2 | 0 | 8 | 3 |
| R076 | 676803 | 6171944 | T076 | 3,669 | 64 | 67 | T076 | 3,669 | 58 | -6 | 62 | -5 |
| R077 (T4) | 677654 | 6169542 | T079 | 3,258 | 39 | 49 | T079 | 3,258 | 35 | -4 | 47 | -2 |
| R080 Associated | 679215 | 6168709 | T143 | 2,316 | 44 | 62 | T143 | 2,316 | 41 | -3 | 65 | 3 |
| R081 (T5) | 678216 | 6166375 | T087 | 3,320 | 20 | 35 | T087 | 3,320 | 22 | 2 | 39 | 4 |
| R082 (T6) | 677982 | 6165692 | T087 | 3,625 | 72 | 75 | T087 | 3,625 | 63 | -9 | 68 | -7 |
| R087 | 682469 | 6156694 | T103 Removed | 3,542 | 17 | 23 | T119 | 4,145 (+603) | 15 | -2 | 25 | 2 |
| R088 | 682860 | 6156066 | T103 Removed | 3,152 | 22 | 31 | T119 | 3,437 (+285) | 21 | -1 | 35 | 4 |
| R089 | 681098 | 6154853 | T119 | 3,328 | 3 | 12 | T119 | 3,328 | 4 | 1 | 15 | 3 |
| R090 | 680583 | 6151407 | T131 | 2,523 | 2 | 4 | T131 | 2,523 | 3 | 1 | 8 | 4 |
| R091 | 680875 | 6148463 | T131 | 3,075 | 11 | 15 | T131 | 3,075 | 11 | 0 | 12 | -3 |
| R092 | 681812 | 6147909 | T131 | 3,020 | 12 | 13 | T131 | 3,020 | 12 | 0 | 12 | -1 |
| R093 | 680723 | 6147619 | T131 | 3,818 | 15 | 15 | T131 | 3,818 | 12 | -3 | 12 | -3 |
| R098 | 684400 | 6148461 | T131 | 2,627 | 11 | 11 | T131 | 2,627 | 11 | 0 | 11 | 0 |
| R099 | 689280 | 6153857 | T145 | 3,196 | 8 | 14 | T145 | 3,196 | 6 | -2 | 17 | 3 |
| R100 | 684738 | 6148432 | T131 | 2,844 | 1 | 2 | T131 | 2,844 | 1 | 0 | 3 | 1 |
| R101 | 688189 | 6154931 | T145 | 2,204 | 4 | 4 | T145 | 2,204 | 1 | -3 | 2 | -2 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R102 | 685395 | 6158972 | T102 Removed | 2,436 | 10 | 12 | T145 | 4,810 (+2,374) | 8 | -2 | 13 | 1 |
| R103 | 688158 | 6159213 | T102 Removed | 3,177 | 62 | 76 | T145 | 5,403 (+2,226) | 54 | -8 | 69 | -7 |
| R104 | 688448 | 6159572 | T102 Removed | 3,639 | 63 | 78 | T145 | 5,848 (+2,209) | 57 | -6 | 76 | -2 |
| R105 | 688749 | 6159082 | T102 Removed | 3,475 | 66 | 78 | T145 | 5,539 (+2,064) | 57 | -9 | 70 | -8 |
| R107 | 686879 | 6160480 | T102 Removed | 3,849 | 57 | 64 | T145 | 6,312 (+2,463) | 48 | -9 | 61 | -3 |
| R108 | 685842 | 6160591 | T102 Removed | 3,925 | 9 | 15 | T145 | 6,381 (+2,456) | 8 | -1 | 13 | -2 |
| R109 | 684831 | 6165424 | T086 | 3,382 | 8 | 10 | T086 | 3,382 | 8 | 0 | 13 | 3 |
| R110 | 684391 | 6165083 | T087 | 3,146 | 16 | 24 | T087 | 3,146 | 19 | 3 | 32 | 8 |
| R111 | 684234 | 6167383 | T085 | 2,318 | 13 | 20 | T085 | 2,318 | 13 | 0 | 18 | -2 |
| R112 | 686151 | 6177467 | T065 | 2,484 | 43 | 57 | T065 | 2,484 | 43 | 0 | 56 | -1 |
| R113 Associated | 684054 | 6179129 | T049 | 2,552 | 17 | 31 | T049 | 2,552 | 17 | 0 | 31 | 0 |
| R114 | 683962 | 6183346 | T017 | 2,678 | 25 | 40 | T017 | 2,678 | 24 | -1 | 41 | 1 |
| R115 | 684767 | 6183708 | T017 | 3,551 | 45 | 59 | T017 | 3,551 | 46 | 1 | 57 | -2 |
| R116 | 681337 | 6185781 | T017 | 3,103 | 19 | 27 | T017 | 3,103 | 20 | 1 | 31 | 4 |
| R117 | 681030 | 6186528 | T005 | 3,459 | 18 | 23 | T005 | 3,459 | 16 | -7 | 25 | 2 |
| R118 | 681128 | 6186796 | T005 | 3,653 | 19 | 27 | T005 | 3,653 | 17 | -2 | 29 | 2 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R119 | 679979 | 6187579 | T005 | 3,165 | 11 | 11 | T005 | 3,165 | 10 | 0 | 11 | 0 |
| R120 | 679167 | 6188823 | T001 | 3,327 | 26 | 35 | T001 | 3,327 | 27 | 1 | 43 | 8 |
| R121 | 673113 | 6188366 | T001 | 3,903 | 38 | 52 | T001 | 3,903 | 36 | -2 | 54 | 2 |
| R124 | 673168 | 6185478 | T004 | 3,152 | 78 | 89 | T004 | 3,152 | 72 | -6 | 78 | -11 |
| R125 | 673241 | 6185272 | T004 | 3,088 | 76 | 90 | T004 | 3,088 | 72 | -4 | 78 | -12 |
| R126 | 673137 | 6186723 | T003 | 3,289 | 46 | 72 | T003 | 3,289 | 52 | 6 | 73 | 1 |
| R127 | 672865 | 6184811 | T004 | 3,525 | 78 | 89 | T004 | 3,525 | 71 | -7 | 78 | -11 |
| R128 Associated | 678848 | 6183498 | T018 | 1,084 | 26 | 37 | T018 | 1,084 | 28 | 2 | 36 | -1 |
| R130 | 673183 | 6185598 | T004 | 3,139 | 79 | 88 | T004 | 3,139 | 71 | -8 | 78 | -10 |
| R131 Associated | 674633 | 6183862 | T006 Removed | 2,173 | 61 | 69 | T004 | 2,358 (+185) | 57 | -4 | 73 | 4 |
| R132 Associated | 675005 | 6182884 | T012 | 2,473 | 38 | 47 | T012 | 2,473 | 35 | -3 | 45 | -2 |
| R137 | 686573 | 6148420 | T129 | 3,605 | 11 | 15 | T129 | 3,605 | 12 | 1 | 12 | -3 |
| R138 | 686660 | 6148328 | T129 | 3,731 | 2 | 7 | T129 | 3,731 | 3 | 1 | 6 | -1 |
| R141 | 687456 | 6149042 | T129 | 3,797 | 0 | 0 | T129 | 3,797 | 0 | 0 | 0 | 0 |
| R151 | 689009 | 6153254 | T145 | 3,060 | 23 | 55 | T145 | 3,060 | 27 | 4 | 63 | 8 |
| R153 | 689004 | 6153469 | T145 | 2,994 | 15 | 35 | T145 | 2,994 | 15 | 0 | 46 | 11 |
| R155 | 682087 | 6155970 | T119 | 3,607 | 12 | 22 | T119 | 3,607 | 11 | -1 | 26 | 4 |
| R156 | 682424 | 6156503 | T103 Removed | 3,575 | 17 | 26 | T119 | 3,976 (+401) | 16 | -1 | 26 | 0 |
| R157 | 682567 | 6157576 | T103 | 3,633 | 1 | 3 | T145 | 4,879 | 2 | 1 | 8 | 5 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| | | | Removed | | | | | (+1,246) | | | | |
| R170 | 683284 | 6165017 | T087 | 2,231 | 0 | 4 | T087 | 2,231 | 0 | 0 | 9 | 5 |
| R177 | 675210 | 6178587 | T032 | 3,831 | 63 | 80 | T032 | 3,831 | 60 | -3 | 78 | -2 |
| R179 | 675135 | 6178717 | T032 | 3,837 | 58 | 71 | T032 | 3,837 | 56 | -2 | 71 | 0 |
| R180 | 675088 | 6178761 | T032 | 3,860 | 65 | 78 | T032 | 3,860 | 61 | -4 | 76 | -2 |
| R186 | 675142 | 6178988 | T032 | 3,718 | 60 | 77 | T032 | 3,718 | 61 | 1 | 75 | -2 |
| R187 | 675113 | 6178835 | T032 | 3,807 | 65 | 79 | T032 | 3,807 | 64 | -1 | 75 | -4 |
| R188 | 675224 | 6179170 | T032 | 3,574 | 57 | 77 | T032 | 3,574 | 59 | 2 | 73 | -4 |
| R190 | 674929 | 6179085 | T032 | 3,881 | 71 | 85 | T032 | 3,881 | 68 | -3 | 76 | -9 |
| R191 | 674993 | 6179119 | T032 | 3,809 | 66 | 82 | T032 | 3,809 | 65 | -1 | 76 | -6 |
| R192 Associated | 675172 | 6179170 | T032 | 3,624 | 54 | 73 | T032 | 3,624 | 55 | 1 | 72 | -1 |
| R193 | 675059 | 6178927 | T032 | 3,818 | 65 | 78 | T032 | 3,818 | 67 | 2 | 76 | -2 |
| R194 | 675004 | 6178932 | T032 | 3,867 | 71 | 80 | T032 | 3,867 | 68 | -3 | 76 | -4 |
| R197 | 675003 | 6178871 | T032 | 3,892 | 71 | 82 | T032 | 3,892 | 67 | -4 | 77 | -5 |
| R198 | 675154 | 6178827 | T032 | 3,773 | 62 | 78 | T032 | 3,773 | 61 | -1 | 74 | -4 |
| R199 | 675207 | 6178841 | T032 | 3,719 | 57 | 77 | T032 | 3,719 | 60 | 3 | 74 | -3 |
| R200 | 675115 | 6178809 | T032 | 3,815 | 64 | 79 | T032 | 3,815 | 63 | -1 | 76 | -3 |
| R202 | 684519 | 6179497 | T049 | 3,143 | 27 | 42 | T049 | 3,143 | 24 | -3 | 41 | -1 |
| R204 | 675863 | 6179390 | T032 | 2,899 | 39 | 55 | T032 | 2,899 | 38 | -1 | 57 | 2 |
| R218 | 687614 | 6160188 | T102 Removed | 3,765 | 46 | 62 | T145 | 6,161 (+2,396) | 37 | -9 | 61 | -1 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R226 | 675069 | 6178599 | T032 | 3,950 | 61 | 73 | T032 | 3,950 | 58 | -3 | 71 | -2 |
| R230 | 675291 | 6179035 | T032 | 3,563 | 56 | 75 | T032 | 3,563 | 56 | 0 | 73 | -2 |
| R243 | 681627 | 6156031 | T119 | 3,880 | 15 | 24 | T119 | 3,880 | 14 | -1 | 27 | 3 |
| R262 | 680441 | 6154534 | T119 | 3,689 | 3 | 4 | T119 | 3,689 | 0 | -3 | 3 | -1 |
| R266 | 676126 | 6178067 | T043 | 3,084 | 39 | 57 | T043 | 3,084 | 38 | -1 | 62 | 5 |
| R267 | 675619 | 6180141 | T032 | 2,965 | 45 | 58 | T032 | 2,965 | 45 | 0 | 63 | 5 |
| R268 | 675798 | 6179747 | T032 | 2,854 | 42 | 55 | T032 | 2,854 | 43 | 1 | 57 | 2 |
| R269 | 675542 | 6178459 | T043 | 3,546 | 52 | 75 | T043 | 3,546 | 55 | 3 | 75 | 0 |
| R270 | 675545 | 6178651 | T032 | 3,509 | 55 | 72 | T032 | 3,509 | 52 | -3 | 75 | 3 |
| R272 | 675077 | 6178674 | T032 | 3,909 | 61 | 71 | T032 | 3,909 | 56 | -5 | 68 | -3 |
| R274 | 675072 | 6178723 | T032 | 3,892 | 61 | 72 | T032 | 3,892 | 56 | -5 | 71 | -1 |
| R276 | 674959 | 6179291 | T032 | 3,786 | 53 | 67 | T032 | 3,786 | 52 | -1 | 62 | -5 |
| R282 | 672813 | 6183624 | T006 | 3,880 | 50 | 70 | T004 | 3,981 | 54 | 4 | 70 | 0 |
| R286 | 683162 | 6184437 | T017 | 2,512 | 79 | 84 | T017 | 2,512 | 70 | -9 | 77 | -7 |
| R288 | 675035 | 6179594 | T032 | 3,632 | 48 | 64 | T032 | 3,632 | 47 | -1 | 63 | -1 |
| R289 | 672895 | 6185072 | T004 | 3,453 | 73 | 89 | T004 | 3,453 | 69 | -4 | 79 | -10 |
| R294 | 681540 | 6148503 | T131 | 2,626 | 12 | 13 | T131 | 2,626 | 12 | 0 | 12 | -1 |
| R295 | 689276 | 6153049 | T145 | 3,379 | 15 | 33 | T145 | 3,379 | 16 | 1 | 36 | 3 |
| R296 | 689334 | 6159068 | T102 Removed | 3,911 | 79 | 88 | T145 | 5,830 (+1,919) | 71 | -8 | 77 | -11 |
| R298 | 677624 | 6169761 | T079 | 3,210 | 39 | 47 | T079 | 3,210 | 37 | -2 | 47 | 0 |
| R309 | 681194 | 6187371 | T005 | 3,983 | 8 | 20 | T005 | 3,983 | 12 | 4 | 25 | 5 |

**Table 4 Changes in distance, potential blade tip and hub visibility**

| House ID | Easting GDA94z55 | Northing GDA94z55 | Rye Park (Consented) – Visible turbines | | | | Rye Park (Mod 1) – Visible turbines | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Nearest WTG | Distance (m) | ZVI count (hubs) | ZVI count (blade tips) | Nearest WTG | Distance (m) | ZVI count (hubs) | Change in hub visibility | ZVI count (blade tips) | Change in blade tip visibility |
| R310 | 674929 | 6179121 | T032 | 3,869 | 70 | 85 | T032 | 3,869 | 67 | -3 | 76 | -9 |
| R314 | 688121 | 6159393 | T102 Removed | 3,301 | 61 | 75 | T145 | 5,557 (+2,256) | 52 | -9 | 70 | -5 |
| R315 | 686718 | 6158805 | T102, Removed | 2,175 | 1 | 2 | T145 | 4,631 (+2,456) | 0 | -1 | 0 | -2 |
| R325 | 675154 | 6178653 | T032 | 3,849 | 64 | 81 | T032 | 3,849 | 61 | -3 | 78 | -3 |
| R328 Associated | 674877 | 6183534 | T006 Removed | 2,210 | 58 | 70 | T004 | 2,446 (+236) | 55 | -3 | 74 | 4 |
| R329 | 673626 | 6185507 | T004 | 2,694 | 74 | 87 | T004 | 2,694 | 71 | -3 | 77 | -10 |
| R330 | 675185 | 6183010 | T012 | 2,261 | 53 | 68 | T012 | 2,261 | 51 | -2 | 70 | 2 |

Notes:

The ZVI modelling used to determine the consented and Mod 1 wind turbine hub and tip of blade visibility, does not account for built elements or vegetation between the residential dwelling and the wind turbines. The changes in wind turbine hub and tip of blade visibility are therefore considered to be conservative in nature

Numbers in brackets (+) indicate the increased distance (in metres) between the consented RPWF wind turbine and dwelling as a result of the reduction in wind turbines proposed by Mod 1.

Boorowa

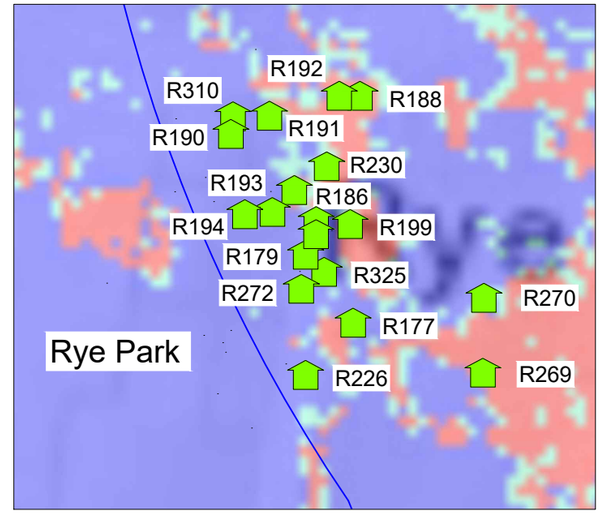
Bevendale

Dalton

Bowning

Rye Park Village. Refer inset for dwelling locations within 4km of the wind turbines

Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Visible increase or decrease between consented RPWF and proposed Mod 1 wind turbine hubs

- Areas with a potential increase in wind turbine hub visibility
- Areas with a potential no change in wind turbine hub visibility
- Areas with a potential decrease in wind turbine hub visibility
- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 2.7km and 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

Figure 3
Increase or decrease between consented RPWF and proposed Mod 1 hub visibility

0km 5km

# Rye Park Wind Farm Modification 1

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landscape architects

Boorowa

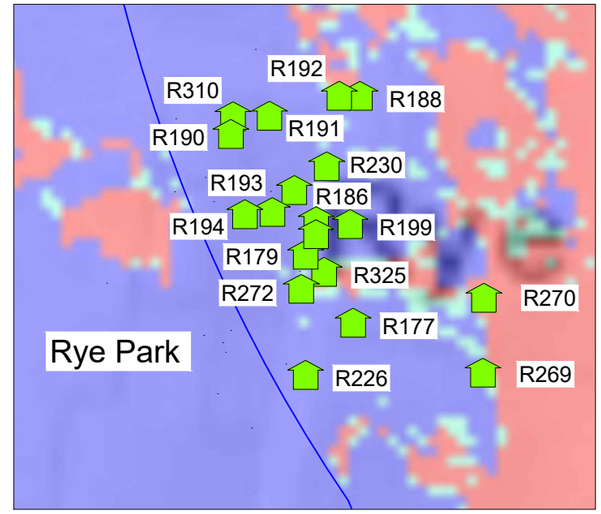
Rye Park Village.
Refer inset for dwelling locations within 4km of the wind turbines

Bevendale

Dalton

Bowning

Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Visible increase or decrease between consented RPWF and proposed Mod 1 wind turbine blade tips

- Areas with a potential increase in wind turbine blade tip visibility
- Areas with a potential no change in wind turbine blade tip visibility
- Areas with a potential decrease in wind turbine blade tip visibility

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 2.7km and 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

Figure 4
Increase or decrease between consented RPWF and proposed Mod 1 blade tip visibility

0km 5km

# Rye Park Wind Farm Modification 1

GREEN BEAN DESIGN
landscape architects

### 4.4 Summary of proposed Mod 1 wind turbine distance, hub and blade tip changes

The determination of the magnitude of visual change between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would result primarily from observable differences between the consented and Mod 1 wind turbines. Observable differences from residential dwellings within 4km of the wind turbines would include:

- views toward more wind turbine hubs (as modelled) and blade tips where previously screened by landform
- views toward fewer wind turbines where removed by the Proponent and
- an increase in distance between a residential dwelling and consented wind turbine locations.

**Table 4** indicates that the proposed Mod1 wind turbine would result in:

- up to 30 residential dwellings having views toward **additional wind turbine hubs** within 4km of the consented wind turbines
- up to 48 residential dwellings having views toward **fewer wind turbine hubs** within 4km of the consented wind turbines
- up to 23 residential dwellings having views toward the **same number of wind turbine hubs** within 4km of the consented wind turbines
- up to 45 residential dwellings having views toward **additional wind turbine blade tips** within 4km of the consented wind turbines
- up to 46 residential dwellings having views toward **fewer wind turbine blade tips** within 4km of the consented wind turbines
- up to 10 residential dwellings having views toward the **same number of wind turbine blade tips** within 4km of the consented wind turbines, and
- up to 19 residential dwellings having views toward **additional wind turbine hubs and blade tips**.

**Table 4** also indicates that no wind turbines will be located closer to residential dwellings than the consented RPWF wind turbine layout and, for 17 residential dwellings, the distance to the Mod 1 wind turbines will increase where consented RPWF wind turbines have been removed by the Proponent.

# 5 Zone of Visual Influence Diagrams

## 5.1 Introduction

**Figures 5** to **8** illustrate the theoretical visibility of the consented RPWF wind turbines and the proposed Mod 1 wind turbines. The ZVI diagrams do not account for the screening influence of vegetation or built structures and are therefore considered to be a very conservative worst-case estimate of potential visibility of the wind turbines.

Recognising the very conservative results of the ZVI diagrams, they demonstrate that the potential visibility of both the consented RPWF and the Mod 1 wind turbines cover a very similar geographical extent beyond the wind farm site.

Whilst the overall extent of wind turbine visibility would be varied by topography for both the consented RPWF and the Mod 1 wind turbines, the number of wind turbines visible (to tip height) from receiver locations within the wind farm viewshed is unlikely to change significantly. When compared to the consented RPWF wind turbines, the increase in wind turbine visibility would be largely restricted to the upper sections (hubs and tip of blades) of wind turbine structures, rather than whole wind turbines.

Rye Park Village. Refer ZVI inset for dwelling locations within 4km of the Mod 1 wind turbines

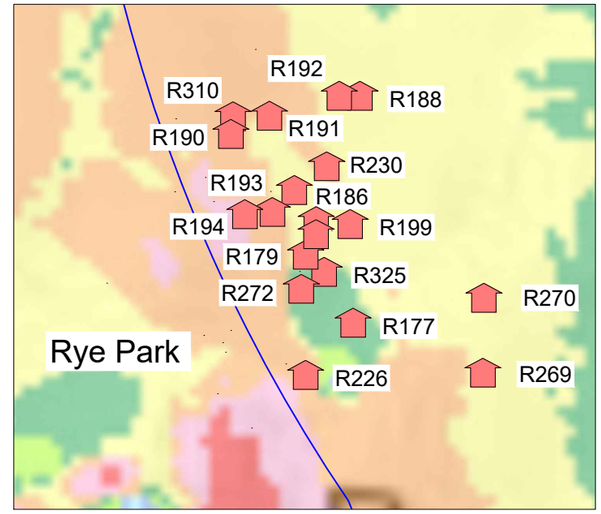
Boorowa

Bevendale

Dalton

Bowning

Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Number of consented RPWF wind turbines visible to modelled hub height

- 100 WTGs
- 90 WTGs
- 80 WTGs
- 70 WTGs
- 60 WTGs
- 50 WTGs
- 40 WTGs
- 30 WTGs
- 20 WTGs
- 10 WTGs
- 0 WTGs

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

0km 5km

Figure 5 ZVI
Number of consented RPWF wind turbines visible to modelled hub height

# Rye Park Wind Farm Modification 1

GREEN BEAN DESIGN
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Rye Park Village. Refer inset for dwelling locations within 4km of the Mod 1 wind turbines

Boorowa

Bevendale

Dalton

Bowning

Laverstock

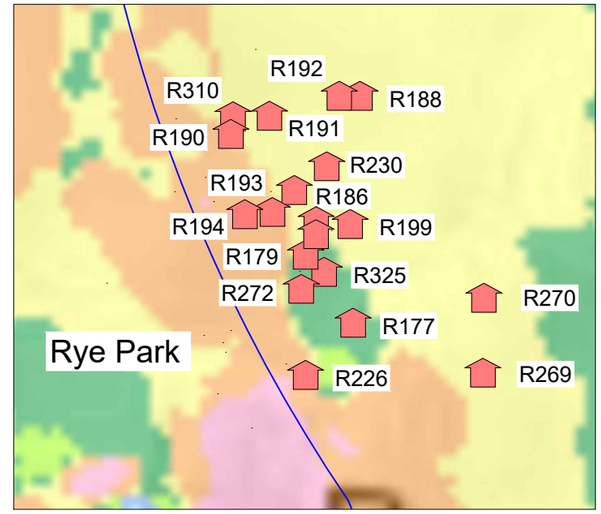
Kangiara

Broadway

Dolong

Jerrawa

Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Number of proposed Mod 1 wind turbine visible to modelled hub height

- 100 WTGs
- 90 WTGs
- 80 WTGs
- 70 WTGs
- 60 WTGs
- 50 WTGs
- 40 WTGs
- 30 WTGs
- 20 WTGs
- 10 WTGs
- 0 WTGs

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

0km 5km

Figure 6 ZVI
Number of proposed Mod 1 wind turbines visible to modelled hub height

# Rye Park Wind Farm Modification 1

GREEN BEAN DESIGN
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Boorowa

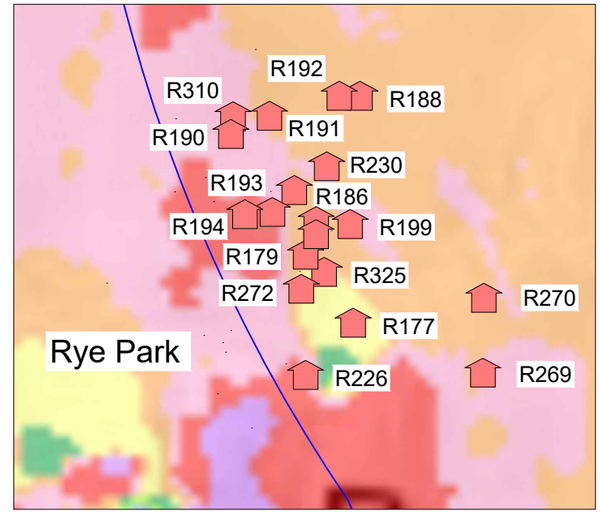
Bevendale

Dalton

Bowning

Rye Park Village.
Refer inset for dwelling locations within 4km of the Mod 1 wind turbines

Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Number of consented RPWF wind turbines visible to 157m tip height

- 100 WTGs
- 90 WTGs
- 80 WTGs
- 70 WTGs
- 60 WTGs
- 50 WTGs
- 40 WTGs
- 30 WTGs
- 20 WTGs
- 10 WTGs
- 0 WTGs

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

Figure 7 ZVI
Number of consented RPWF wind turbines visible to 157m tip height

0km 5km

# Rye Park Wind Farm Modification 1

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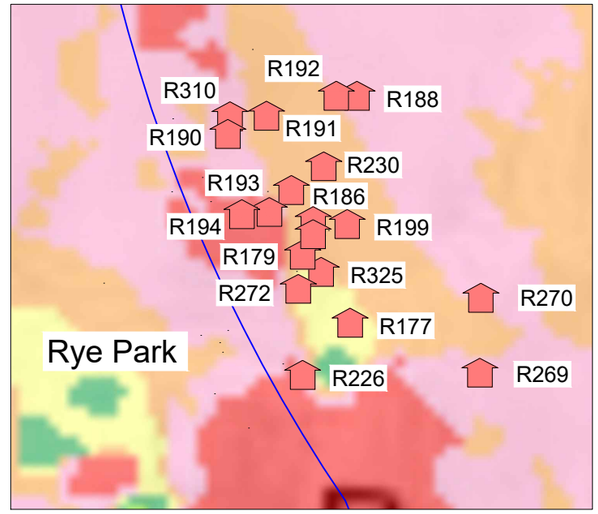
Rye Park Village Detail (RU5 Zone)




Rye Park Village - residential dwellings within 4km of consented wind turbines

LEGEND:
Number of proposed Mod 1 wind turbine visible to 200m tip height

- 100 WTGs
- 90 WTGs
- 80 WTGs
- 70 WTGs
- 60 WTGs
- 50 WTGs
- 40 WTGs
- 30 WTGs
- 20 WTGs
- 10 WTGs
- 0 WTGs

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine

Figure 8- ZVI
Number of proposed Mod 1 wind turbines visible to 200m tip height

0km 5km

# Rye Park Wind Farm Modification 1

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# 6 Ancillary structures

## 6.1 Introduction

The consented RPWF includes a range of ancillary structures which include, but are not limited to:

- wind monitoring masts
- on-site access tracks
- substations
- overhead powerline and
- operation and maintenance facilities building.

