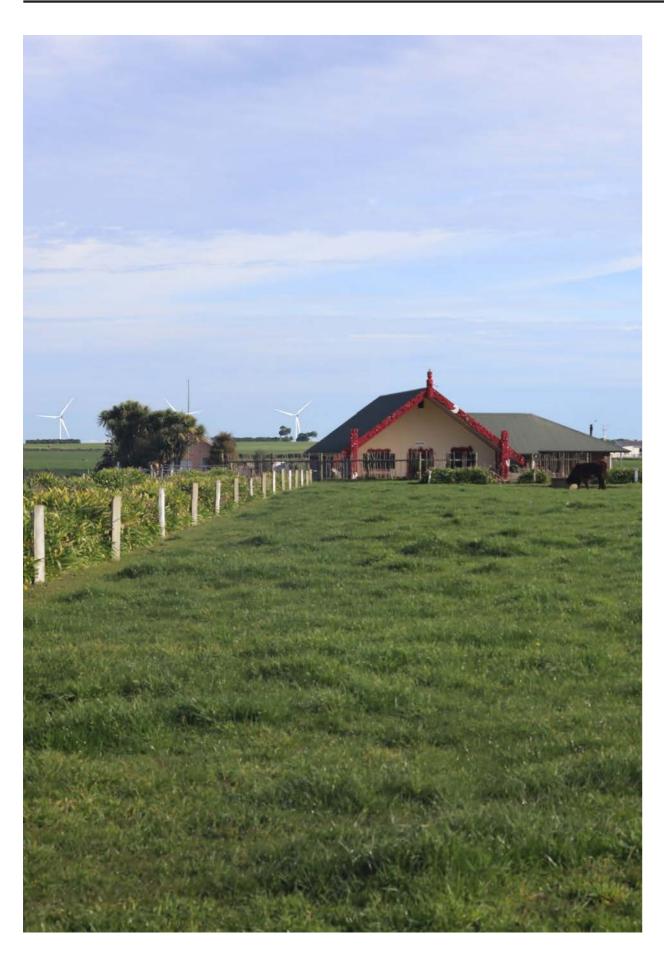
KAPUNI GREEN HYDROGEN PROJECT Landscape and Visual Effects Assessment

APPENDIX 3
Marae Locations

Prepared for Hiringa Energy by Boffa Miskell Ltd May 2021



KAPUNI GREEN HYDROGEN PROJECT



VISUALISATIONS

FIGURE 22: Viewpoint Location Map
FIGURE 23: Visual Simulations - Process

H71-A:	Adjacent to Te Aroha Marae, Inaha Rd	- Panorama (Revised Layout)
H71-B:	Adjacent to Te Aroha Marae, Inaha Rd	- Single Frame (Revised Layout)
H109-A:	View from Aotearoa Marae, Hastings Rd	- Panorama (Revised Layout)
		• • •
H109-B:	View from Aotearoa Marae, Hastings Rd	- Single Frame (Revised Layout)
H109-C:	View adjacent to Aotearoa Marae, Hastings Rd	- Single Frame (Revised Layout)
H111-A:	View from Waiokura Marae, 27 Winks Road	- Panorama (Revised Layout)
H111-B:	View from Waiokura Marae, 27 Winks Road	- Single Frame (Revised Layout)
H112:	View from Mawhitiwhiti Marae, 7 Omahuru Rd	- Wireframe & Google Earth Street View (Revised Layout)
		The same of every same career than (in the same and same
H113:	View from Oeo Pa, 2915 South Road	- Wireframe & Google Earth Street View (Revised Layout)
	7.0	The name a coogle can check them (noticed cayout)
H114:	View from Okare Ki Uta Marae, Taikatu Rd	- Wireframe & Google Earth Street View (Revised Layout)
11117.	view from Orace IXI Ota Marae, Tairatu IXu	- Whename & Google Latti Street view (Nevised Layout)
H115:	View from Tawhitinu Marae, 2453 South Road	- Wireframe & Google Earth Street View (Revised Layout)
11113.	view from fawriting marae, 2400 bouth Noau	- which allo & Google Latti Street view (Newseu Layout)





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Data Sources: Sourced from the LINZ Data Service and licensed for re-use under the Creative Commons Attribution 4.0 New Zealand licence Projection: NZGD 2000 New Zealand Transverse Mercator