The proposed Mod 1 amendment would not result in any fundamental change to consented RPWF ancillary structures and would not result in any additional visual impacts to those outlined in the consented application.

# 7 Comparison of the consented RPWF and proposed Mod 1 wind turbines

## 7.1 Introduction

A comparison of the consented RPWF and proposed Mod 1 wind turbines is illustrated in **Figures 9** and **10**. This VIA notes that the proposed Mod 1 wind turbine would extend approximately half a blade length above the consented wind turbine design envelope. The Mod 1 wind turbine hub (as modelled) would remain within the consented wind turbine design envelope. It is also noted that the proposed Mod 1 wind turbines would be consistent with the consented RPWF wind turbines with regard to their visual form, design, pattern and colour.

**Figure 11** illustrates the elevated angle of view (toward tip height) for the consented RPWF and Mod 1 wind turbines from a view distance of 2.7km and 4km respectively. **Figure 11** illustrates that the Mod 1 wind turbine would result in an additional view angle of less than one degree above the consented RPWF wind turbine from a 2.7km view distance. The additional view angle from a view distance of 4km would be approximately 37 minutes (just over a half of one degree) increase in view angle.

Given the parameters of normal human vision include an approximate horizontal 180 degree field of view, and an approximate combined vertical 135 degree field of view, the Mod 1 wind turbines are not considered to give rise to any significant additional magnitude of visual change for the proposed Mod 1 wind turbines.

**Figure 12** illustrates the perceived and relative height difference between the consented RPWF wind turbine and the Mod 1 wind turbine. From a view distance of 4km the consented RPWF and proposed Mod 1 wind turbines would be perceived at less than half the height of the proposed Mod 1 wind turbine when viewed at a distance of 2.7km. The increase in view angle toward the proposed Mod 1 wind turbine tip height, at a view distance of 4km (and beyond) is considered to be a small increase within the field of view of normal human vision.

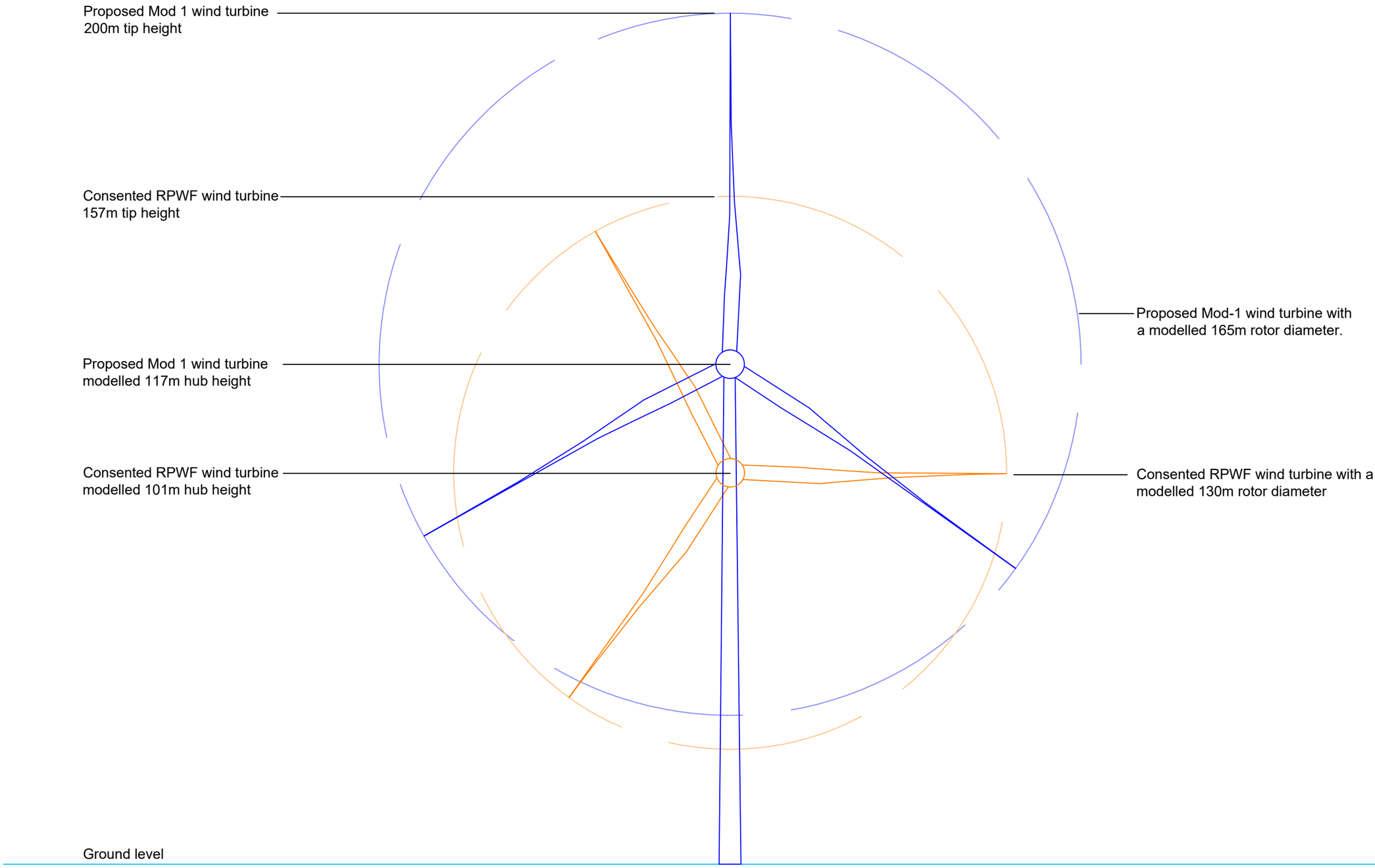


Figure 9-
Consented RPWF and proposed
Mod 1 wind turbine overlay comparison

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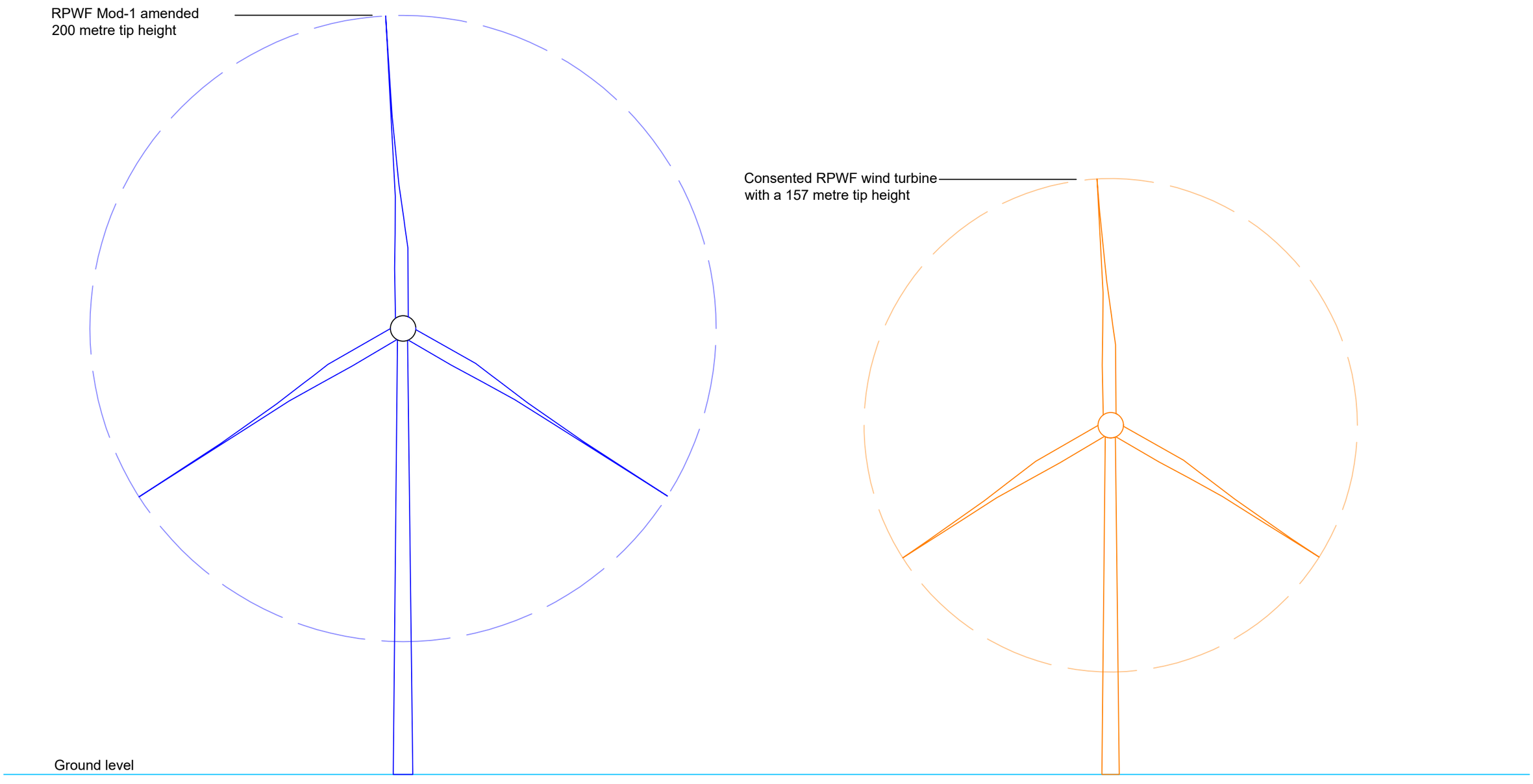
# Rye Park Wind Farm Modification 1




Proposed Mod 1 wind turbine with a modelled 200m tip height

RPWF approved wind turbine with a 157 metre tip height

Figure 10-
Consented RPWF and proposed
Mod 1 wind turbine tip height comparison

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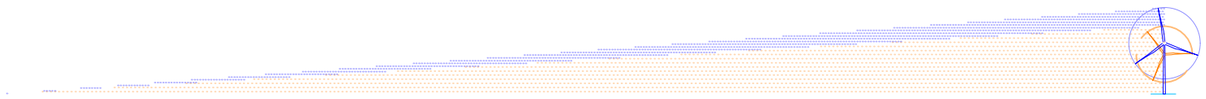
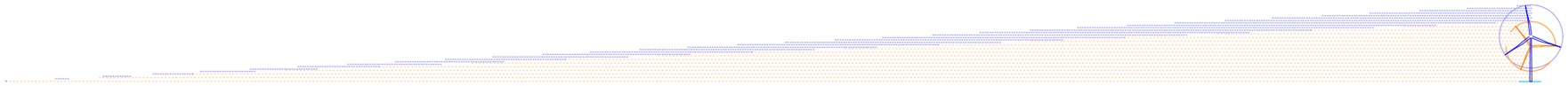
# Rye Park Wind Farm Modification 1

Orange line = view line toward consented RPWF wind turbine 157m tip height

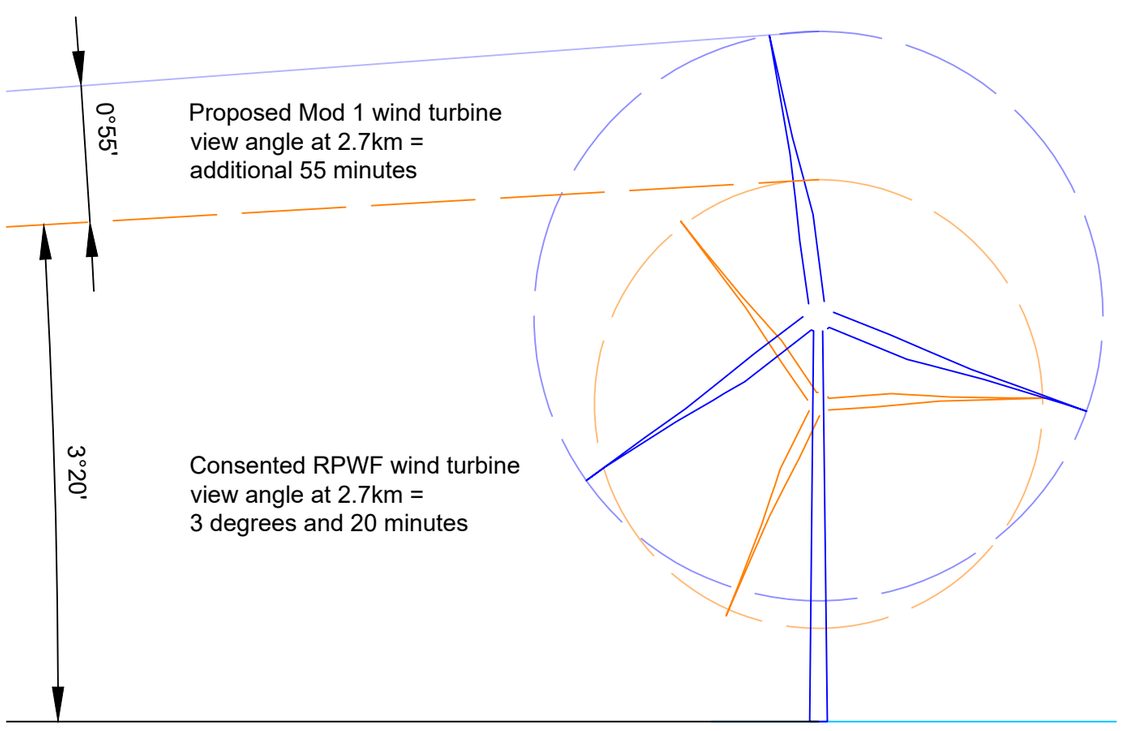
Blue line = view line toward proposed Mod 1 wind turbine 200m tip height



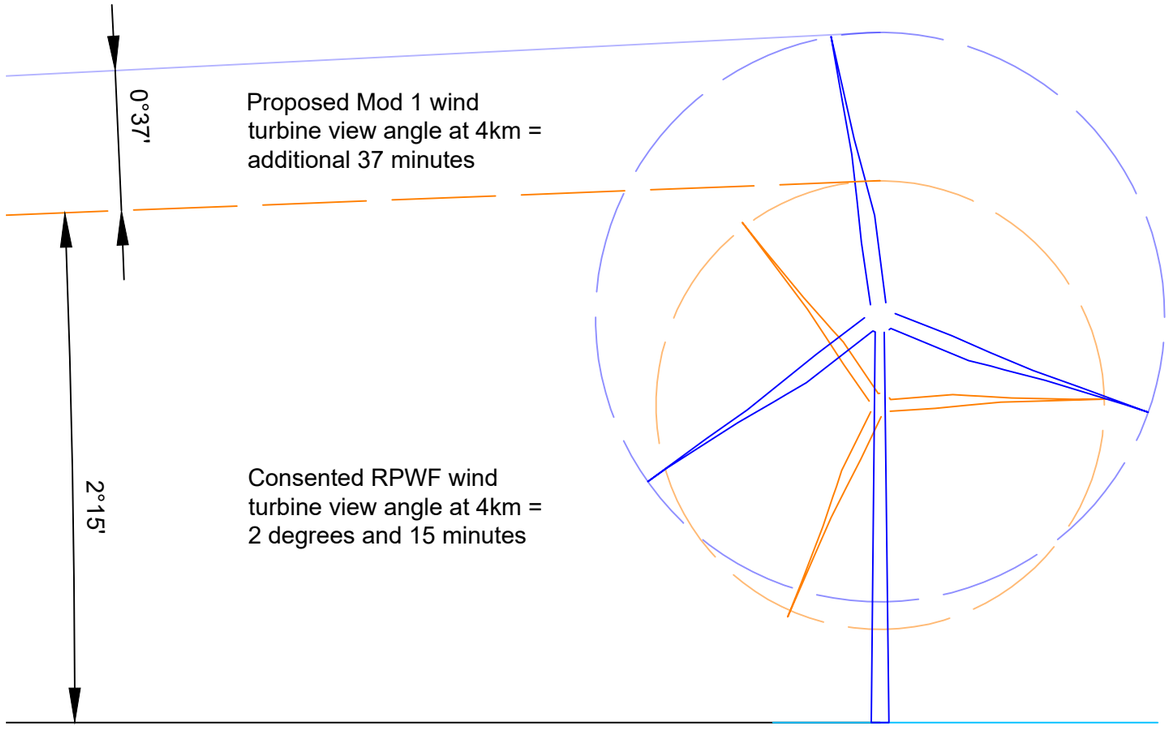
Comparative view toward consented RPWF and proposed Mod 1 wind turbine tip heights from a 2.7km view distance



Comparative view toward consented RPWF and proposed Mod 1 wind turbine tip heights from a 4km view distance

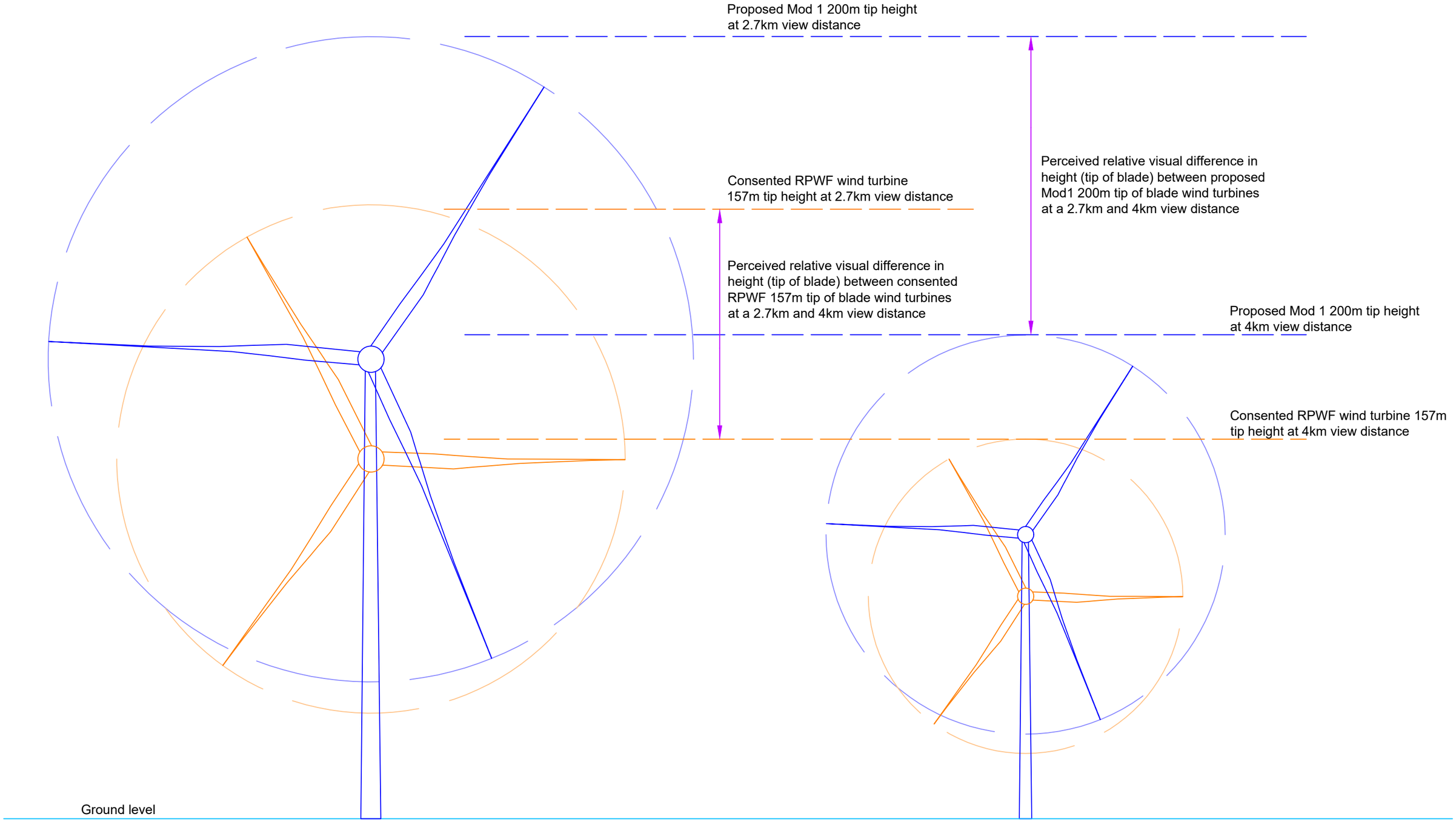



Comparison of view angle toward consented RPWF and Mod 1 wind turbines from 2.7km view distance




Comparison of view angle toward consented RPWF and Mod 1 wind turbines from 4km view distance

Figure 11 -
View angle comparison between consented RPWF and proposed Mod 1 wind turbine tip heights




Effect of distance on perceived relative visual scale between consented RPWF 157m wind turbine and proposed Mod 1 wind turbine at 2.7km view distance

Effect of distance on perceived relative visual scale between consented RPWF 157m wind turbine and proposed Mod 1 wind turbine at 4km view distance

Figure 12 - Effect of distance on views toward consented RPWF and Mod 1 wind turbines at 2.7km and 4km

# Rye Park Wind Farm Modification 1

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# 8 Proposed Mod 1 wind turbine potential visual effect

## 8.1 Introduction

The potential visual effect of the proposed Mod 1 wind turbines has considered the magnitude of visual change associated with the Mod 1 wind turbines against the consented RPWF wind turbines. This included identifying increases or decreases in numbers of wind turbine hubs and blade tips visible from residential dwelling viewpoints. The viewer sensitivity at residential dwellings, and distance from the consented wind turbines, has been considered against the magnitude of visual change to determine if the degree of change (the delta) would change the visual RPWF LVIA 2016 visual impact rating.

This VIA also takes into account visual assessment criteria from the Guidelines. These criteria have been used to review and confirm the visual impacts determined in the RPWF LVIA 2016. The criteria include:

- category of receiver location and sensitivity levels as defined in the Guidelines (refer Visual Bulletin Appendix 1, Table 5 Viewer Sensitivity Classification)
- distance (and distance zones) as defined in the Guidelines (refer Visual Bulletin Appendix 1, Table 6 Visibility distance zones)
- visual influence zones (combining distance, sensitivity levels and landscape scenic quality) as defined in the Guidelines (refer Visual Bulletin Appendix 1, Table 8 Visual Influence Zones).
- potential magnitude of visual change between the consented RPWF and Mod 1 wind turbines (refer Table 4 of this VIA report), and
- the presence of existing screening (e.g. tree planting) between the dwelling and the wind turbines (previously identified in the RPWF LVIA 2016).

**Table 5** sets out the non-associated residential dwellings within 4km of the proposed Mod 1 wind turbines and identifies categories of viewers and sensitivity levels in accordance with the Guidelines. The distance between the consented RPWF wind turbines and non-associated residential dwellings are also categorised in accordance with the Guidelines; however, distances between residential dwellings and wind turbines remains the same as the consented RPWF wind turbine layout unless wind turbines have been removed resulting in an increased distance between dwellings and turbines.

Whilst **Table 5** includes a determination of Visual Influence Zones (as high, medium or low) in accordance with the Guidelines, GBD notes the application of the VIZ against the Guidelines Visual Performance Objectives is not applicable as the RPWF wind turbines have already been consented.

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| R004<br>Non associated | Rural dwelling<br>Level 2 | 2,633<br>Near middleground | VIZ2 | The magnitude of visual change would be limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +4 hubs and +2 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R006<br>Non associated | Rural dwelling<br>Level 2 | 1,347<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as existing tree cover. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and -1 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| R007<br>Non associated | Rural dwelling<br>Level 2 | 1,401<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree cover and timbered areas beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +3 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R008<br>Non associated | Rural dwelling<br>Level 2 | 1,533<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree cover and timbered areas beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines. | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +3 blade tips. | | |
| R009<br>Non associated | Rural dwelling<br>Level 2 | 1,633<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree cover and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +4 blade tips. | Low (nil) | Unchanged from consented RPWF assessment of visual effects. |
| R010<br>Non associated | Rural dwelling<br>Level 2 | 1,833<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree cover beyond the dwelling. There would be a limited change in the composition or | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -2 blade tips. | | |
| R011<br>Non associated | Rural dwelling<br>Level 2 | 1,623<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree shelter planting beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hub and +0 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R017<br>Non associated | Rural dwelling<br>Level 2 | 2,338<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting beyond the dwelling. There would be a limited change in the composition or | Residential dwelling not assessed in | Moderate |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and -2 blade tips. | the RPWF LVIA 2016 | |
| R018<br>Non associated | Rural dwelling<br>Level 2 | 2,393<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and +4 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R019<br>Non associated | Rural dwelling<br>Level 2 | 2,101 | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +3 blade tips. | | assessment of visual effects. |
| R022<br>Non associated | Rural dwelling<br>Level 2 | 2,394<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +6 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R024<br>Non associated | Rural dwelling<br>Level 2 | 2,015<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond | Low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +5 blade tips. | | assessment of visual effects. |
| R026<br>Non associated | Rural dwelling<br>Level 2 | 2,673<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +3 hubs and +9 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R028<br>Non associated | Rural dwelling<br>Level 2 | 2,148<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond | Low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and +3 blade tips. | | assessment of visual effects. |
| R029<br>Non associated | Rural dwelling<br>Level 2 | 2,862<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +2 blade tips. | Moderate<br>low | Unchanged from consented RPWF assessment of visual effects. |
| R038<br>Non associated | Rural dwelling<br>Level 2 | 1,735<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by some tree planting between the dwelling and closest | High<br>moderate | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | consented RPWF wind turbines. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -6 hubs and -7 blade tips. | | assessment of visual effects. |
| R045<br>Non associated | Rural dwelling<br>Level 2 | 1,728<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +7 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R047<br>Non associated | Rural dwelling<br>Level 2 | 3,963<br>Near middleground | VIZ2 | The magnitude of visual change would be reduced by an increase in distance between the dwelling and closest | High moderate | Changed to Low |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | consented RPWF wind turbine, from 1.2km to 3.9km due to a reduction in the number of Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +4 hubs and +17 blade tips. Additional visible hubs and blade tips would be in excess of 3.9km from the residential dwelling. | | |
| R063<br>Non associated | Rural dwelling<br>Level 2 | 1,905<br>Far foreground | VIZ1 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and 0 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R065<br>Non associated | Rural dwelling<br>Level 2 | 2,057<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF | Low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +2 blade tips. | | assessment of visual effects. |
| R072<br>Non associated | Rural dwelling<br>Level 2 | 2,971<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +5 hubs and +2 blade tips. | Low (nil) | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| R073<br>Non associated | Rural dwelling<br>Level 2 | 2,890<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +7 blade tips. | Low (nil) | Unchanged from consented RPWF assessment of visual effects. |
| R074<br>Non associated | Rural dwelling<br>Level 2 | 3,360<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and +1 blade tips. | | |
| R075<br>Non associated | Rural dwelling<br>Level 2 | 2,710<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +3 blade tips. | Low<br>(Nil) | Unchanged from consented RPWF assessment of visual effects. |
| R076<br>Non associated | Rural dwelling<br>Level 2 | 3,669<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and beyond the dwelling. There would be a limited change in the | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -6 hubs and -5 blade tips. | | |
| R077 (T4)<br>Non associated | Rural dwelling<br>Level 2 | 3,258<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and -2 blade tips. | Moderate<br>Low | Unchanged from consented RPWF assessment of visual effects. |
| R081 (T5)<br>Non associated | Rural dwelling<br>Level 2 | 3,320<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and beyond the | Low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and +4 blade tips. | | assessment of visual effects. |
| R082 (T6)<br>Non associated | Rural dwelling<br>Level 2 | 3,625<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -9 hubs and -7 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R088<br>Non associated | Rural dwelling<br>Level 2 | 3,152<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF | Moderate low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | wind turbine as well as tree planting and beyond the dwelling. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +4 blade tips. | | assessment of visual effects. |
| R089<br>Non associated | Rural dwelling<br>Level 2 | 3,328<br>Near middleground | VIZ2 | The magnitude of visual change would be reduced by the removal of wind turbines 102, 103 and 104 from the Mod 1 wind turbine layout.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +3 blade tips. | Moderate low | Changes to Low |
| R090<br>Non associated | Rural dwelling<br>Level 2 | 2,523<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine as well as tree planting and landform beyond the dwelling. There would be a limited change in the | Low (Nil) | Changes to Low |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +4 blade tips. | | |
| R091<br>Non associated | Rural dwelling<br>Level 2 | 3,075<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -3 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R092<br>Non associated | Rural dwelling<br>Level 2 | 3,020<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -1 blade tips. | | |
| R093<br>Non associated | Rural dwelling<br>Level 2 | 3,818<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -3 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R098<br>Non associated | Rural dwelling<br>Level 2 | 2,627<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and 0 blade tips. | | |
| R099<br>Non associated | Rural dwelling<br>Level 2 | 3,196<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and +3 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R100<br>Non associated | Rural dwelling<br>Level 2 | 2,844<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +1 blade tips. | | |
| R101<br>Non associated | Rural dwelling<br>Level 2 | 2,204<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -2 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R109<br>Non associated | Rural dwelling<br>Level 2 | 3,382<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +3 blade tips. | | |
| R110<br>Non associated | Rural dwelling<br>Level 2 | 3,146<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +3 hubs and +8 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R111<br>Non associated | Rural dwelling<br>Level 2 | 2,318<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -2 blade tips. | | |
| R112<br>Non associated | Rural dwelling<br>Level 2 | 2,484<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -1 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R114<br>Non associated | Rural dwelling<br>Level 2 | 2,678<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +1 blade tips. | | |
| R115<br>Non associated | Rural dwelling<br>Level 2 | 3,551<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and -2 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R116<br>Non associated | Rural dwelling<br>Level 2 | 3,103<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +4 blade tips. | | |
| R117<br>Non associated | Rural dwelling (probable shed)<br>Level 2 | 3,459<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -7 hubs and +2 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R118<br>Non associated | Rural dwelling<br>Level 2 | 3,653<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and +2 blade tips. | | |
| R119<br>Non associated | Rural dwelling<br>Level 2 | 3,165<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and 0 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R120<br>Non associated | Rural dwelling<br>Level 2 | 3,327<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +8 blade tips. | | |
| R121<br>Non associated | Rural dwelling<br>Level 2 | 3,903<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and +2 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R124<br>Non associated | Rural dwelling<br>Level 2 | 3,152<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -6 hubs and -11 blade tips. | | |
| R125<br>Non associated | Rural dwelling<br>Level 2 | 3,088<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some scattered tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and -12 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R126<br>Non associated | Rural dwelling<br>Level 2 | 3,289<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +6 hubs and +1 blade tips. | | assessment of visual effects. |
| R127<br>Non associated | Rural dwelling<br>Level 2 | 3,525<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -7 hubs and -11 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R130<br>Non associated | Rural dwelling<br>Level 2 | 3,139<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -8 hubs and -10 blade tips. | | |
| R137<br>Non associated | Rural dwelling<br>Level 2 | 3,605<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and -3 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R138<br>Non associated | Rural dwelling<br>Level 2 | 3,731<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and -1 blade tips. | | |
| R141<br>Non associated | Rural dwelling<br>Level 2 | 3,797<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and 0 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R151<br>Non associated | Rural dwelling<br>Level 2 | 3,060<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +4 hubs and +8 blade tips. | | |
| R153<br>Non associated | Rural dwelling<br>Level 2 | 2,994<br>Near middleground | VIZ2 | The magnitude of visual change would be limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +11 blade tips. | Low (nil) | Unchanged from consented RPWF assessment of visual effects. |
| R155<br>Non associated | Rural dwelling<br>Level 2 | 3,607<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +4 blade tips. | | |
| R156<br>Non associated | Rural dwelling<br>Level 2 | 3,575<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and 0 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R170<br>Non associated | Rural dwelling<br>Level 2 | 2,231<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +5 blade tips. | | |
| R177<br>Non associated | Residential RU5<br>Level 1 | 3,831<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and scattered tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -2 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R179<br>Non associated | Residential RU5<br>Level 1 | 3,837<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and 0 blade tips. | | |
| R180<br>Non associated | Residential RU5<br>Level 1 | 3,860<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and -2 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R186<br>Non associated | Residential RU5<br>Level 1 | 3,718<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and -2 blade tips. | | |
| R187<br>Non associated | Residential RU5<br>Level 1 | 3,807<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -4 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R188<br>Non associated | Residential RU5<br>Level 1 | 3,574<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and scattered tree planting between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and -4 blade tips. | | |
| R190<br>Non associated | Residential RU5<br>Level 1 | 3,881<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -9 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R191<br>Non associated | Residential RU5<br>Level 1 | 3,809<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -6 blade tips. | | |
| R193<br>Non associated | Residential RU5<br>Level 1 | 3,818<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +2 hubs and -2 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R194<br>Non associated | Residential RU5<br>Level 1 | 3,867<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -4 blade tips. | | |
| R197<br>Non associated | Residential RU5<br>Level 1 | 3,892<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree planting between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and -5 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R198<br>Non associated | Residential RU5<br>Level 1 | 3,773<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -4 blade tips. | | |
| R199<br>Non associated | Residential RU5<br>Level 1 | 3,719<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +3 hubs and -3 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R200<br>Non associated | Residential RU5<br>Level 1 | 3,815<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -3 blade tips. | | |
| R202<br>Non associated | Rural dwelling<br>Level 2 | 3,143<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -1 blade tips. | Low | Unchanged from consented RPWF assessment of visual effects. |
| R204<br>Non associated | Rural dwelling<br>Level 2 | 2,899<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +2 blade tips. | | |
| R226<br>Non associated | Residential RU5<br>Level 1 | 3,950<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -2 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R230<br>Non associated | Residential RU5<br>Level 1 | 3,563<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -2 blade tips. | | |
| R243<br>Non associated | Rural dwelling<br>Level 2 | 3,880<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +3 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R262<br>Non associated | Rural dwelling<br>Level 2 | 3,689<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -1 blade tips. | | |
| R266<br>Non associated | Rural dwelling<br>Level 2 | 3,084<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and +5 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R267<br>Non associated | Rural dwelling<br>Level 2 | 2,965<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and +5 blade tips. | | |
| R268<br>Non associated | Rural dwelling<br>Level 2 | 2,854<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +2 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R269<br>Non associated | Rural dwelling<br>Level 2 | 3,546<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +3 hubs and 0 blade tips. | | |
| R270<br>Non associated | Rural dwelling<br>Level 2 | 3,509<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and +3 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R272<br>Non associated | Residential RU5<br>Level 1 | 3,909<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and scattered tree cover between the dwelling and closest consented RPWF wind turbine. There would be a | Moderate low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -5 hubs and -3 blade tips. | | |
| R274<br>Non associated | Residential RU5<br>Level 1 | 3,892<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and some scattered tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -5 hubs and -1 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R276<br>Non associated | Residential<br>Level 2 | 3,786<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate low | Unchanged from consented RPWF |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -5 blade tips. | | assessment of visual effects. |
| R282<br>Non associated | Rural dwelling<br>Level 2 | 3,880<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +4 hubs and 0 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R286<br>Non associated | Rural dwelling<br>Level 2 | 2,512<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -9 hubs and -7 blade tips. | | |
| R288<br>Non associated | Rural dwelling<br>Level 2 | 3,632<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -1 hubs and -1 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R289<br>Non associated | Rural dwelling<br>Level 2 | 3,453<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the | Moderate | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -4 hubs and -10 blade tips. | | |
| R294<br>Non associated | Rural dwelling<br>Level 2 | 2,626<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include 0 hubs and -1 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R295<br>Non associated | Rural dwelling<br>Level 2 | 3,379<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +1 hubs and +3 blade tips. | | |
| R298<br>Non associated | Rural dwelling<br>Level 2 | 3,210<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and 0 blade tips. | Moderate low | Unchanged from consented RPWF assessment of visual effects. |
| R309<br>Non associated | Rural dwelling<br>Level 2 | 3,983<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited | Low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include +4 hubs and +5 blade tips. | | |
| R310<br>Non associated | Residential RU5<br>Level 1 | 3,869<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance and tree cover between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -9 blade tips. | Moderate | Unchanged from consented RPWF assessment of visual effects. |
| R325<br>Non associated | Residential RU5<br>Level 1 | 3,849<br>Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and | Moderate<br>low | Unchanged from consented RPWF assessment of visual effects. |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | proposed Mod 1 wind turbines. The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -3 hubs and -3 blade tips. | | |
| R329 | Rural dwelling Level 2 | 2,694 Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines.<br>The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and -10 blade tips. | Dwelling constructed post LVIA preparation | Moderate |
| R330 | Rural dwelling Level 2 | 2,261 Near middleground | VIZ2 | The magnitude of visual change would be partially limited by distance between the dwelling and closest consented RPWF wind turbine. There would be a limited change in the composition or contrast between the consented RPWF and proposed Mod 1 wind turbines. | Dwelling constructed post LVIA preparation | Moderate |

**Table 5** – Proposed Mod 1 wind turbine visual effects

| Receiver location (refer Figures 1 and 2) | Category of receiver location and viewer sensitivity level[1] | Approximate consented distance to proposed Mod 1 wind turbine (m) and Distance Zone[2] | Visual Influence Zone[3] | Magnitude of visual change - proposed Mod 1 (80-turbine layout and 200 m tip height) compared to consented turbine (92-turbine layout and 157 m tip height) | RPWF LVIA 2016 Visual Impact Rating[4] | Proposed Mod 1 wind turbine visual effect |
|---|---|---|---|---|---|---|
| | | | | The delta between the consented RPWF wind turbines and the proposed Mod 1 wind turbines would include -2 hubs and -10 blade tips. | | |

[1] Category of receiver location and viewer sensitivity level with regard to the NSW New South Wales State Government Wind Energy: Visual Assessment Bulletin December 2016

[2] Distance zones with regard to the NSW New South Wales State Government Wind Energy: Visual Assessment Bulletin December 2016

[3] Visual Influence Zones with regard to the NSW New South Wales State Government Wind Energy: Visual Assessment Bulletin December 2016

[4]RPWF Visual Rating as determined by GBD (RPWF LVIA 2016)

## 8.4 Summary

The overall assessment of the magnitude of visual change for the non-associated residential dwellings within 4km of the proposed Mod 1 wind turbines has determined that the majority of residential dwellings would not be subject to a change of visual effect as a result of the proposed Mod 1 wind turbine delta. In most cases this would be due to the distance over which the wind turbines are viewed, as well as existing tree planting, and broader areas of tree cover, to screen or filter views toward some portions of the wind farm site.

The delta between the consented RPWF and proposed Mod 1 wind turbines, whilst noticeable from proximate view locations, would not result in any significant increased degree of visibility above that of the consented RPWF wind turbines.

A total of 2 residential dwellings were determined to have a reduced level of visual effect due to the Proponents removal of wind turbines from the consented RPWF wind turbine layout.

This VIA has determined that 19 residential dwellings within the Rye Park village RU5 Zone, which are located within 4km of the proposed Mod 1 wind turbines, would not be subject to an increased level of visual effect.

No change to the level of visual effect would result from the distance between the residential dwellings as well as screening provided by scattered tree cover and built structures within the village.

Other residential dwellings within the Rye Park village RU5 Zone, located beyond 4km of the proposed Mod 1 wind turbines are also considered not subject to an increased level of visual effect due to distance between residential dwellings and the proposed Mod 1 wind turbines.

GBD note that DPIE's independent expert assessed the residential dwellings within the Rye Park village RU5 Zone during their assessment of the original Development Application. The DPIE's independent expert determined that residential dwellings with the Rye Park village RU5 Zone had a combination of Moderate low to Moderate visual impact ratings. Therefore DPIE's independent expert confirmed that none of the residential dwelling were determined to have Moderate High or High visual impact ratings.

# 9 Wire frame diagrams

## 9.1 Introduction

The wire frame diagram locations have been modelled to illustrate views from residential dwelling locations toward the consented RPWF wind turbines, including residential dwelling locations assessed with a Moderate or greater visual effect in the original RPWF LVIA 2016. The wire frame locations have also been selected as representative viewpoints where residential dwellings within 4km of the proposed Mod 1 wind turbines present a similar field of view and distances toward wind turbines that are comparable with other residential dwellings. The Mod 1 VIA residential dwelling wire frames are outlined in **Table 6**. The wire frame diagram locations correspond with the residential dwelling locations illustrated on **Figures 1** and **2**.

**Table 6** – Wire frame diagram details

| Figure number | Wire frame number | Residential dwelling reference | Status |
|---|---|---|---|
| Figure 13 | Wire frame 1 | R011 | Non-associated |
| Figure 14 | Wire frame 2 | R018 | Non-associated |
| Figure 15 | Wire frame 3 | R038 | Non-associated |
| Figure 16 | Wire frame 4 | R074 | Non-associated |
| Figure 17 | Wire frame 5 | R081 | Non-associated |
| Figure 18 | Wire frame 6 | R088 | Non-associated |
| Figure 19 | Wire frame 7 | R091 | Non-associated |
| Figure 20 | Wire frame 8 | R099 | Non-associated |
| Figure 21 | Wire frame 9 | R110 | Non-associated |
| Figure 22 | Wire frame 10 | R112 | Non-associated |
| Figure 23 | Wire frame 11 | R115 | Non-associated |
| Figure 24 | Wire frame 12 | R116 | Non-associated |
| Figure 25 | Wire frame 13 | R119 | Non-associated |
| Figure 26 | Wire frame 14 | R121 | Non-associated |
| Figure 27 | Wire frame 15 | R125 | Non-associated |
| Figure 28 | Wire frame 16 | R126 | Non-associated |
| Figure 29 | Wire frame 17 | R137 | Non-associated |

**Table 6** – Wire frame diagram details

| Figure number | Wire frame number | Residential dwelling reference | Status |
|---|---|---|---|
| Figure 30 | Wire frame 18 | R180 | Non-associated |
| Figure 31 | Wire frame 19<br>Rye Park Village representative view | R182 | Non-associated |
| Figure 32 | Wire frame 20<br>Rye Park Village representative view | R186 | Non-associated |
| Figure 33 | Wire frame 21 | R202 | Non-associated |
| Figure 34 | Wire frame 22<br>Rye Park Village representative view | R234 | Non-associated |
| Figure 35 | Wire frame 23 | R266 | Non-associated |
| Figure 36 | Wire frame 24 | R271 | Non-associated |
| Figure 37 | Wire frame 25 | R286 | Non-associated |
| Figure 38 | Wire frame 26 | R298 | Non-associated |

The wire frame diagrams illustrate views toward the consented RPWF and the proposed Mod 1 amendment. The wire frame diagrams illustrate the wind turbines with and without individual identification numbers for clarity.

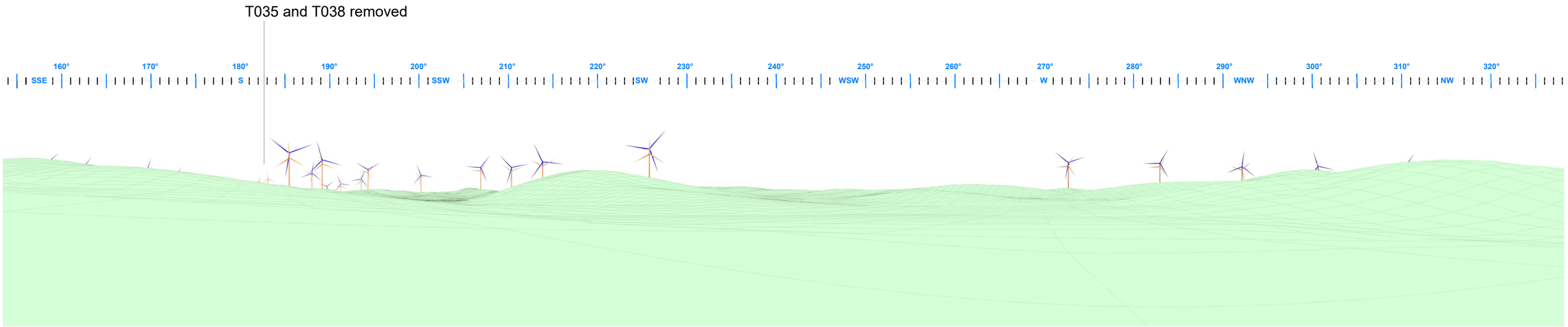
The wire frame diagrams do not include, or illustrate, the location of tree cover, or built structures between the wire frame viewpoints and the consented RPWF and Mod 1 wind turbines. The wire frame diagrams are therefore considered to be very conservative in both the extent of view and visibility of wind turbines indicated in each wire frame diagram.

## 9.2 Wire frame diagram preparation

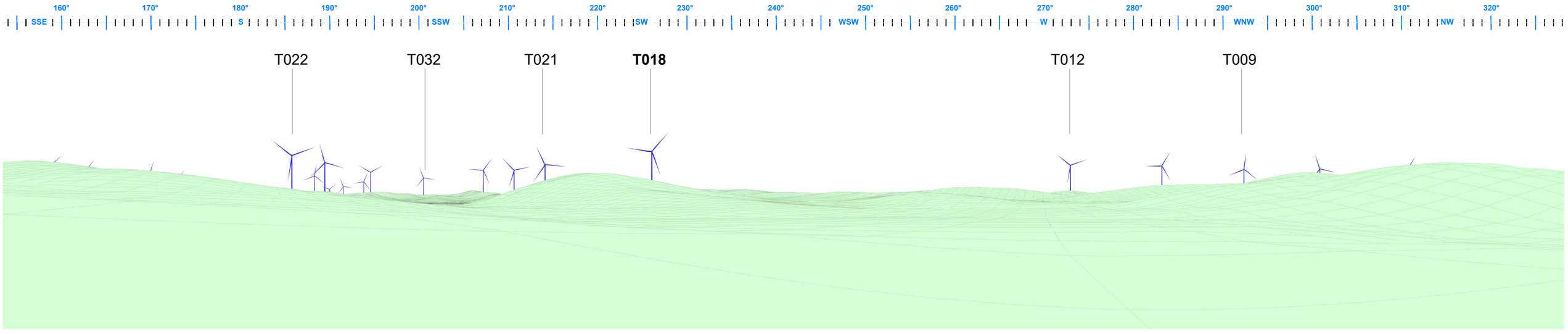
The wire frames have been prepared with regard to the general guidelines set out in the Scottish Natural Heritage (2017) Visual representation of wind farms: good practice guidance. The wire frame diagrams were generated through the following steps:

- a digital terrain model (DTM) of the project site was created from a terrain model of the surrounding area using 10m digital contours

- the site DTM was loaded in the DNV-GL 'WindPro' software package
- the layout of the wind farm and 3D representation of the wind turbine was configured in 'WindPro'
- the location of each viewpoint was configured in 'WindPro'
- the final image was converted to JPG format and imported and annotated as the final figure.




Wire frame from residential dwelling R011 looking south to north west : Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T018) 1,623 metres**




Wire frame from residential dwelling R011 looking south to north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -1, change in blade tips 0

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 13 -
Wire frame 1 from residential dwelling R011

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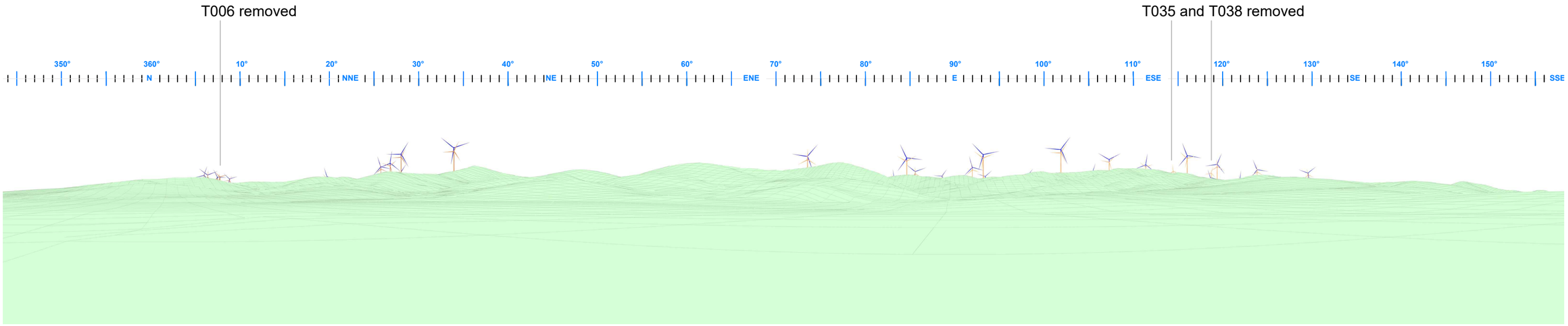
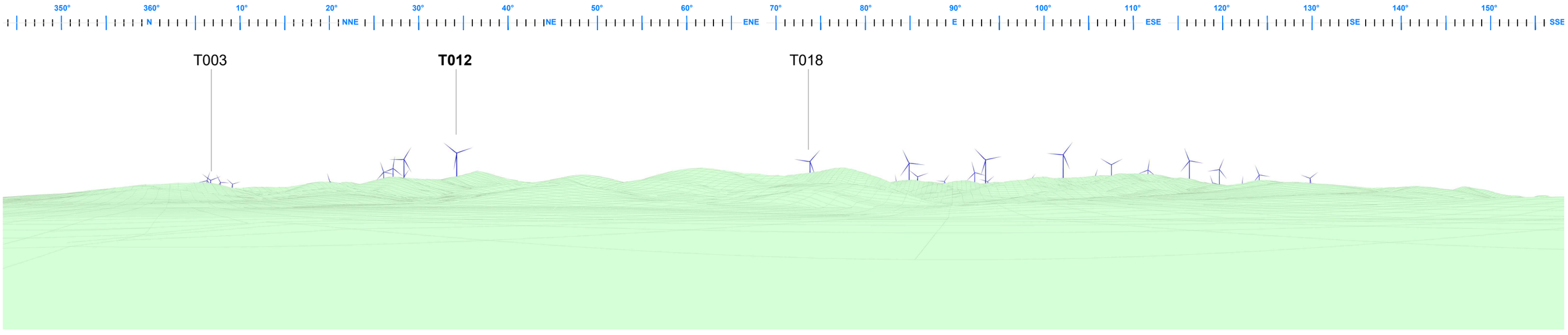
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R018 looking north to south east : Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T012) 2,393 metres**




Wire frame from residential dwelling R018 looking north to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +2, change in blade tip visibility +4

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 14 -
Wire frame 2 from residential dwelling R018

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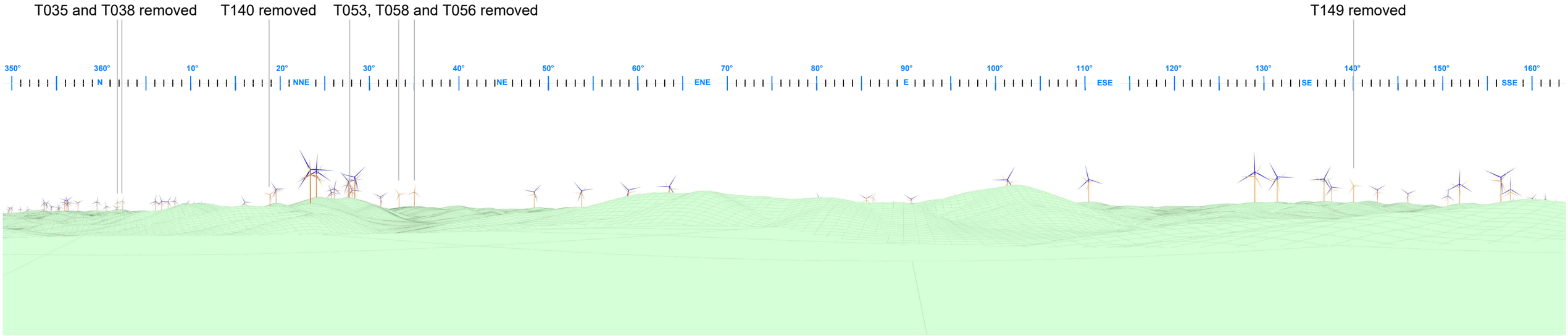
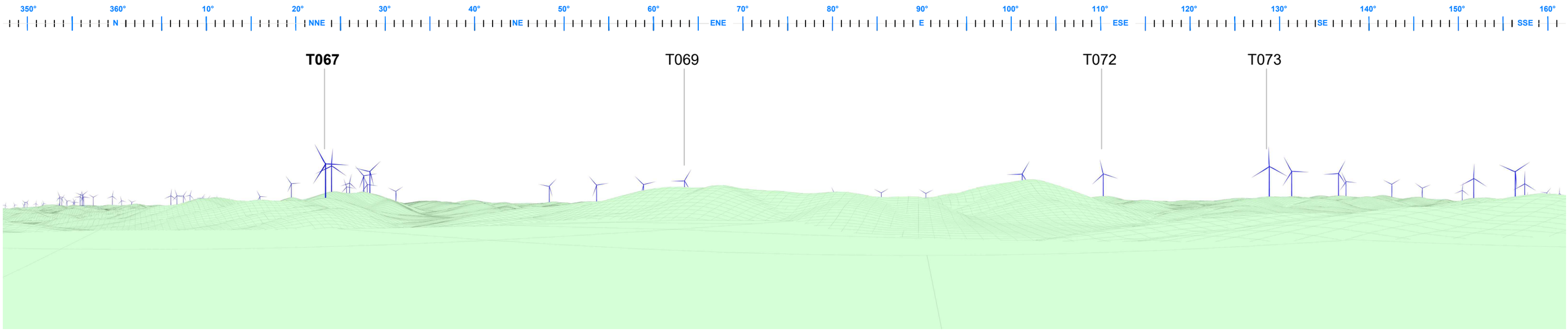
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R038 looking north to south : Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T067) 1,735 metres**




Wire frame from residential dwelling R038 looking north to south: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -6, change in blade tip visibility -7

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 15 -
Wire frame 3 from residential dwelling R038

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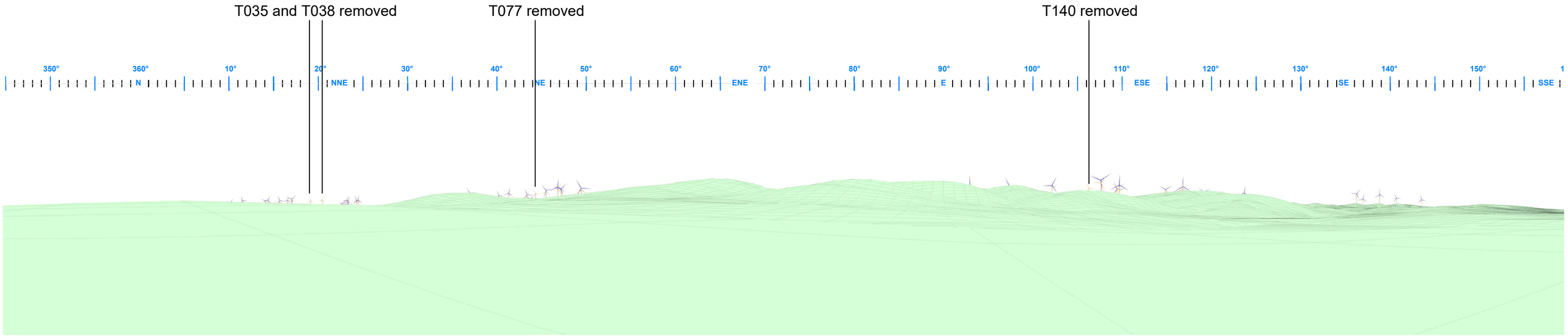
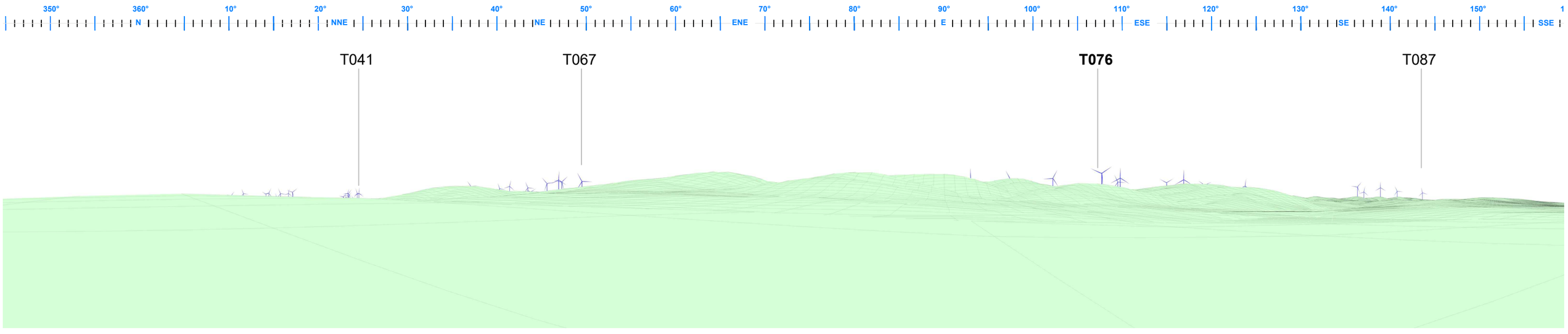
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R074 looking north north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T076) 3,360 metres**




Wire frame from residential dwelling R074 looking north north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +2, change in blade tip visibility +1

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 16 -
Wire frame 4 from residential dwelling R074

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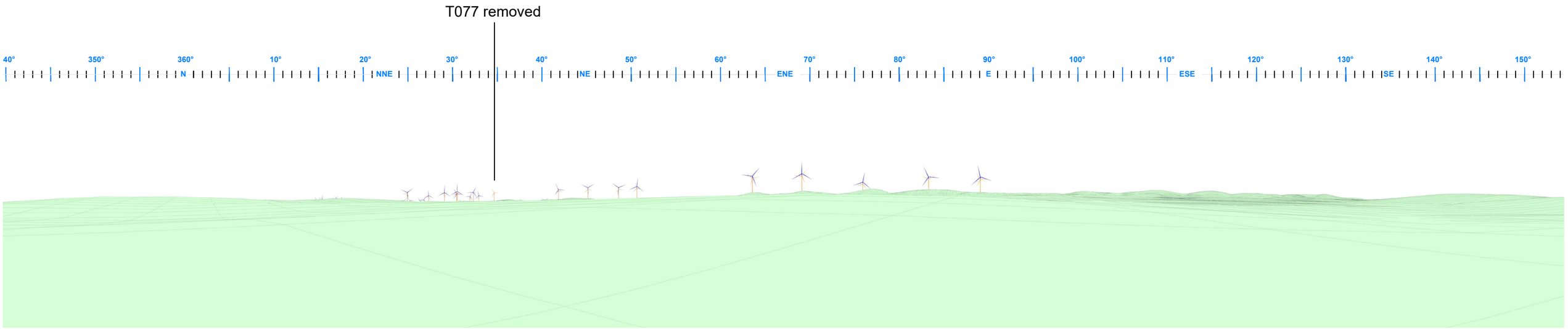
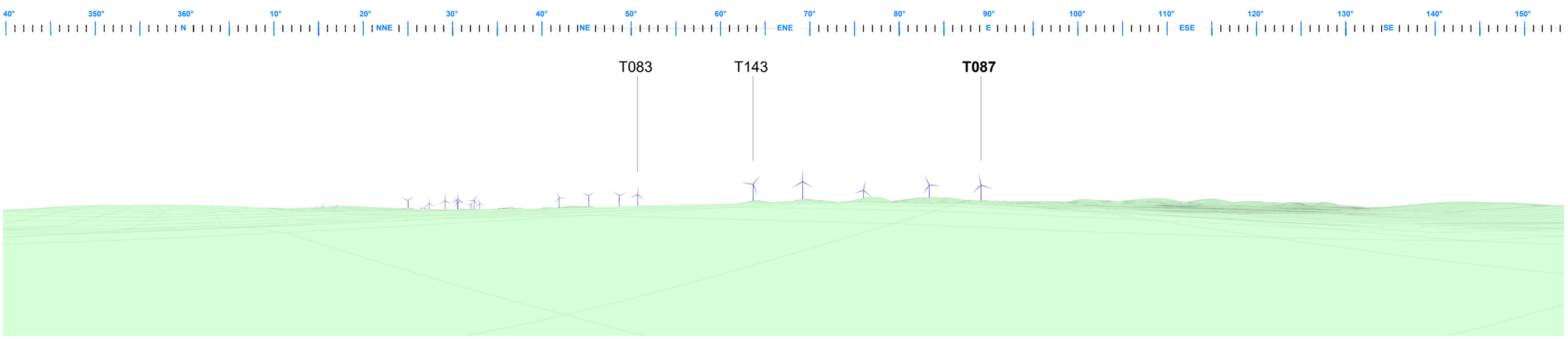
# Rye Park Wind Farm Modification 1

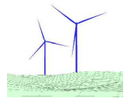



Wire frame from residential dwelling R081 looking north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T087) 3,320 metres**




Wire frame from residential dwelling R081 looking north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +2, change in blade tip visibility +4

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 17 -
Wire frame 8 from residential dwelling R081

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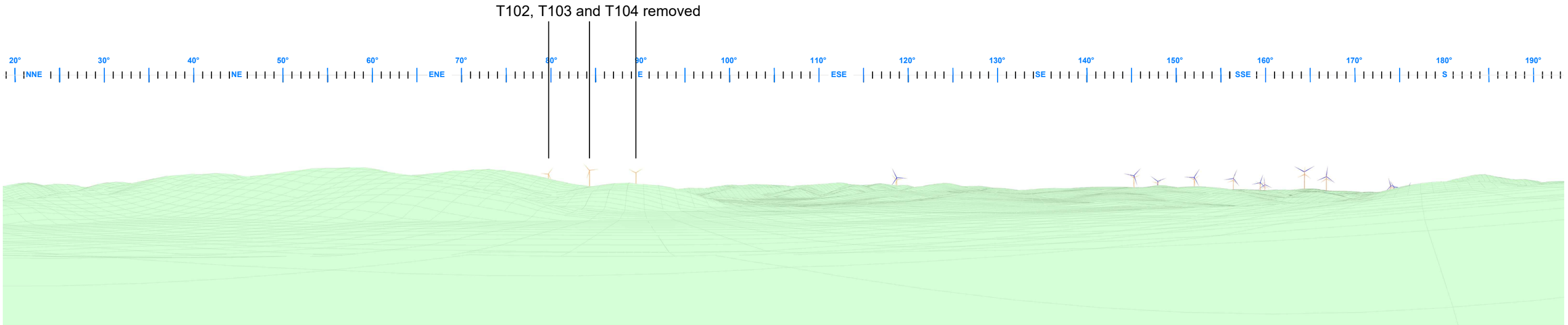
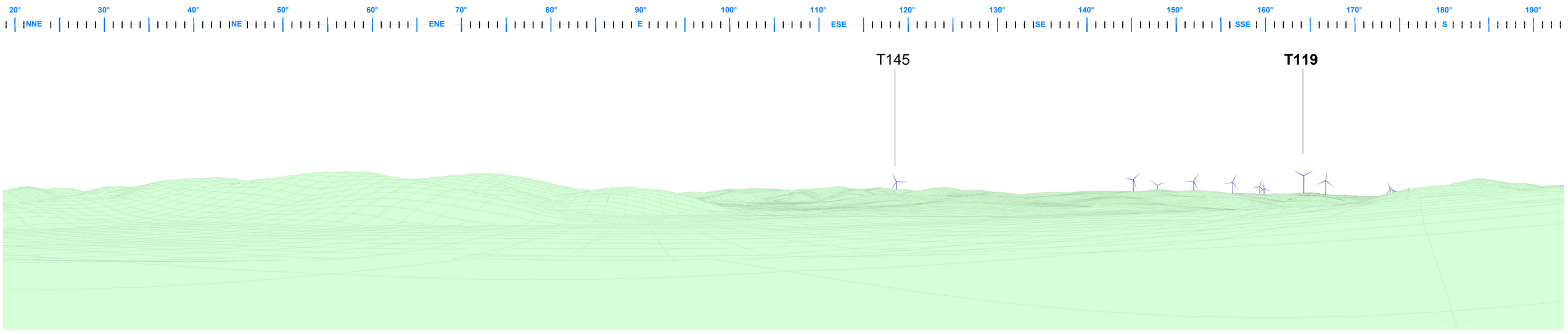
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R088 looking east south east to south: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T119) 3,437 metres**




Wire frame from residential dwelling R088 looking east south east to south: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -1, change in blade tip visibility +4

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 18 -
Wire frame 6 from residential dwelling R088

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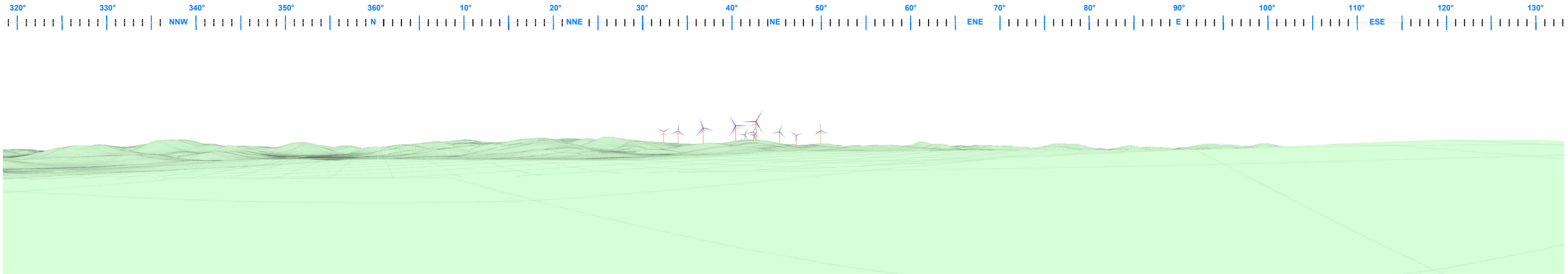
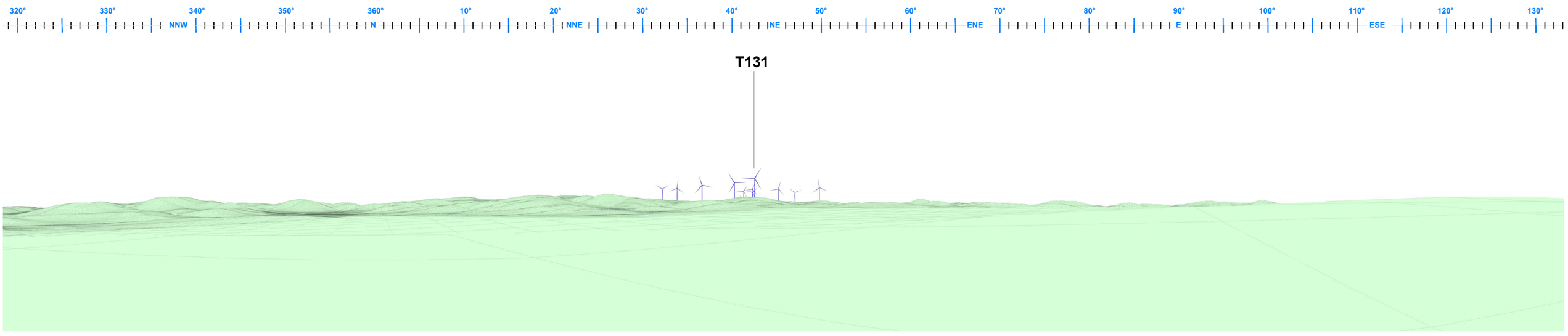
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R091 looking north east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T131) 3,075 metres**




**T131**

Wire frame from residential dwelling R091 looking north east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility 0, change in blade tip visibility -3

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 19 -
Wire frame 7 from residential dwelling R091

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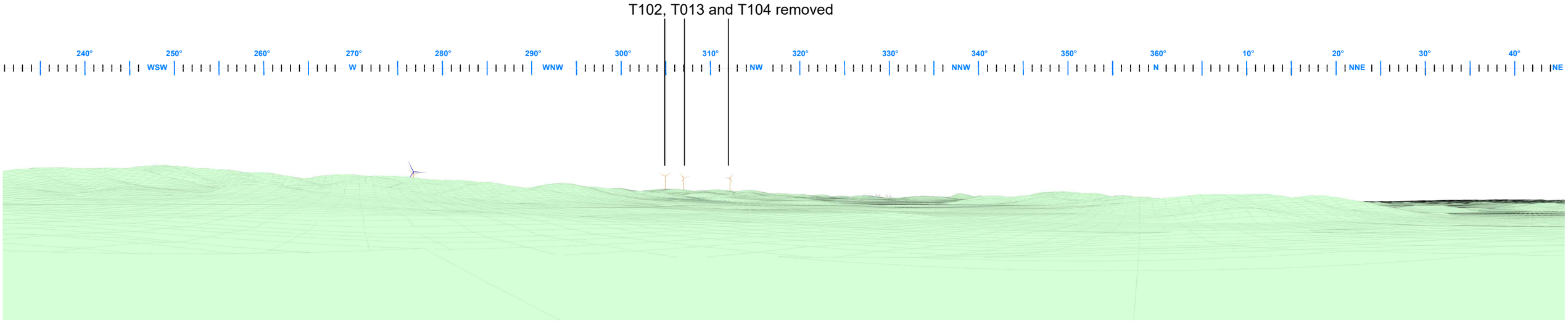
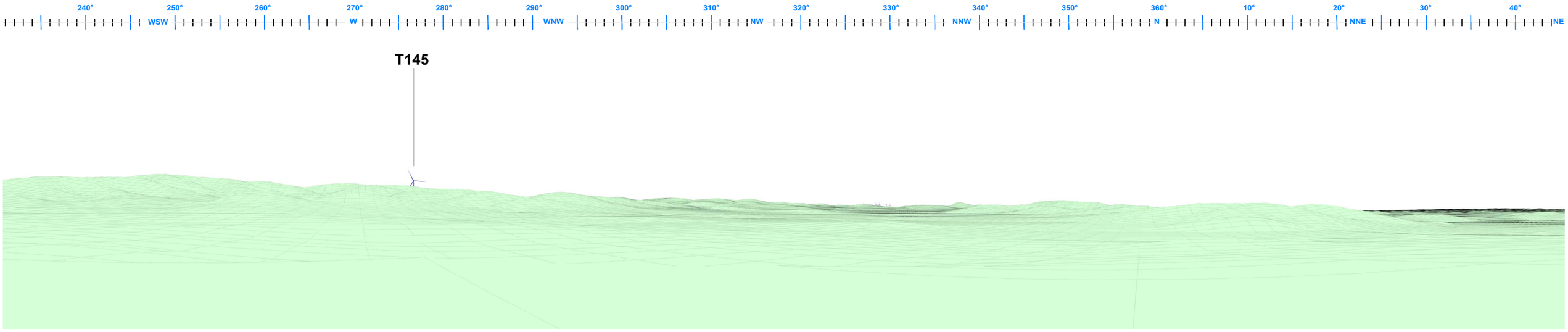
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R099 looking west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T145) 3,196 metres**




Wire frame from residential dwelling R099 looking west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -2, change in blade tip visibility 3

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 20 -
Wire frame 8 from residential dwelling R099

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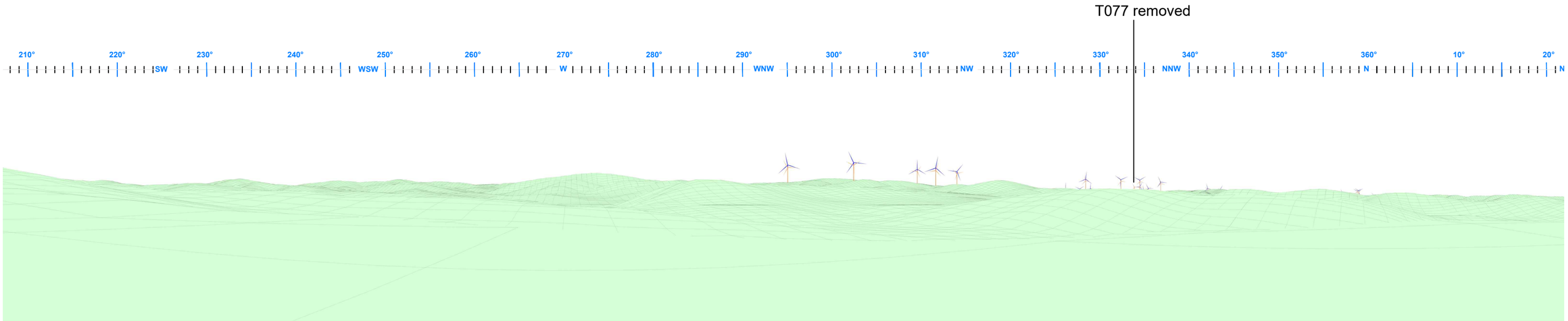
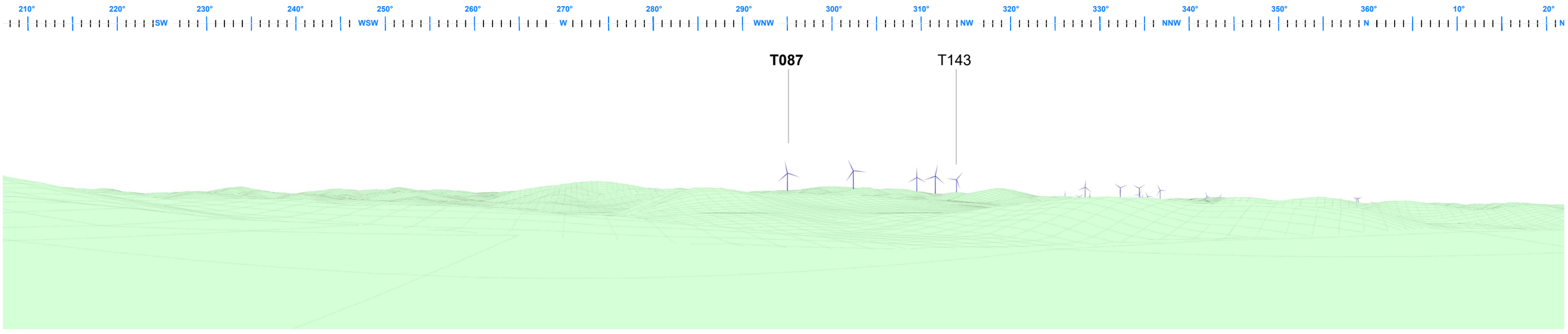
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R110 looking west north west to north north west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T087) 3,146 metres**




Wire frame from residential dwelling R110 looking west north west to north north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +3, change in blade tip visibility +8

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 21 -
Wire frame 9 from residential dwelling R110

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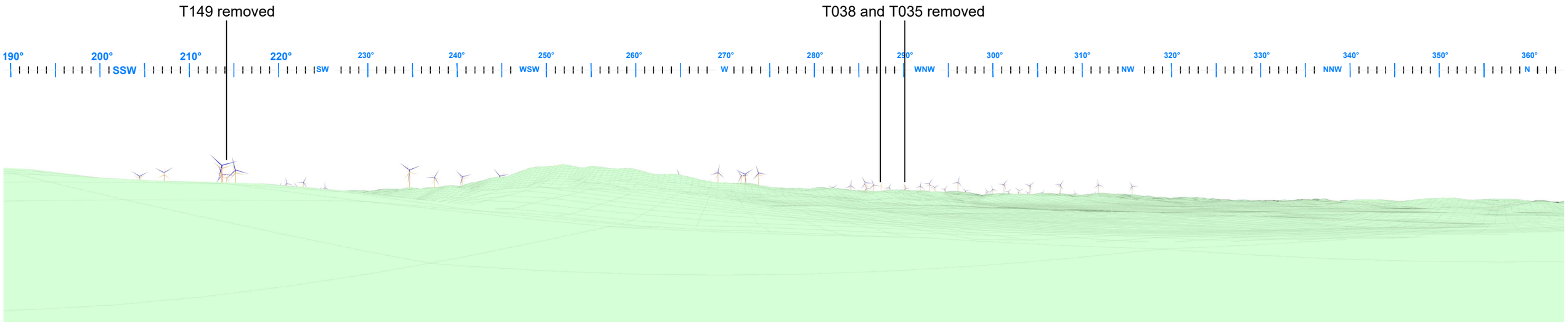
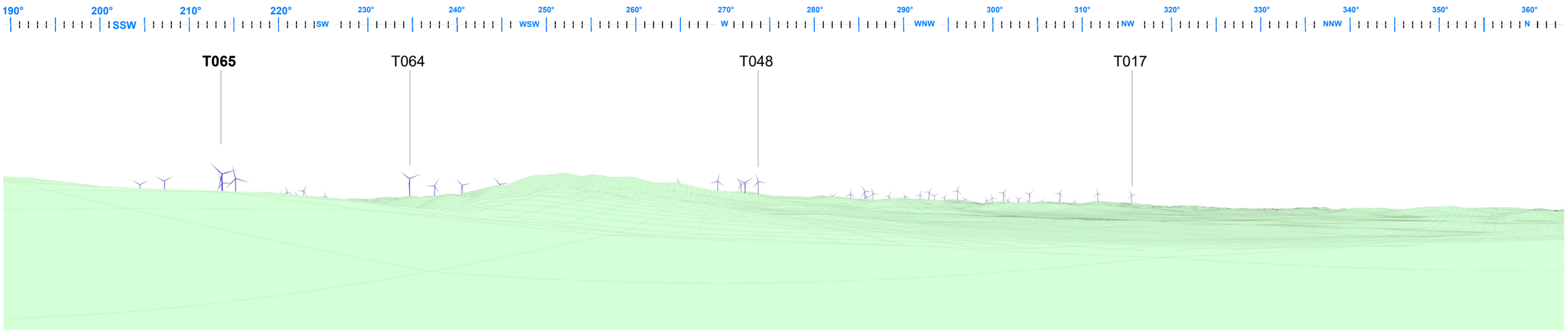
# Rye Park Wind Farm Modification 1

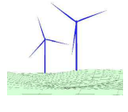



Wire frame from residential dwelling R112 looking south south west to north west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T065) 2,484 metres**




Wire frame from residential dwelling R112 looking south south west to north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility 0, change in blade tip visibility -1

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 22 -
Wire frame 10 from residential dwelling R112

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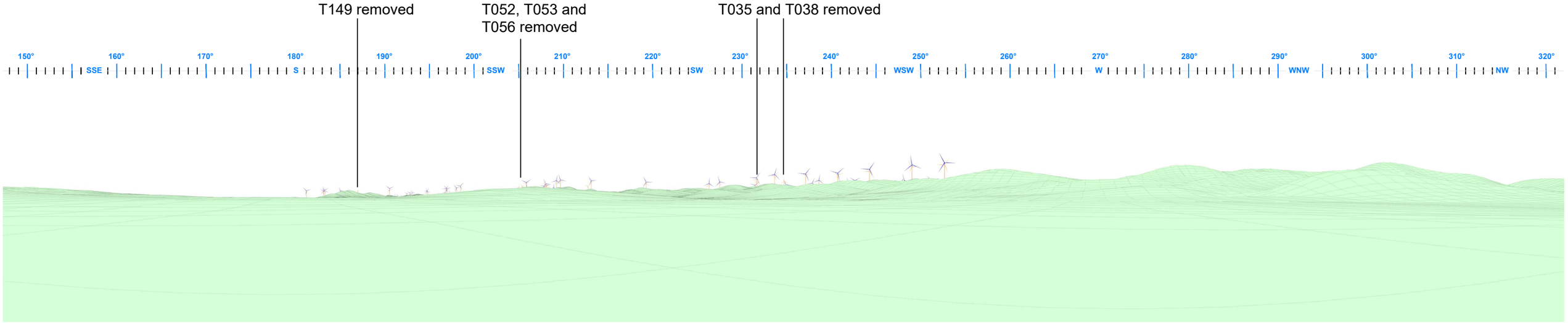
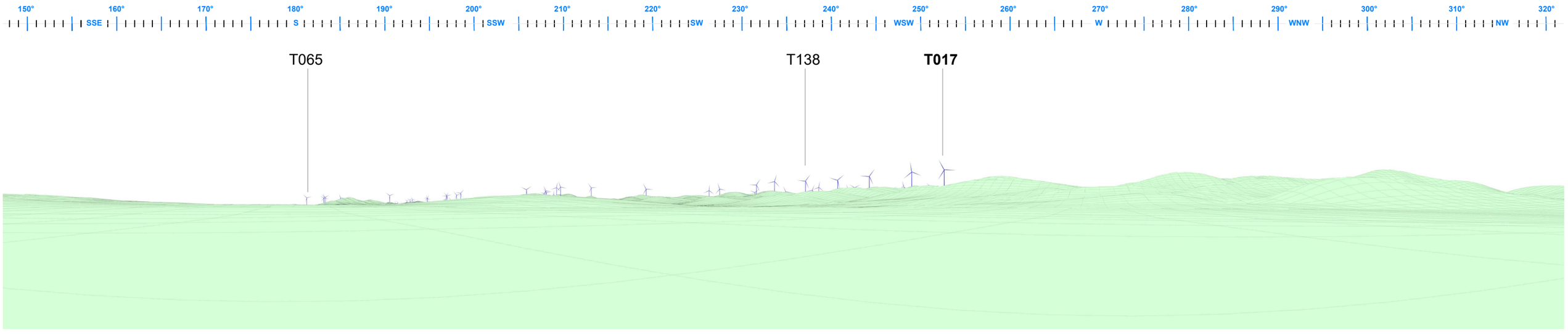
# Rye Park Wind Farm Modification 1

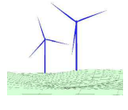



Wire frame from residential dwelling R115 looking south to south west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T017) 3,551 metres**




Wire frame from residential dwelling R115 looking south to south west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +1, change in blade tip visibility -2

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 23 -
Wire frame 11 from residential dwelling R115

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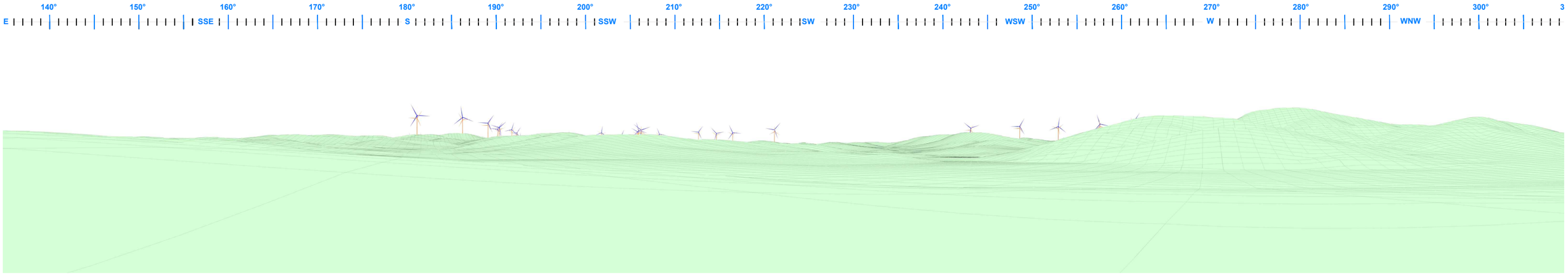
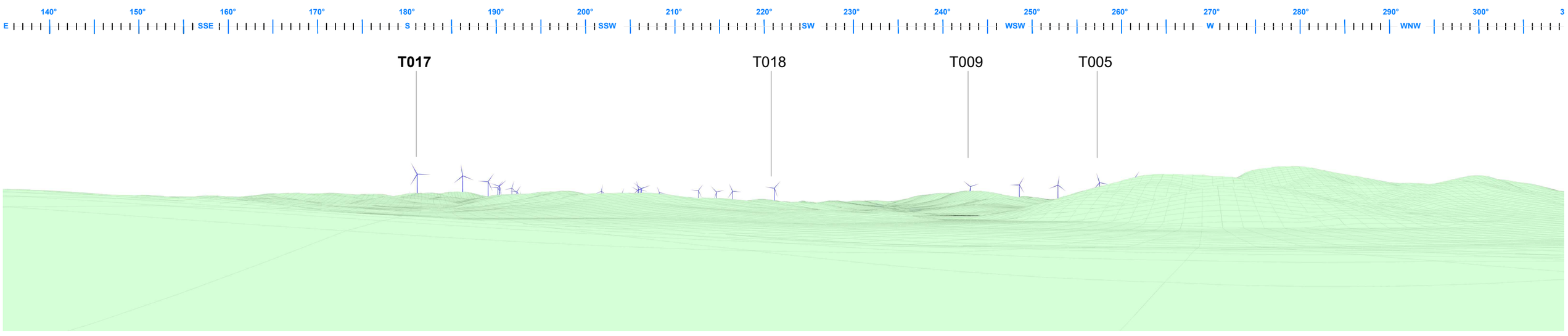
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R116 looking south to west south west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T017) 3,103 metres**




Wire frame from residential dwelling R116 looking south to west south west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +1, change in blade tip visibility +4

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 24 -
Wire frame 12 from residential dwelling R116

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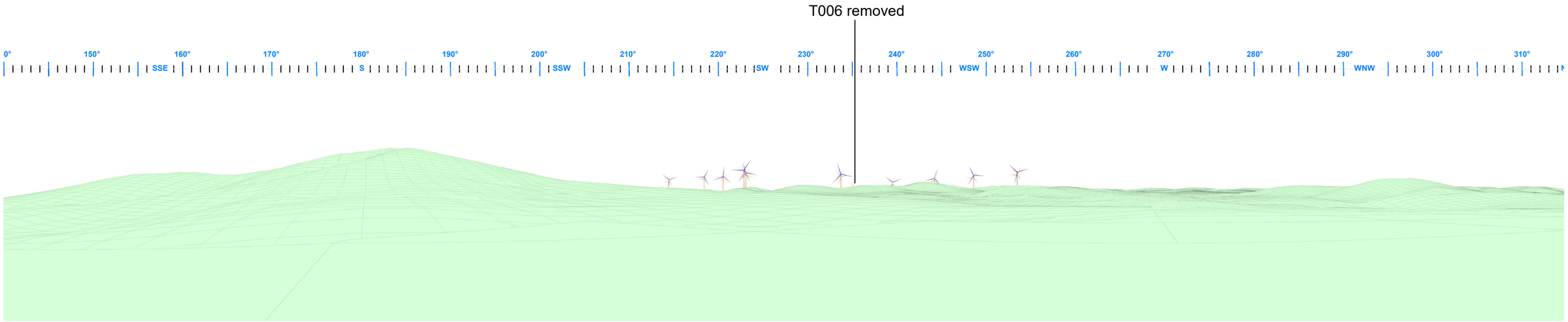
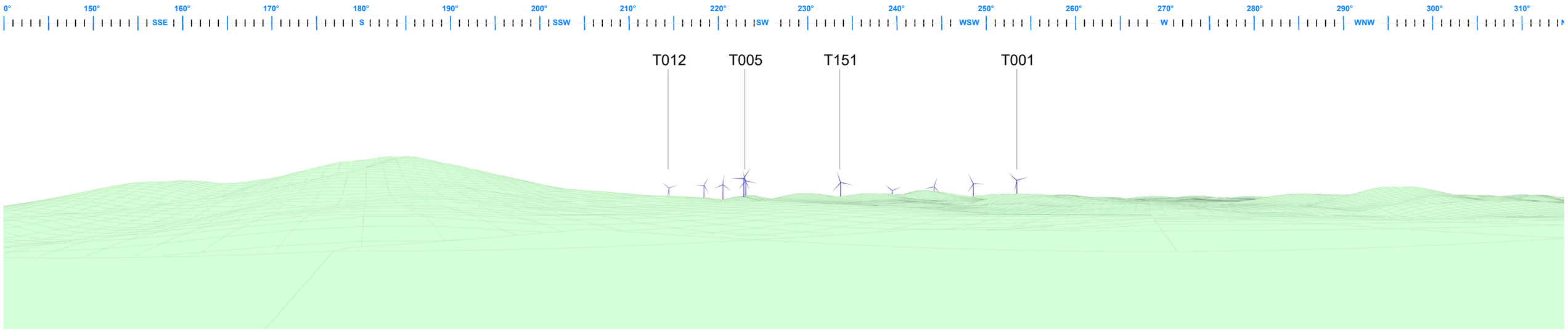
# Rye Park Wind Farm Modification 1




Wireframe from residential dwelling R119 looking south west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T005) 3,165 metres**




Wireframe from residential dwelling R119 looking south west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility 0, change in blade tip visibility 0

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 25 -
Wire frame 13 from residential dwelling R119

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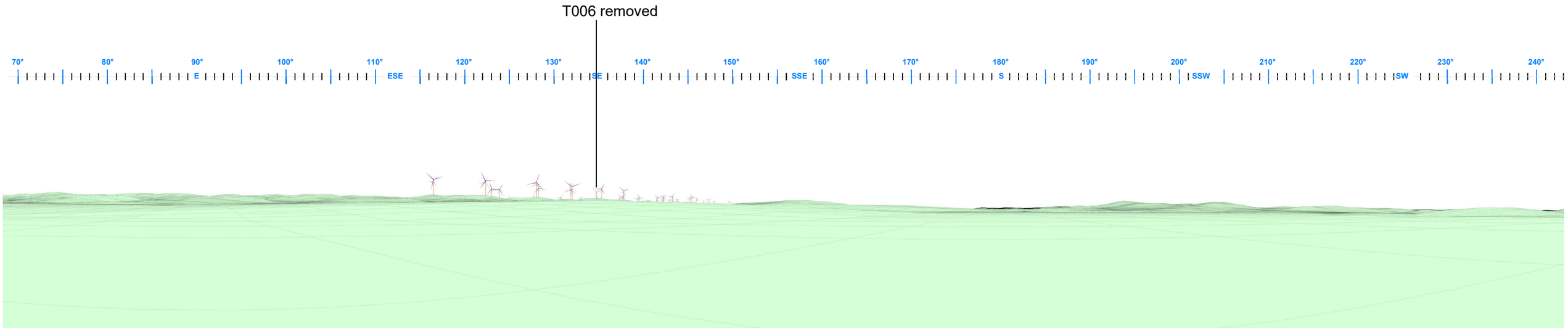
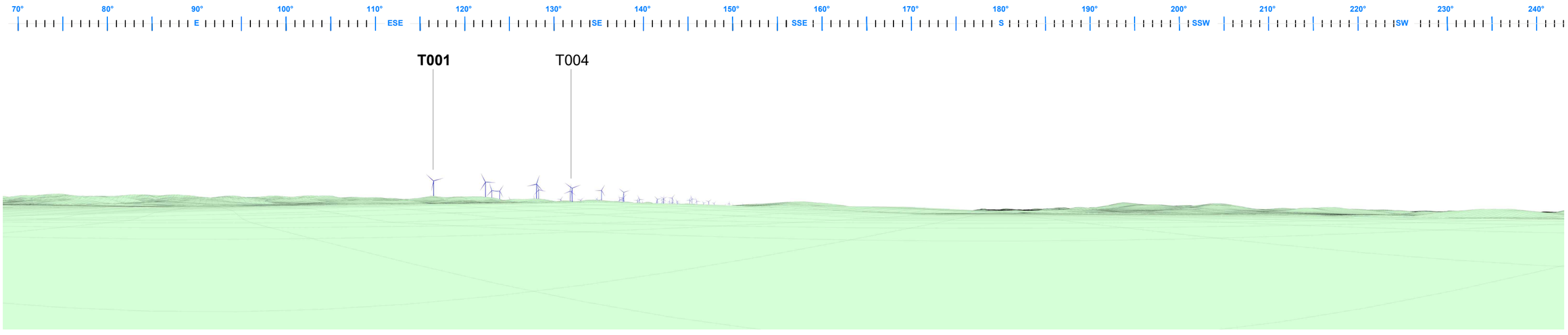
# Rye Park Wind Farm Modification 1

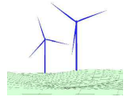



Wireframe from residential dwelling R121 looking south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T001) 3,903 metres**




Wireframe from residential dwelling R121 looking south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -2, change in blade tip visibility +2

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 26 -
Wire frame 14 from residential dwelling R121

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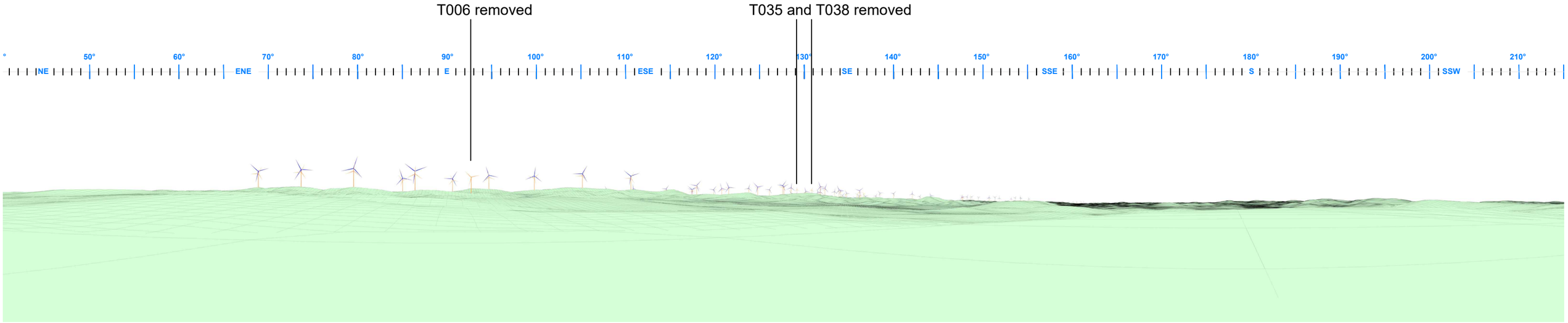
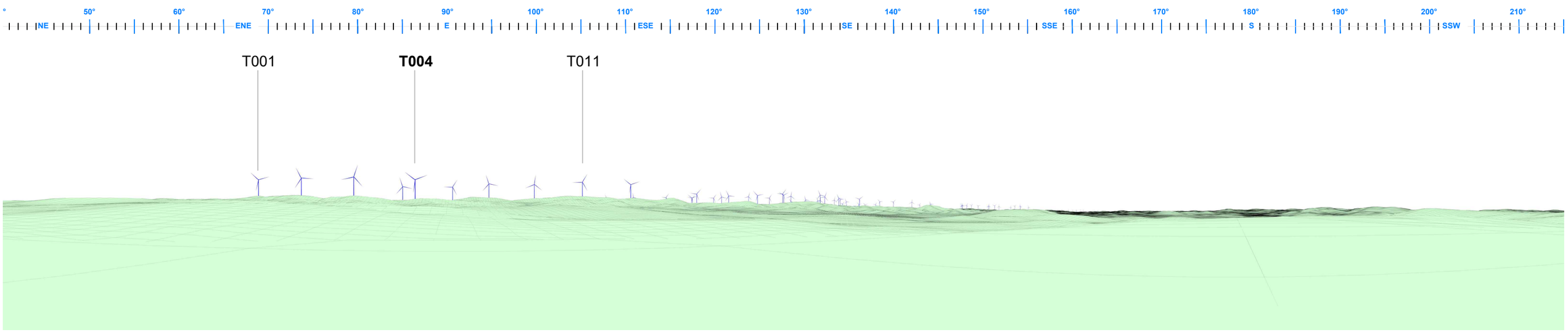
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R125 looking east north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T004) 3,088 metres**




Wire frame from residential dwelling R125 looking east north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -4, change in blade tip visibility -12

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 27 -
Wire frame 15 from residential dwelling R125

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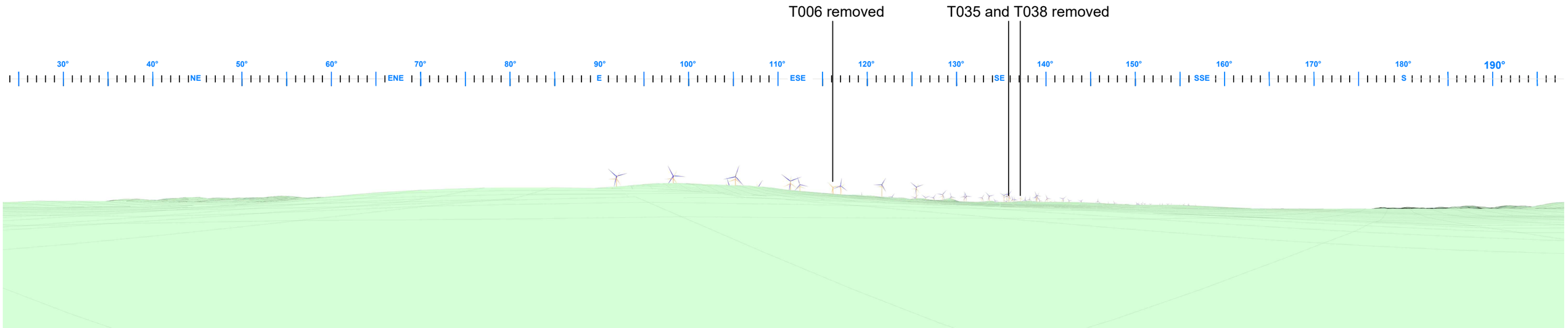
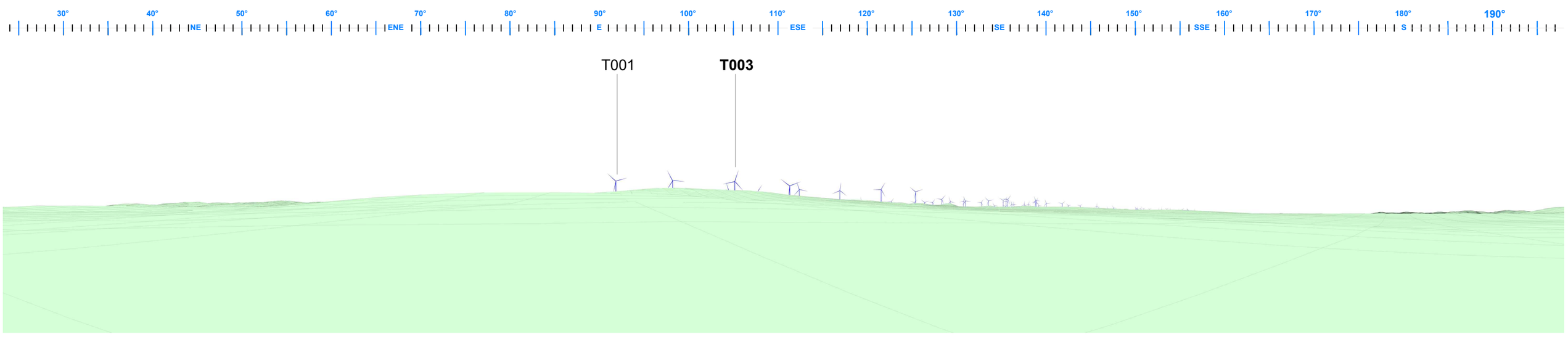
# Rye Park Wind Farm Modification 1




Wireframe from residential dwelling R126 looking east north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T003) 3,289 metres**




Wireframe from residential dwelling R126 looking east north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +6, change in blade tip visibility +1

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 28 -
Wire frame 16 from residential dwelling R126

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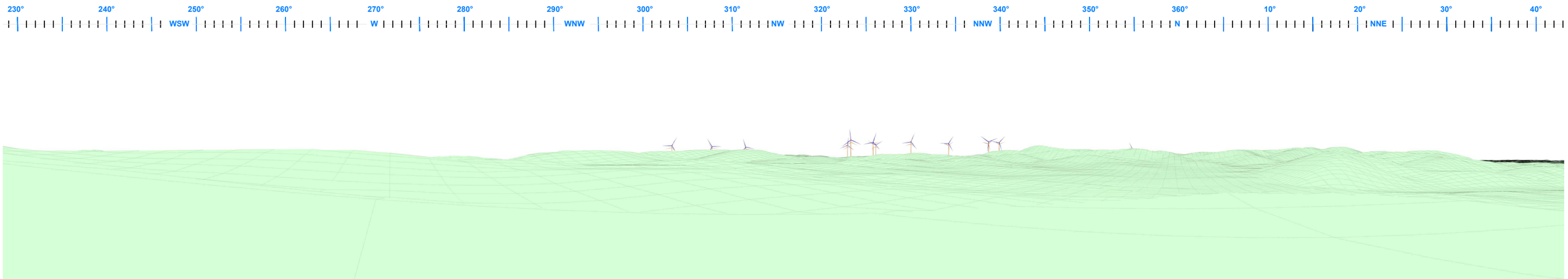
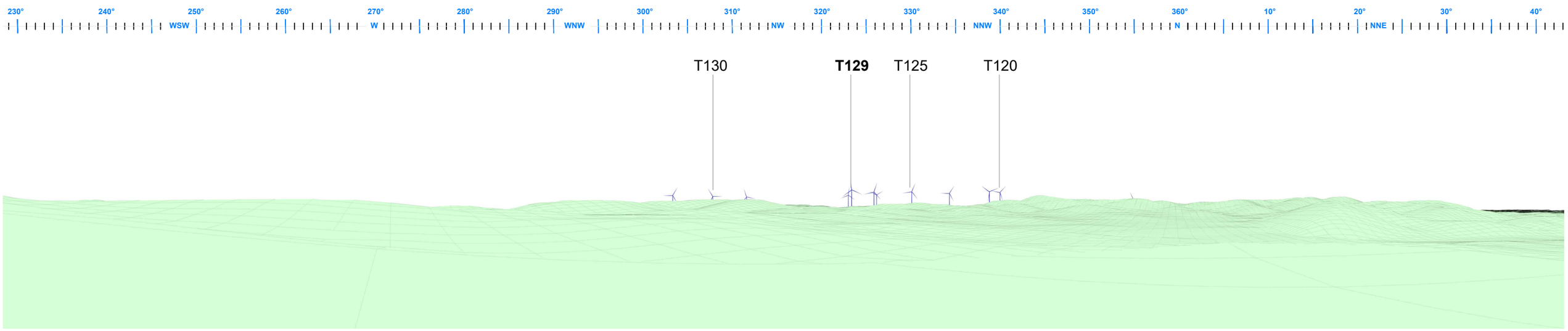
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R137 looking north west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T129) 3,605 metres**




Wire frame from residential dwelling R137 looking north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility +1, change in blade tip visibility -3

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 29 -
Wire frame 17 from residential dwelling R137

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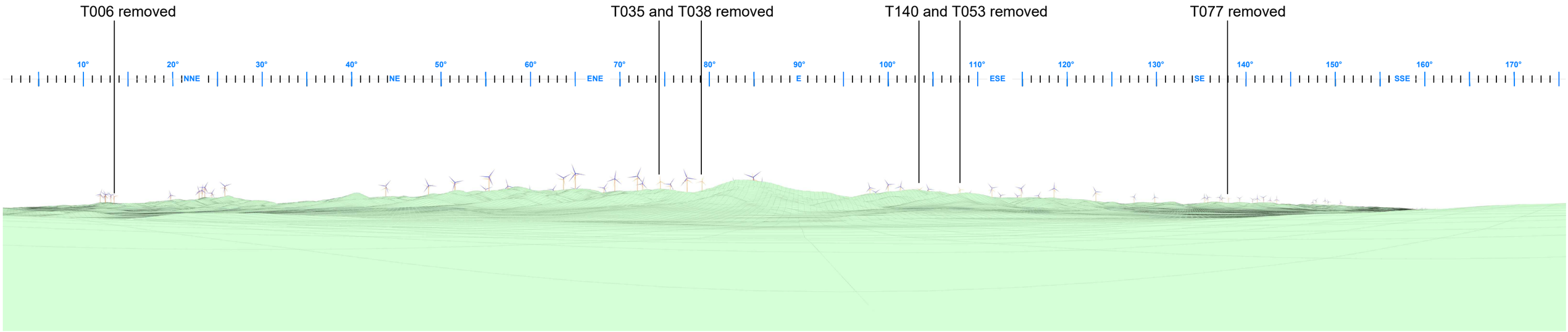
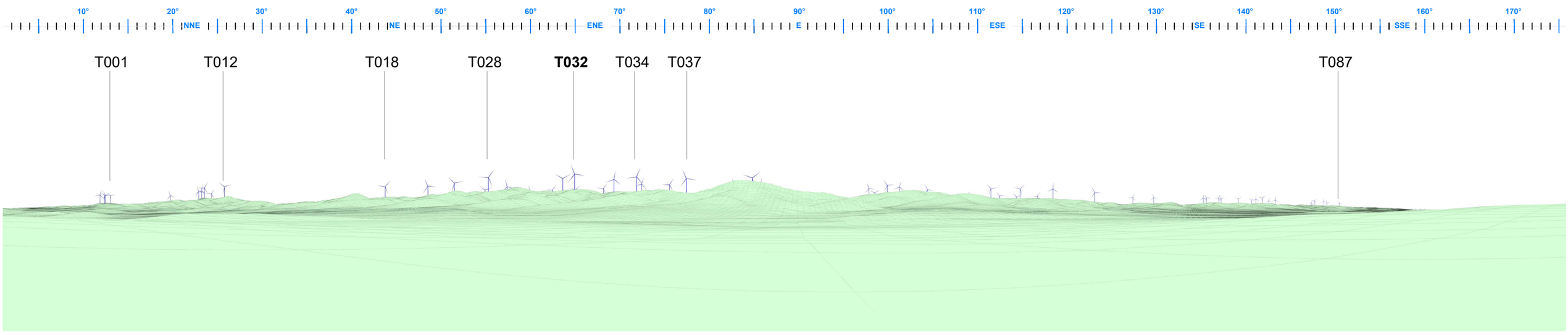
# Rye Park Wind Farm Modification 1




Wireframe from residential dwelling R180 looking north north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T032) 3,860 metres**




Wire frame from residential dwelling R180 looking north north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -4, change in blade tip visibility -2

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 30 -
Wire frame 18 from residential dwelling R180

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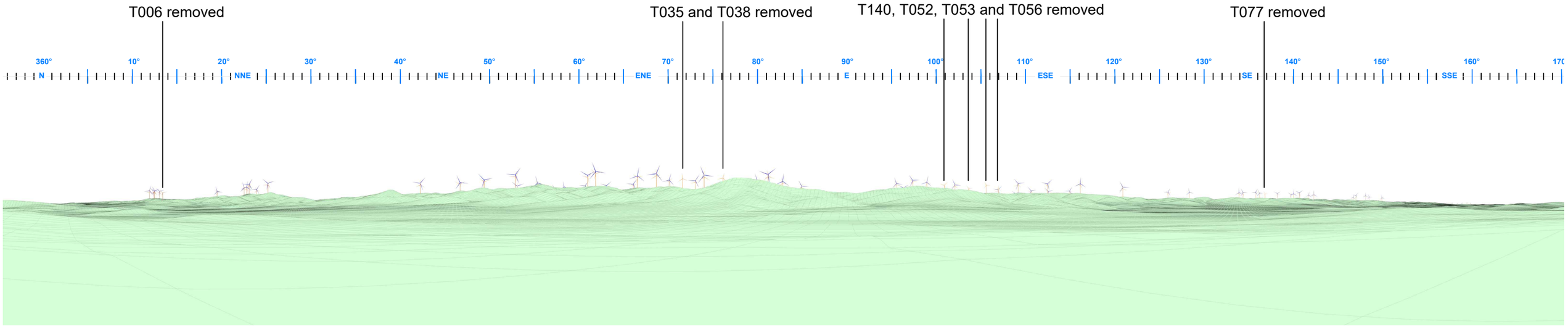
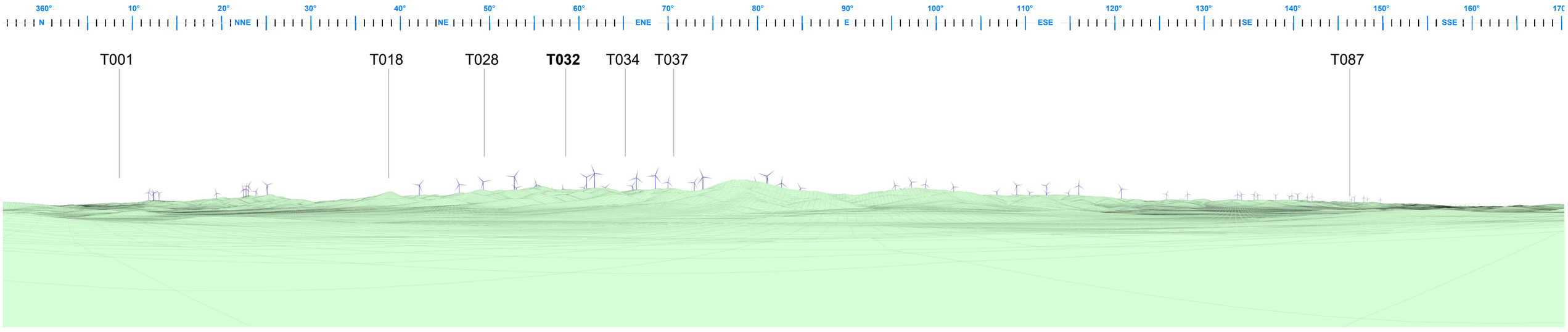
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R182 (Rye Park RU5) opposite Rye Park Memorial Hall looking north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T032) 4,033 metres** (provided as representative view from Rye Park village and not included in Table 4 or Table 5)




Wireframe from residential dwelling R182 (Rye Park RU5) looking north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 31 -
Wire frame 19 from residential dwelling R182 (Rye Park RU5)

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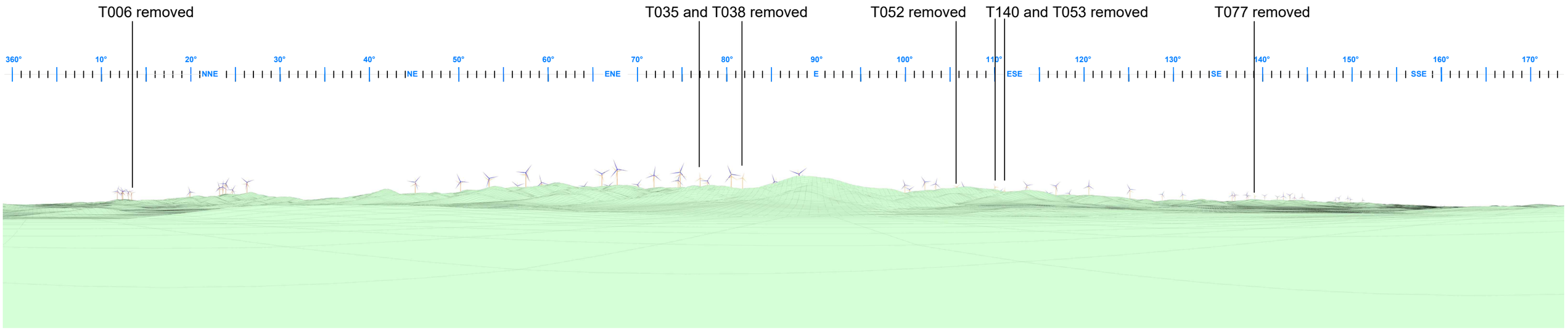
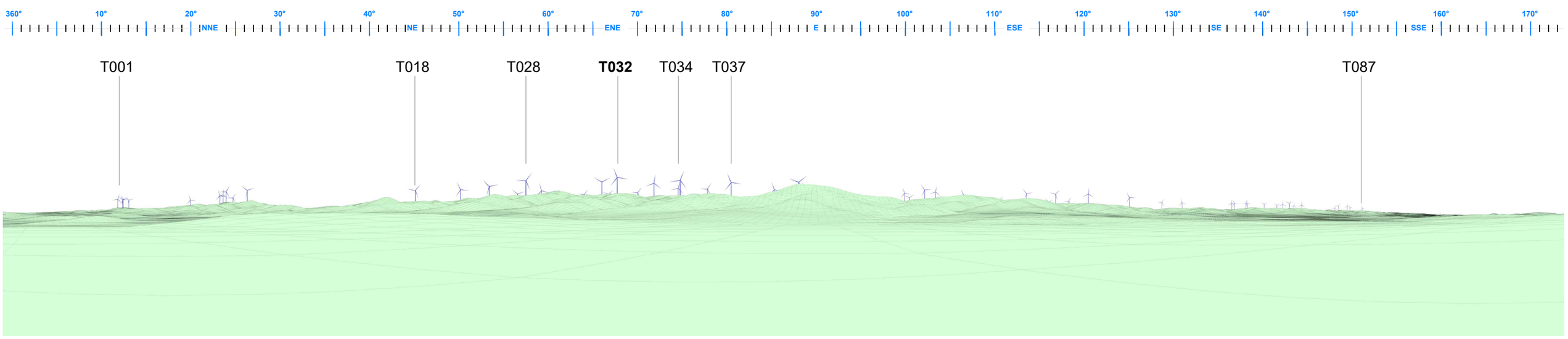
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R186 (Rye Park RU5) looking north east to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T032) 3,718 metres**




Wire frame from residential dwelling R186 (Rye Park RU5) looking north east to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change 9n hub visibility +1, change in blade tip visibility -2

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

# Rye Park Wind Farm Modification 1

Figure 32 -
Wire frame 20 from residential dwelling R186 (Rye Park RU5)

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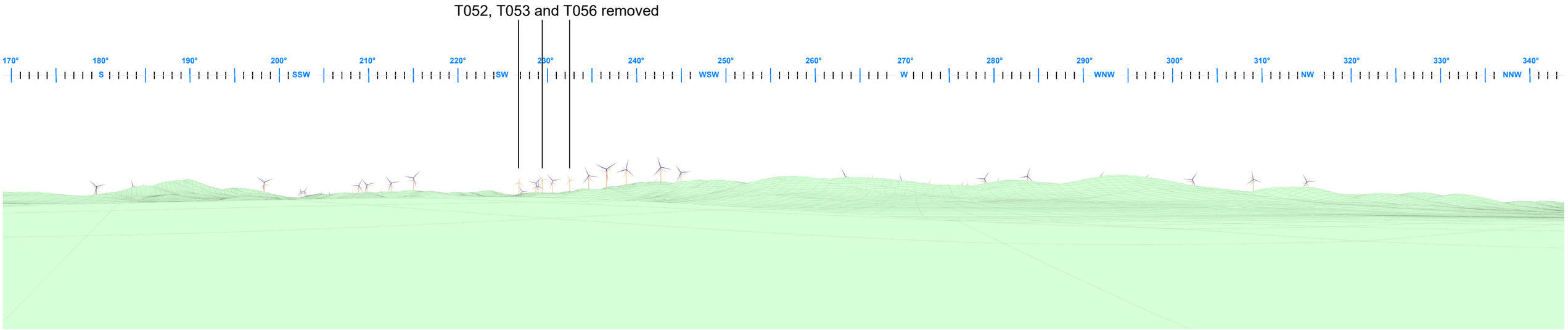
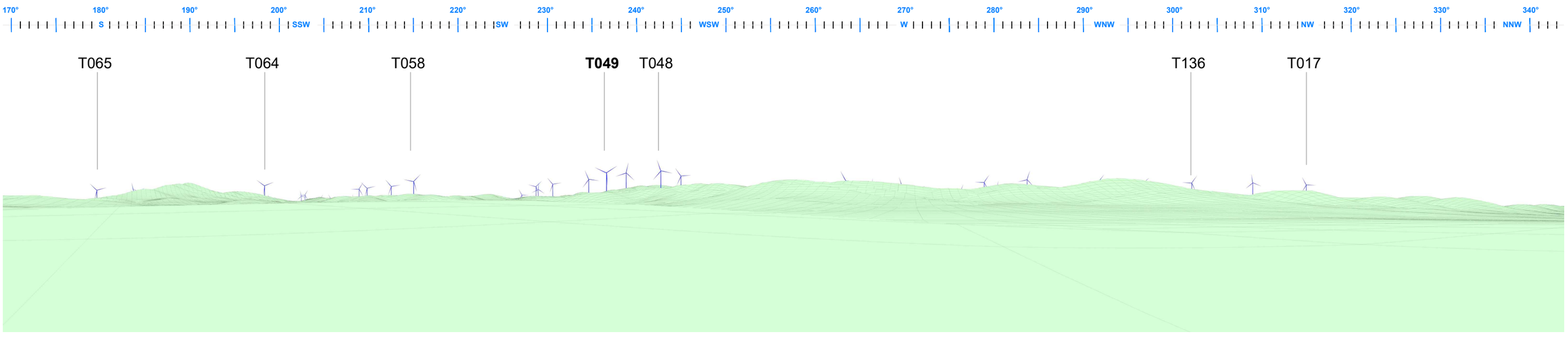
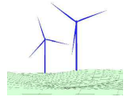



Wire frame from residential dwelling R202 looking south to north west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T049) 3,143 metres**




Wire frame from residential dwelling R202 looking south to north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -3, change in blade tip visibility -1

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 33 -
Wire frame 21 from residential dwelling R202

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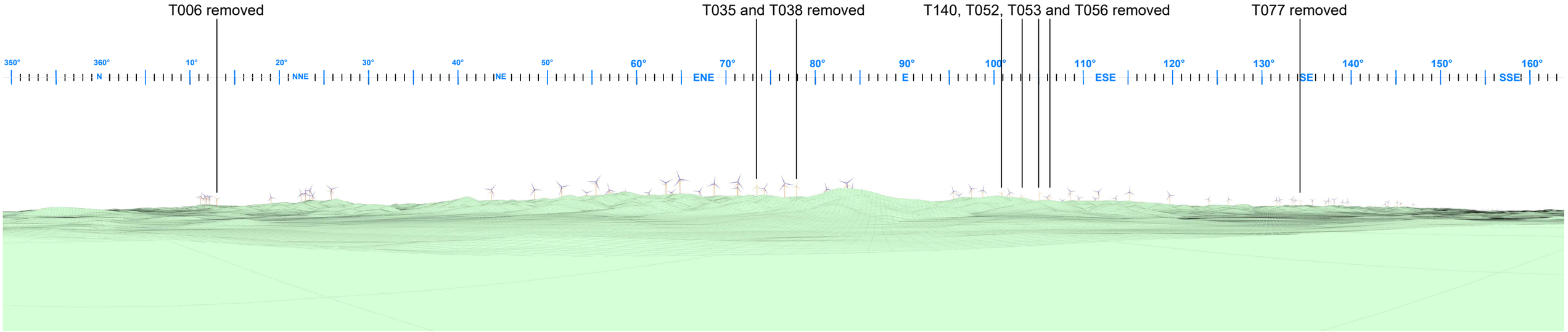
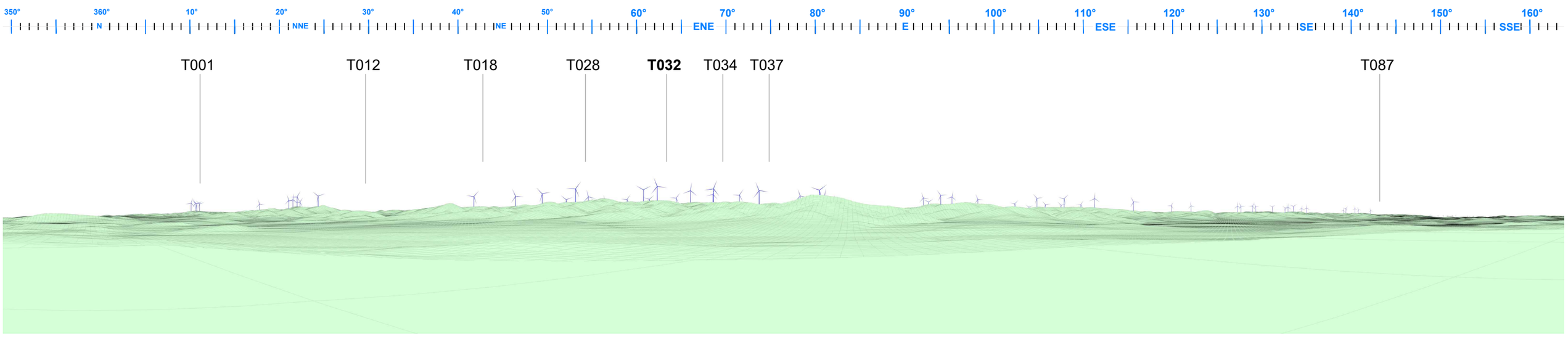
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R234 (Rye Park RU5) west of Kershaw Street looking north to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T032) 4,071 metres** (provided as representative view from Rye Park village and not included in Table 4 or Table 5)




Wire frame from residential dwelling R234 looking north to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 34 -
Wire frame 22 from residential dwelling R234 (Rye Park RU5)

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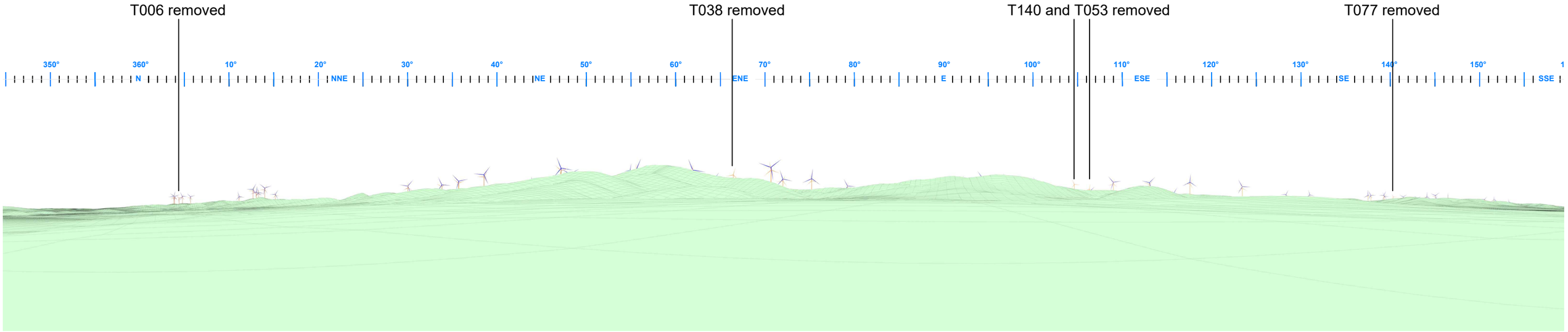
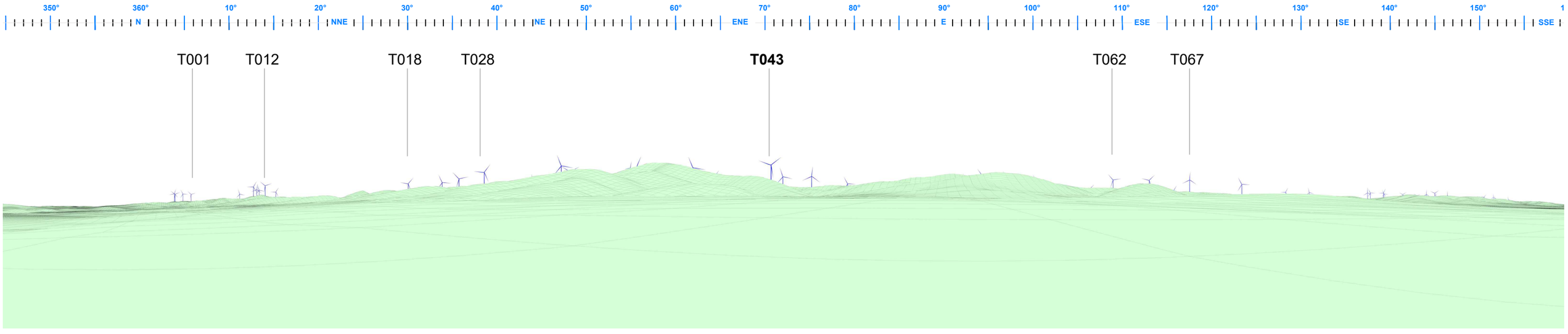
# Rye Park Wind Farm Modification 1

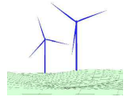



Wire frame from residential dwelling R266 looking north to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T043) 3,084 metres**




Wire frame from residential dwelling R266 looking north to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -1, change in blade tip visibility +5

Consented RPWF wind turbine at 157m tip height



Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 35 -
Wire frame 23 from residential dwelling R266

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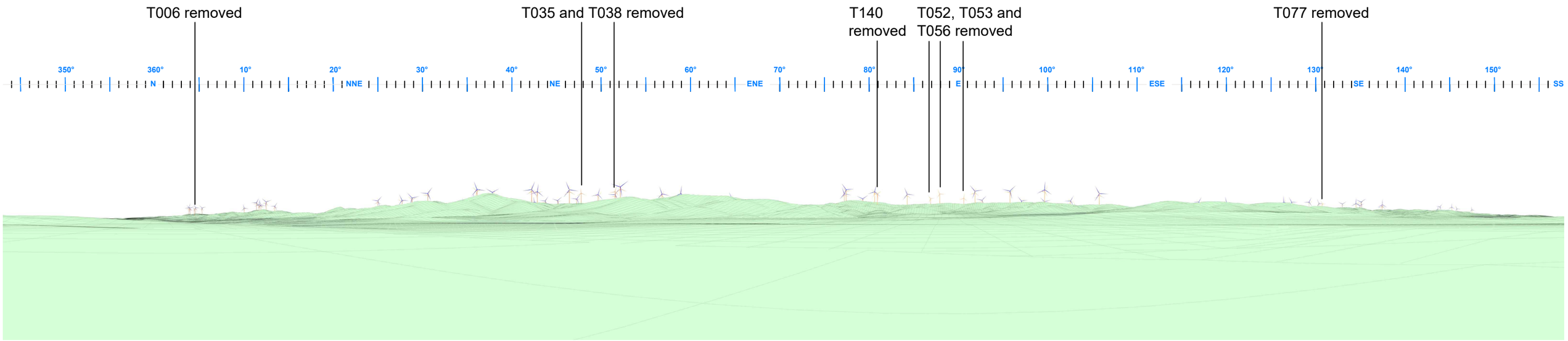
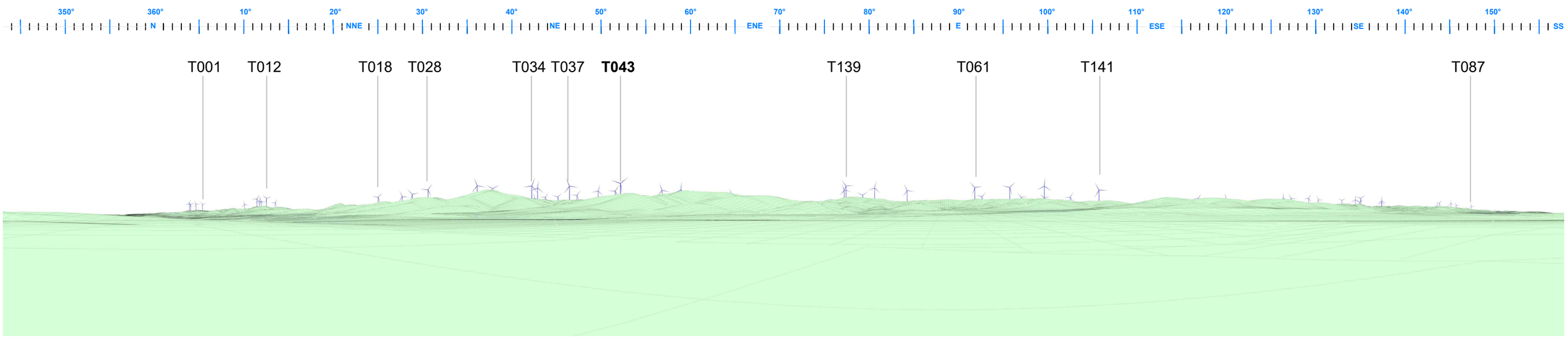
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R271 looking north to south east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T043) 4,035 metres** (provided as representative view from south of Rye Park village and not included in Table 4 or Table 5)




Wire frame from residential dwelling R271 looking north to south east: Proposed Mod 1 200m tip of blade wind turbines (blue) only

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 36 -
Wire frame 24 from residential dwelling R271

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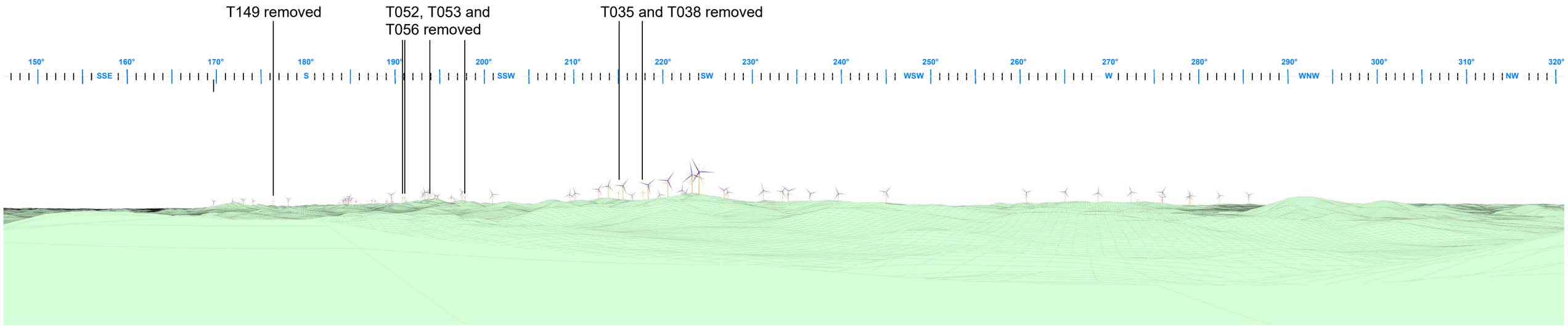
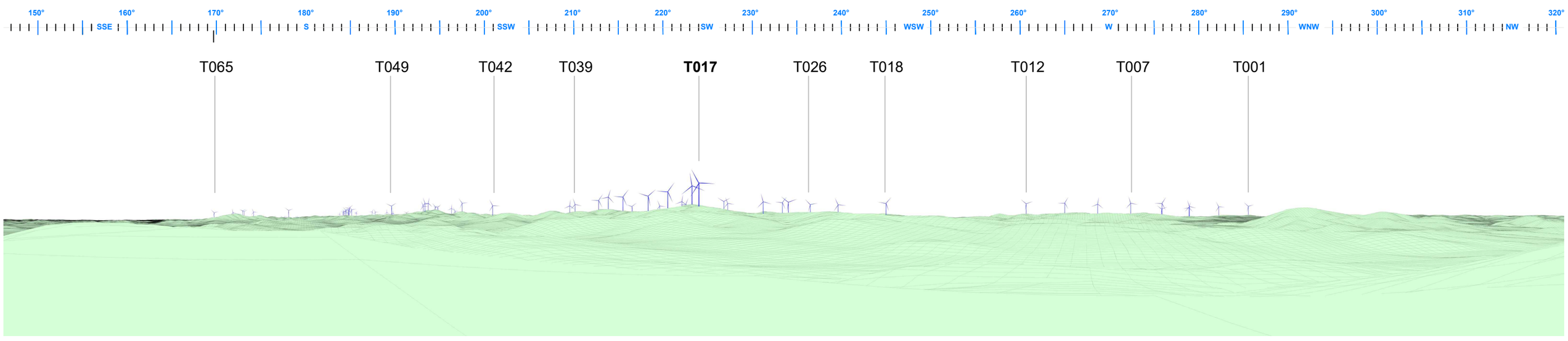
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R286 looking south south east to north west: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T017) 2,512 metres**




Wire frame from residential dwelling R286 looking south south east to north west: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -9, change in blade tip visibility -7

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 37 -
Wire frame 25 from residential dwelling R286

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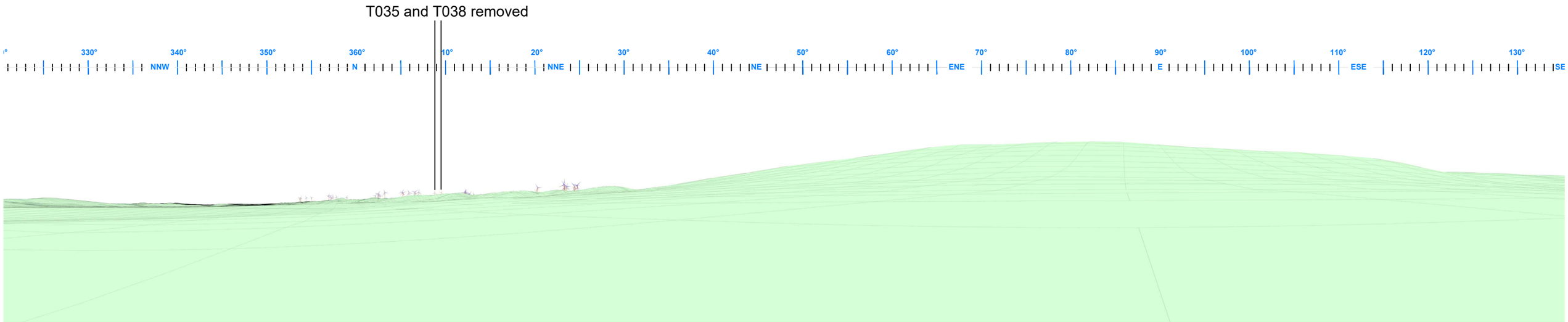
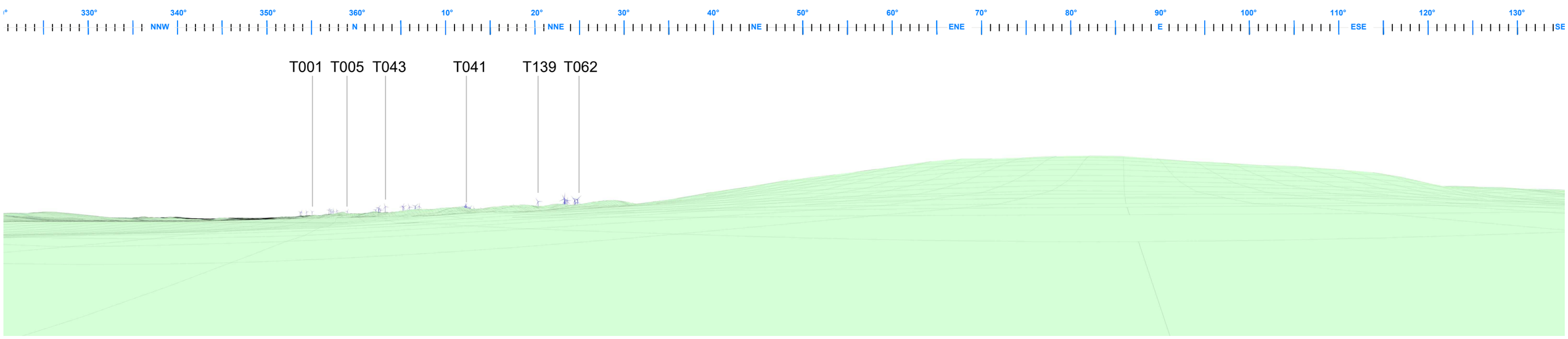
# Rye Park Wind Farm Modification 1




Wire frame from residential dwelling R298 looking north to north east: Approved 157m tip of blade wind turbines (orange) and Mod1 200m tip of blade wind turbines (blue)
Approximate distance to closest approved wind turbine **(T079) 3,210 metres**




Wire frame from residential dwelling R298 looking north to north east: Proposed Mod 1 200m tip of blade wind turbines (blue) only
Change in hub visibility -2, change in blade tip visibility 0

Consented RPWF wind turbine at 157m tip height

Proposed Mod 1wind turbine at 200m tip height

**Notes:**
Views toward wind turbines or portions of wind turbines below the green wireframe will be screened by landform.

The wireframe model does not account for existing tree cover, planting or built structures which may screen views toward the wind turbines.

Figure 38 -
Wire frame 26 from residential dwelling R298

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# Rye Park Wind Farm Modification 1

# 10 Photomontages

## 10.1 Introduction

Photomontages have been prepared by DNV-GL Pty Ltd to illustrate the consented RPWF wind turbines and the proposed Mod 1 wind turbines. A total of 3 locations (PM1, PM5 and PM6) were selected to illustrate the consented and Mod 1 wind turbines from view locations in surrounding areas.

The photomontage locations were selected from surrounding road corridors to represent a range of distances and view angles between the viewpoint and wind turbine to illustrate the potential influence of distance on visibility. The photomontage locations are illustrated in **Figures 1** and **2** and photomontages presented in **Figures 39** to **47**.

The photomontage included the consented RPWF wind turbines and proposed Mod 1 wind turbines at a 120-degree view angle, as well as a 54-degree view angle prepared with the regard to the Scottish Natural Heritage Guidelines, 2017. The following table identifies each photomontage location and the corresponding 54-degree and 120-degree view angle photomontage.

**Table 7 –** Photomontage details

| Consented RPWF and Mod 1 120-degree view angle photomontage location and figure number | Consented RPWF 54-degree view angle | Proposed Mod 1 54-degree view angle |
|---|---|---|
| **Figure 39 Photo location PM1** - View toward consented RPWF and Mod 1 wind turbines from Coolalie Road. | **Figure 40** | **Figure 41** |
| **Figure 42 Photo location PM5** - View toward consented RPWF and Mod 1 wind turbines from Little Plains Road. | **Figure 43** | **Figure 44** |
| **Figure 45 Photo location PM6** - View toward consented RPWF and Mod 1 wind turbines from Kershaw Street, Rye Park | **Figure 46** | **Figure 47** |

Each photomontage was generated through the following steps:

- A digital terrain model (DTM) of the proposed Rye Park Wind Farm site was created from a terrain model of the surrounding area using digital contours
- The site DTM was loaded in the DNV-GL 'Wind Farmer' software package
- The layout of the wind farm and 3-dimensional representation of the wind turbine was configured in DNV-GL Wind Farmer
- The location of each viewpoint (photo location) was configured in Wind Farmer – the sun position for each viewpoint was configured by using the time and date of the photographs from that viewpoint

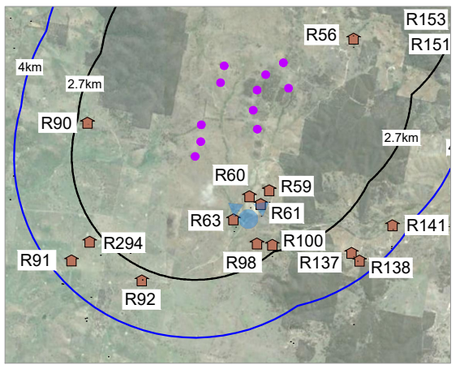
- The view from each photomontage location was then assessed in Wind Farmer. This process requires accurate mapping of the terrain as modelled, with that as seen in the photographs. The photographs, taken from each photomontage location were loaded into Wind Farmer and the visible turbines superimposed on the photographs
- The photomontages were adjusted using Photoshop CS3 to compensate for fogging due to haze or distance, as well as screening by vegetation or obstacles (no further adjustments were made) and
- The final image was converted to JPG format and imported and annotated as the final figure.

The horizontal and vertical field of view within the majority of the photomontages exceeds the parameters of normal human vision. However, in reality the eyes, head and body can all move and under normal conditions a person would sample a broad area of landscape within a panorama view. Rather than restricting the extent of each photomontage to a single photographic image, a broader field of view is presented to more fully illustrate the extent of the wind turbines.

Whilst a photomontage can provide an image that illustrates a very accurate representation of a wind turbine in relation to its proposed location and scale relative to the surrounding landscape, this VIA acknowledges that large scale objects in the landscape can appear smaller in photomontage than in real life and is partly due to the fact that a flat image does not allow the viewer to perceive any information relating to depth or distance.


**Photo location PM1** - View toward consented RPWF from Coolalie Road (157m tip height)

**Photo location PM1** - View toward proposed Mod 1 wind turbines from Coolalie Road (200m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM1**

Coordinates: Easting 684406, Northing 6149159

Elevation 625m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM1 is illustrated at a view angle of around 120 degrees which is within the general field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 39
PM1 120 degree view angle

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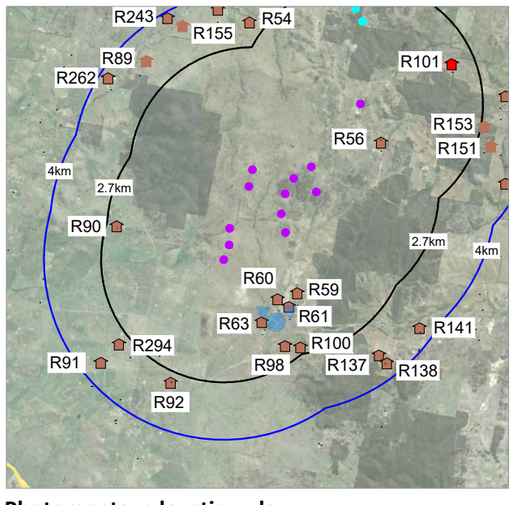
# Rye Park Wind Farm Modification 1


**PM 1** - View toward **consented** Rye Park Wind Farm from Coolalie Road (157m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM1**

Coordinates: Easting 684406, Northing 6149159

Elevation 625m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM1 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 40
PM1 54 degree view angle toward consented RPWF wind turbines

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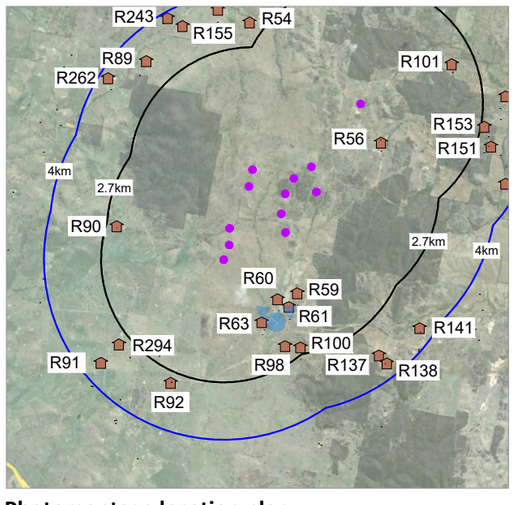
# Rye Park Wind Farm Modification 1


**PM 1** - View toward **proposed Mod 1** wind turbines from Coolalie Road (200m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM1**

Coordinates: Easting 684406, Northing 6149159

Elevation 625m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM1 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 41
PM1 54 degree view angle toward proposed Mod 1wind turbines

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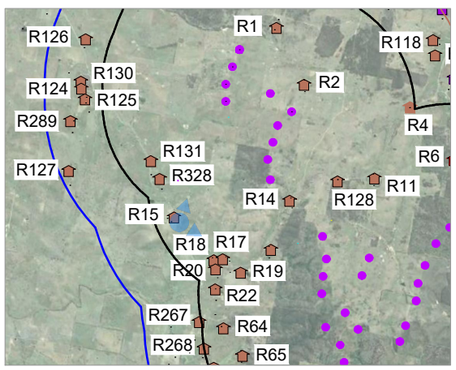
# Rye Park Wind Farm Modification 1


**Photo location PM5** - View toward **consented** RPWF from Little Plains Road (157m tip height)

**Photo location PM5** - View toward **proposed Mod 1** wind turbines from Little Plains Road (200m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM5**

Coordinates: Easting 675208, Northing 6182706

Elevation 588m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM5 is illustrated at a view angle of around 120 degrees which is within the general field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 42
PM5 120 degree view angle

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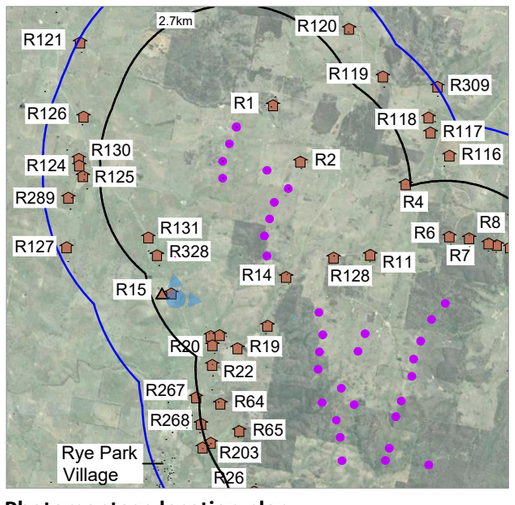
# Rye Park Wind Farm Modification 1


**PM5** - View toward **consented** Rye Park Wind Farm from Little Plains Road (157m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM5**

Coordinates: Easting 675208, Northing 6182706

Elevation 588m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM5 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 43
PM5 54 degree view angle toward consented RPWF wind turbines

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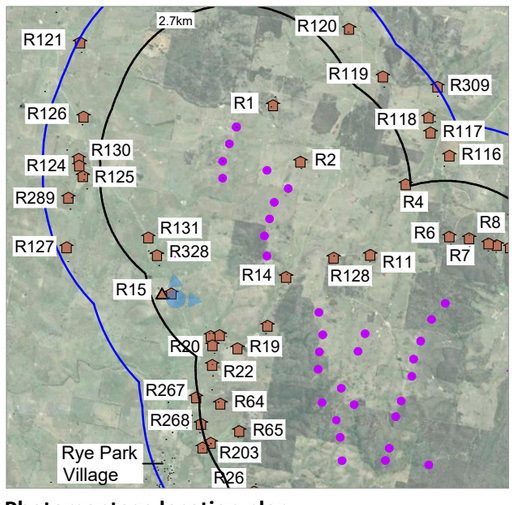
**PM5** - View toward **proposed Mod 1** Rye Park Wind Farm from Little Plains Road (157m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM5**

Coordinates: Easting 675208, Northing 6182706

Elevation 588m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM5 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

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The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 44
PM5 54 degree view angle toward proposed Mod 1 wind turbines

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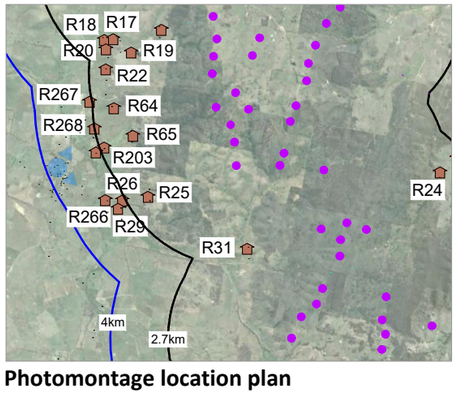
# Rye Park Wind Farm Modification 1


**Photo location PM6** - View toward **consented** RPWF from Kershaw Street, Rye Park (157m tip height)

**Photo location PM6** - View toward **proposed Mod 1** wind turbines from Kershaw Street, Rye Park (200m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM6**

Coordinates: Easting 674899, Northing 6178817

Elevation 567m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM6 is illustrated at a view angle of around 120 degrees which is within the general field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 45
PM6 120 degree view angle

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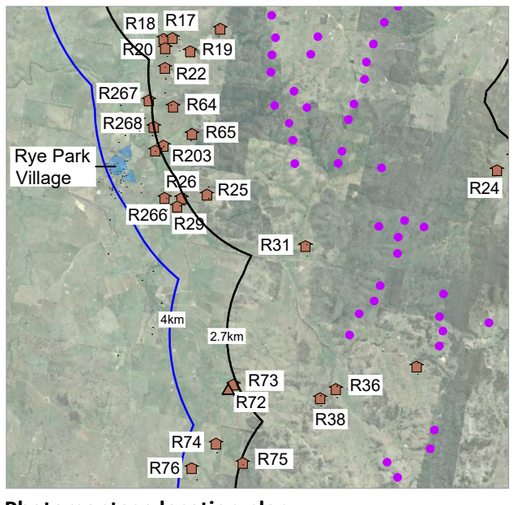
# Rye Park Wind Farm Modification 1


**PM 6** - View toward **consented** Rye Park Wind Farm from Kershaw Street, Rye Park (157m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM6**

Coordinates: Easting 674899, Northing 6178817

Elevation 567m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM6 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 46
PM6 54 degree view angle toward consented RPWF wind turbines

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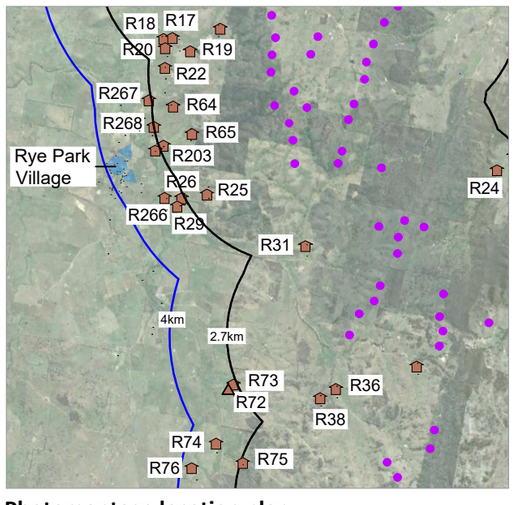
# Rye Park Wind Farm Modification 1


**PM 6** - View toward **proposed Mod 1** Rye Park Wind Farm from Kershaw Street, Rye Park (200m tip height)




**Photomontage location plan**

**Legend**

Approximate photo location and indicative view direction toward the Rye Park Wind Farm site

Consented Rye Park Wind Farm wind turbine

Residential dwelling

0km 2km

**General Notes: Photo location PM6**

Coordinates: Easting 674899, Northing 6178817

Elevation 567m AHD

Camera: Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A1 Landscape

Photomontage PM6 is illustrated at a view angle of around 54 degrees which is within the central field of human vision.

**Photomontage limitations**

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The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 47
PM6 54 degree view angle toward proposed Mod 1 RPWF wind turbines

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# Rye Park Wind Farm Modification 1

# 11 Cumulative effect

## 11.1 Introduction

GBD prepared a detailed Cumulative Landscape and Visual Impact Assessment (CLVIA) included as Appendix B in the Bango Wind Farm LVIA 2016. The CLVIA report was prepared at the request of DPIE to provide additional information regarding the potential cumulative visual impact of the consented Bango Wind Farm in addition to other proposed and consented wind farm developments within the surrounding landscape. The consented Bango Wind Farm CLVIA considered potential cumulative impacts associated with the consented Rye Park Wind Farm. The detailed Bango Wind Farm CLVIA determined that:

- the potential for cumulative landscape effects would be limited by the existing and similar landscape characteristic types found across both wind farm sites, as well as the influence of land use and modifications which have occurred through the establishment of an industrial agricultural occupation. Similar land use and landscape patterns extend widely beyond the wind farm sites. Whilst the cumulative landscape effect will extend the perception of a 'wind farm' landscape, this is likely to be contained within a local landscape context
- the potential to significantly increase visual impacts identified in the Bango Wind Farm LVIA at dwellings that are also within 5 km of Rye Park wind turbines would be limited by the screening influence of localised undulating landforms
- the potential to significantly increase the visual impacts identified in the Bango Wind Farm LVIA at dwellings within 5 km of the Bango wind turbines but beyond 5 km of the Rye Park wind turbines would be limited by the screening influence of localised undulating landforms and tree cover surrounding and beyond residential dwellings
- the potential to significantly increase the visual impact identified in the Bango Wind Farm LVIA for dwellings beyond 5 km of the Bango and Rye Park wind turbines would be largely limited by the screening influence of localised undulating landforms and tree cover surrounding and beyond residential dwellings and
- the potential cumulative visual effect of wind turbines within Bango Wind Farm and RPWF for vehicles travelling along the Hume Highway, Lachlan Valley Way and other local roads would be limited by extensive tree cover alongside road corridors and/or undulating landforms extending beyond the road corridors.

The DPIE recommended approval (subject to conditions) of the Bango Wind Farm (incorporating the CLIVA) in February 2018. The NSW IPC granted development consent for the Bango Wind Farm in May 2018. The Commission's findings and determination stated that the Bango Wind Farm '*would not create significant or local cumulative visual impacts'.* The Bango Wind Farm was also subject to a further Development Consent made by the NSW Land and Environment Court.

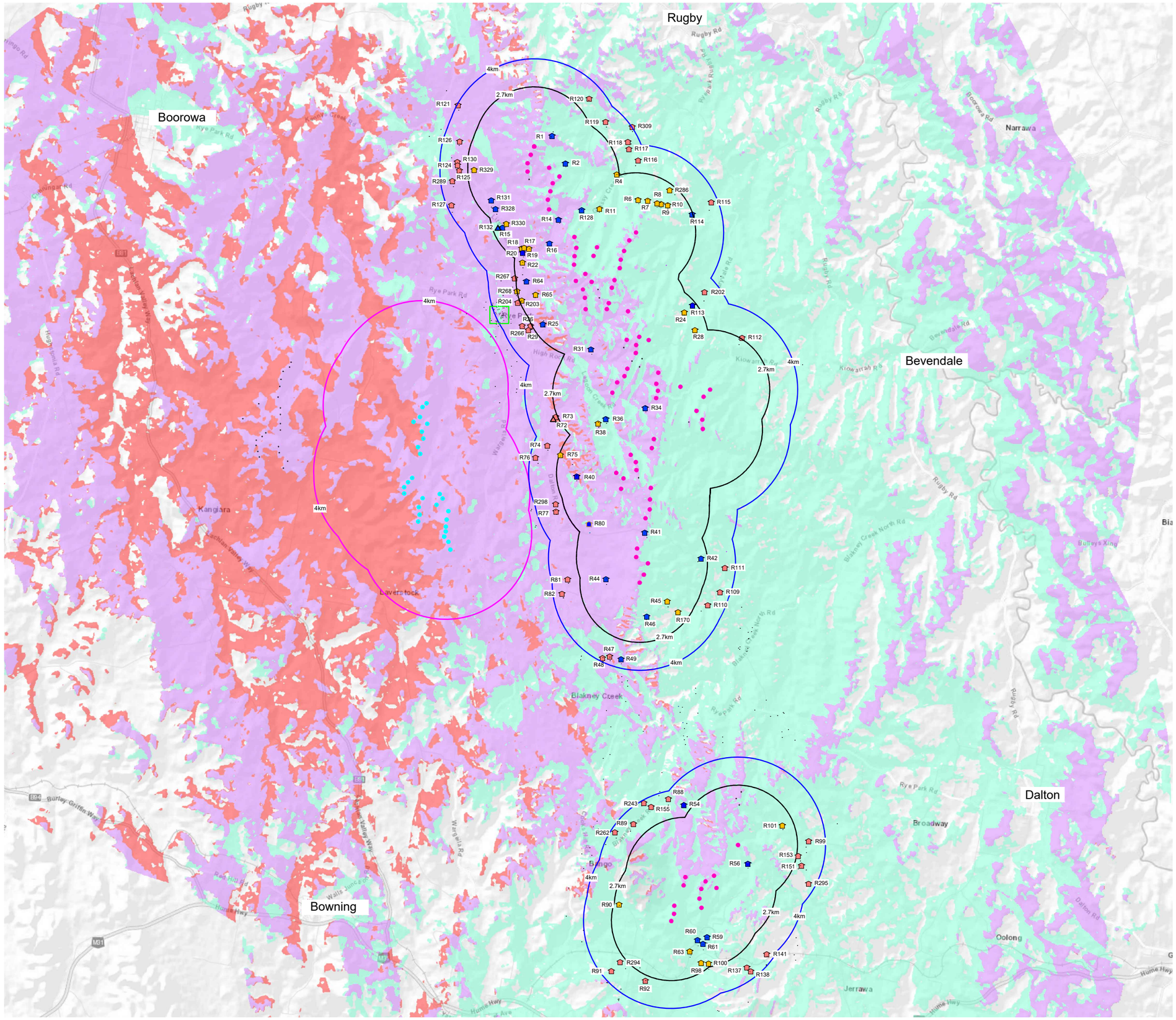
GBD note that subsequent to the preparation of the Bango Wind Farm CLVIA, a total of 24 wind turbines have been deleted from the Bango Wind Farm Mount Buffalo cluster. This results in 27 consented wind turbines (from the 51) included in the original Bango Wind Farm CLVIA study area.

The Bango Wind Farm CLVIA included in its assessment a total of 65 wind turbines belonging to the original RPWF project. Since the Bango Wind Farm CLVIA was prepared, a total of 20 RPWF wind turbines have now been removed (8 turbines recommended by PAC and 12 turbines proposed by the Mod 1 application). This results in a total of 45 wind turbines (from the 65) included in the original Bango Wind Farm cumulative assessment study area.

Given the proposed Mod 1 wind turbine is not considered to result in any significant increase in magnitude of visual effect, and that the overall number of Bango Wind Farm and RPWF wind turbines has been reduced subsequent to the preparation of the Bango Wind Farm CLVIA, this Mod 1 VIA has determined that the potential cumulative visual impact of the proposed Mod 1 wind turbines will be no greater than the determination of cumulative visual impacts for the consented Bango Wind Farm and RPWF projects.

GBD also note that the Bango Wind Farm wind turbines were amended during the Development Application to increase wind turbines from 192m to 200m. The proposed Mod 1 wind turbines would therefore be consistent with the Bango Wind Farm wind turbines in blade tip height.

**Figures 48** to **51** illustrate cumulative ZVI diagrams for the consented RPWF and Bango Wind Farm at hub height and tip of blade. The cumulative ZVI diagrams demonstrate a relatively small degree of change in visibility between the consented Bango Wind Farm and the proposed Mod 1 increased tip heights and reduced number of wind turbines. **Figures 48** to **51** also illustrate that no non-associated residential dwellings would be located within a 4km distance (the Guidelines 'blue line' for wind turbines with a 200m tip height) of wind turbines within both the consented Bango Wind Farm and the proposed Mod 1 site.




LEGEND:

Wind farm visibility

- Rye Park and Bango
- Bango only
- Rye Park only
- Neither visible

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent (indicative location)
- Consented Bango wind turbine, Mount Buffalo cluster (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- 4km distance from consented Bango wind turbine (Mount Buffalo cluster)

Figure 48-
Bango Wind Farm & consented RPWF wind farm cumulative ZVI for modelled hub height

# Rye Park Wind Farm Modification 1

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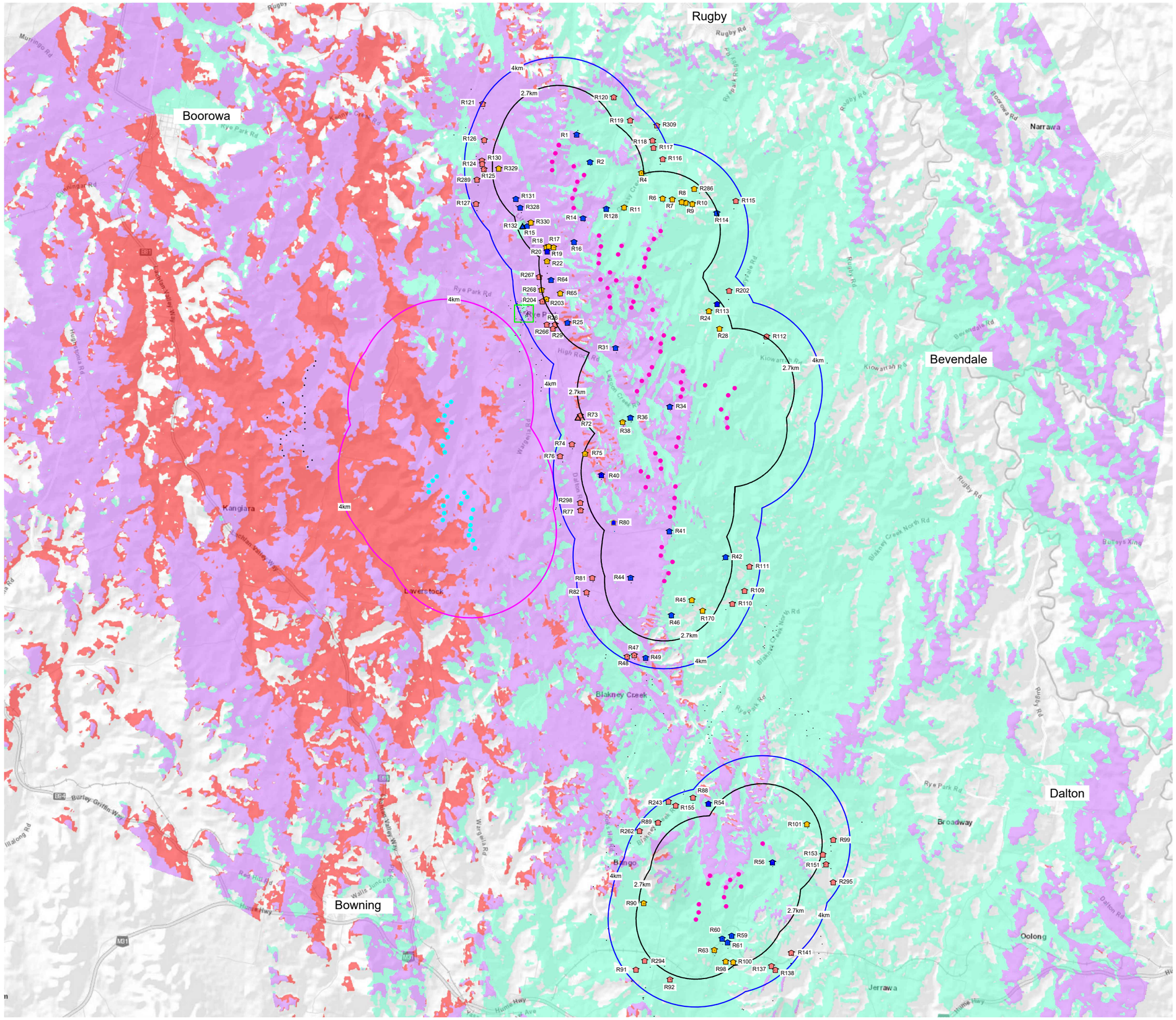


LEGEND:

Wind farm visibility

- Rye Park and Bango
- Bango only
- Rye Park only
- Neither visible

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Bango wind turbine, Mount Buffalo cluster (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- 4km distance from consented Bango wind turbine (Mount Buffalo cluster)

0km 5km

Figure 49-
Bango Wind Farm & proposed Mod 1 wind farm cumulative ZVI for modelled hub height

# Rye Park Wind Farm Modification 1

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LEGEND:

Wind farm visibility

- Rye Park and Bango
- Bango only
- Rye Park only
- Neither visible

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Rye Park wind turbine removed by Proponent (indicative location)
- Consented Bango wind turbine Mount Buffalo cluster (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- 4km distance from consented Bango wind turbine (Mount Buffalo cluster)

Figure 50-
Bango Wind Farm & consented RPWF cumulative ZVI for tip height

0km 5km

# Rye Park Wind Farm Modification 1

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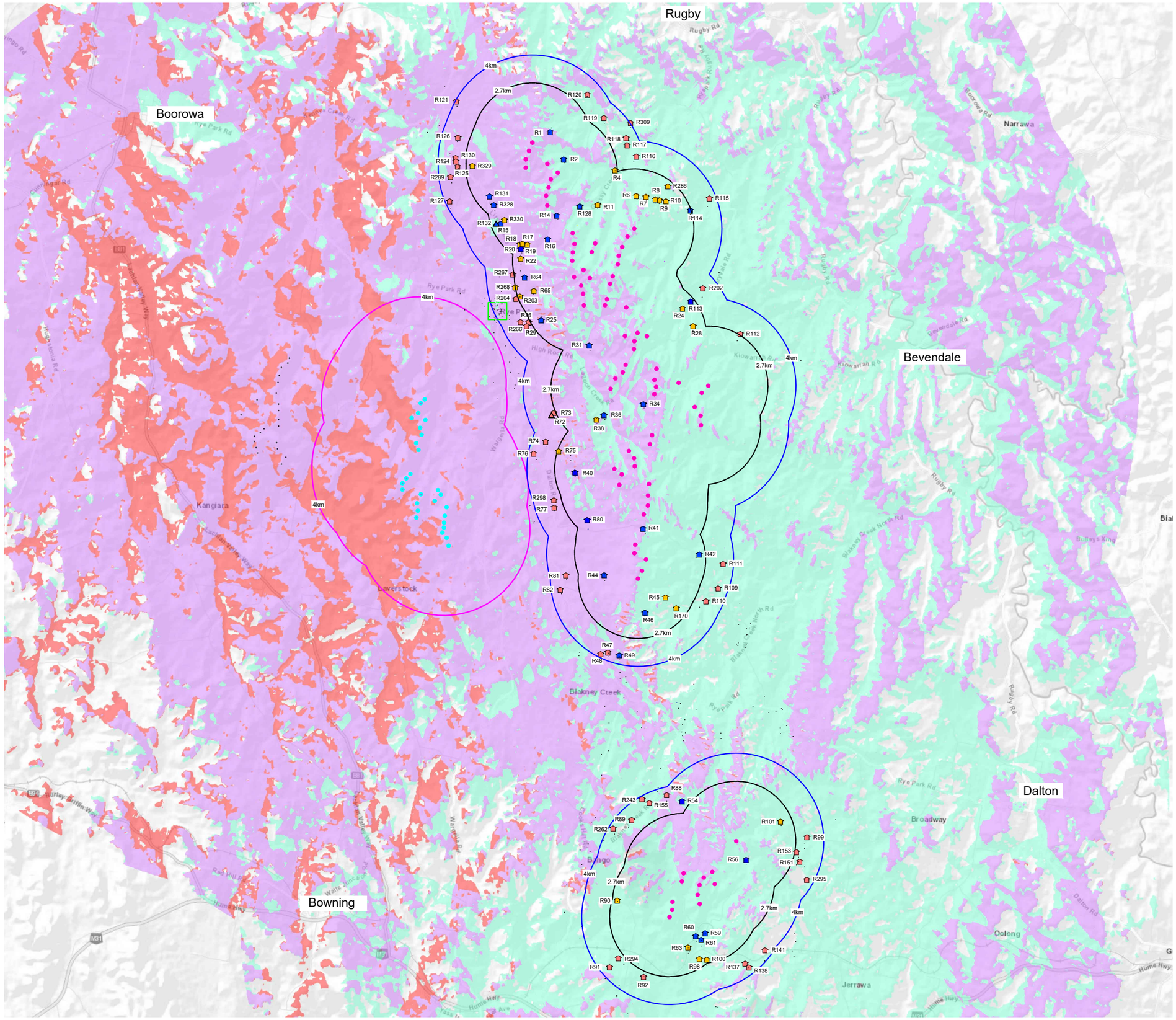


LEGEND:

Wind farm visibility

- Rye Park and Bango
- Bango only
- Rye Park only
- Neither visible

- Associated residential dwelling within 4km of wind turbine
- Non associated residential dwelling within 2.7km of wind turbine
- Non associated residential dwelling between 4km of wind turbine
- Non residential structure
- Consented Rye Park wind turbine (indicative location)
- Consented Bango wind turbine Mount Buffalo cluster (indicative location)
- 2.7km distance from consented Rye Park wind turbine
- 4km distance from consented Rye Park wind turbine
- 4km distance from consented Bango wind turbine (Mount Buffalo cluster)

0km 5km

# Rye Park Wind Farm Modification 1

Figure 51-
Bango Wind Farm & proposed Mod 1 cumulative ZVI modelled tip height

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# 12 Review of Conditions of Consent

## 12.1 Introduction

The RPWF Development Consent (22 May 2017) Conditions of Consent has been reviewed as part of this VIA to determine the type and extent of additional mitigation measures that would be required or should be modified as a result of the proposed Mod 1 amendments.

## 12.2 Review of Conditions of Consent

**Table 8** outlines the existing Conditions relevant to mitigate the potential visual effects of the RPWF Mod 1 amendments.

**Table 8** Conditions of Consent, Schedule 3 Environmental Conditions – General (Visual)

| Condition | Description | Comment |
|---|---|---|
| Visual Agreement | | |
| 2 | The Applicant must not construct the applicable wind turbines listed in Table 2 unless the Applicant has an agreement with the owner(s) of the relevant land in regard to the visual impacts associated with the project, and the Applicant has advised the Department in writing of the terms of this agreement.<br><br>Table 2 refers only to wind turbine #145 | This condition remains valid. |
| Visual Impact Mitigation | | |
| 3 | For a period of 5 years from the commencement of construction, the owner of any non-associated residence within 4 km of any wind turbine may ask the Applicant to implement visual impact mitigation measures on their land to minimise the visual impacts of the development on their residence (including its curtilage).<br>Upon receiving such a written request from the owner of these residences, the Applicant must implement appropriate mitigation measures (such as landscaping and vegetation screening) in consultation with the owner.<br>These mitigation measures must be reasonable and feasible, aimed at reducing the visibility of the wind turbines from the residence and its curtilage, and commensurate with the level of visual impact on the residence. | This condition remains valid. |

**Table 8** Conditions of Consent, Schedule 3 Environmental Conditions – General (Visual)

| Condition | Description | Comment |
|---|---|---|
| | All mitigation measures must be implemented within 12 months of receiving the written request, unless the Secretary agrees otherwise.<br>If the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.<br>*Notes:*<br>*• To avoid any doubt, mitigation measures are not required to be implemented to reduce the visibility of wind turbines from any other locations on the property other than the residence and its curtilage.*<br>*• The identification of appropriate visual impact mitigation measures will be more effective following the construction of the wind turbines. While owners may ask for the implementation of visual impact mitigation measures shortly after the commencement of construction, they should consider the merits of delaying this request until the relevant wind turbines are visible from their residence.* | |
| Visual Appearance | | |
| 4 | The Applicant must:<br>(a) minimise the off-site visual impacts of the development;<br>(b) ensure the wind turbines are:<br>• painted off white/grey, unless otherwise agreed by the Secretary; and<br>• finished with a surface treatment that minimises the potential for glare and reflection;<br>(c) ensure the visual appearance of all ancillary infrastructure (including paint colours), blends in as far as possible with the surrounding landscape; and<br>(d) not mount any advertising signs or logos on wind turbines or ancillary infrastructure. | These conditions remain valid. |

Overall the existing conditions imposed on the Project Approval, together with requested amendments, are considered to remain appropriate to continue to manage the potential visual impacts from the proposed Mod 1 amendments.

# 13 Conclusion

## 13.1 Conclusion

This VIA has compared the consented RPWF wind turbines against the proposed Mod 1 wind turbine layout and design and concludes that:

- the proposed change to the proposed Mod 1 tip height would be discernible from some surrounding and proximate view locations where views extend toward the consented RPWF wind turbines
- overall the number of visible wind turbine hubs and blade tips (as modelled) would be subject to marginal increases and decreases from residential dwellings within 4km of the consented RPWF. Some areas, including residential dwellings within the Rye Park village would have an overall reduction in the number of visible wind turbine hubs and blade tips due to the removal of wind turbines
- the proposed Mod 1 wind turbine is not considered to result in a magnitude of visual change that would significantly increase visual effects (and former visual impact ratings) associated with the consented RPWF project. The amendment to tip of blade height would result in an increase in height of approximately half a rotor blade above the consented design envelope at a 157m tip of blade
- within the parameters of normal human vision the proposed Mod 1 wind turbines would extend approximately less than 1 degree above the consented RPWF tip height at a distance of 2.7kms from the wind turbines
- additional levels of wind turbine visibility would be generally limited and largely confined to the wind turbine hubs and upper portions of rotor blades and blade tips
- potential cumulative visual impacts (originally assessed in the Bango Wind Farm LVIA 2016) between the proposed Mod 1 wind turbines and the consented Bango Wind Farm would not increase, largely due to the removal of wind turbines within the Bango Wind Farm (Mount Buffalo cluster) and the RPWF
- the implementation of both onsite and off-site landscape works, in accordance with the Conditions of Consent, would provide visual mitigation for a number of residential dwellings surrounding the consented RPWF wind farm site. Offsite landscape works would also address the objectives of the Visual Bulletin as proposed mitigation measures for residential dwellings located between the ‘blue’ and ‘black’ line identified in the Visual Bulletin Figure 5.

## Limitations

GBD has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Rye Park Wind Farm Pty Ltd. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the GBD Proposal dated 2 January 2019.

The methodology adopted and sources of information used are outlined in this report. GBD has made no independent verification of this information beyond the agreed scope of works and GBD assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to GBD was false.

This report was prepared between June 2019 and February 2020 and is based on the conditions encountered and information reviewed at the time of preparation. GBD disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

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