 Original Layout Revised Layout

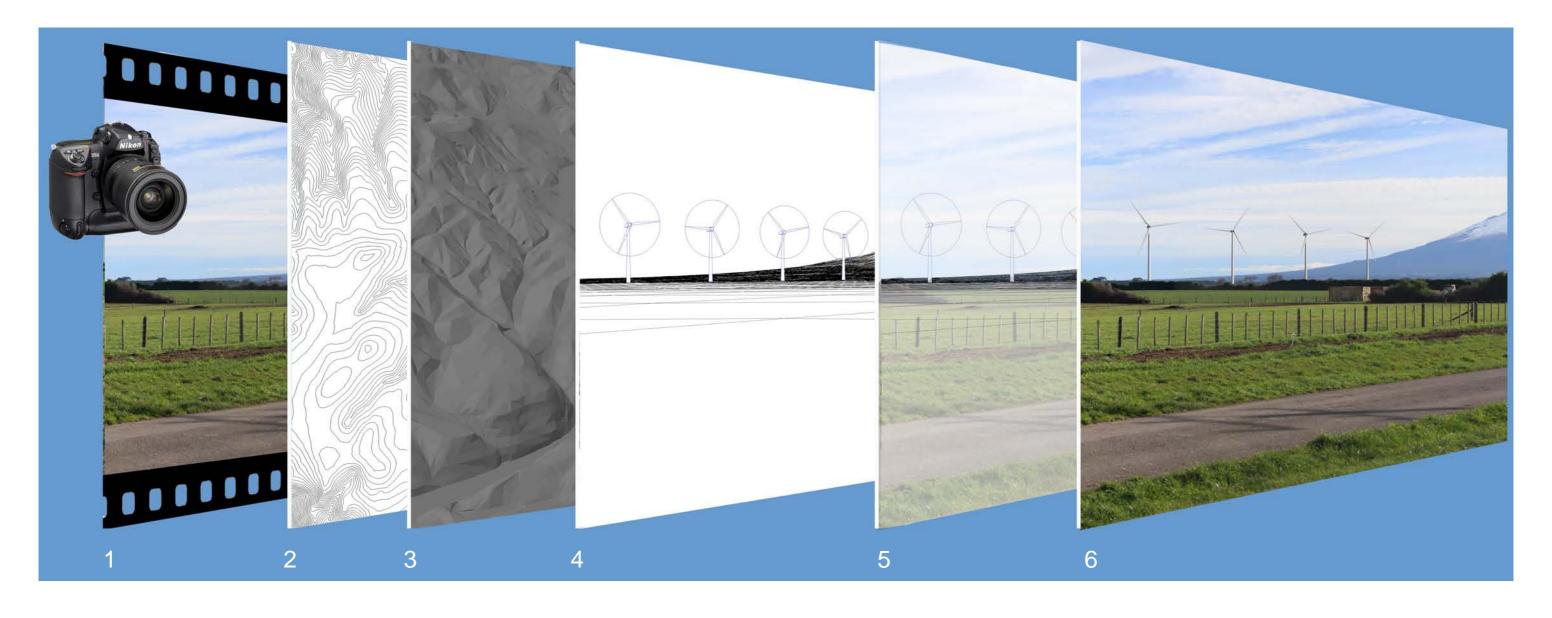
KAPUNI GREEN HYDROGEN PROJECT

Viewpoint Locations (Marae)

Date: 12 May 2021 | Revision: 0

Plan prepared for Hiringa Energy by Boffa Miskell Limited

FIGURE



- Site photographs were taken using a digital camera fitted with a 50mm focal length lens. The camera was mounted on a tripod and panoramic head and the photos taken in portrait mode. Multiple photos were digitally stitched together to form a series of 90° panoramas.
- 3D contour data was obtained for an area of 7.5km (north-south) x 185 km (east-west). This coverage was chosen to include Tongariro National Park, as it was necessary to be able to identify this feature in those viewpoints facing east.
- Using Windfarm 5 software, a 3D digital terrain model was created from the contours.

- Camera "viewpoints" were created for each location from which photographs were taken and simulations required. There are camera setups for both public (roadside) viewpoints and private (residential) viewpoints included in this supplement. Once created, the terrain model appears as a "wireframe" in each of the viewports.
- Importing the photograph behind the wireframe, the two were registered together to create a match between the terrain model and the photograph.
- 6 The final step was to create a "rendered" version, which takes into account the date, time and weather conditions at the time of photography. Final images were assembled using desktop publishing software.



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 2.4 km

Date of Photography :10:45am 30 July 2020 NZST

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

H71-A

Adjacent to Te Aroha Marae, Inaha Rd

KAPUNI GREEN HYDROGEN PROJECT





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NZTM Easting : 1 700 283 mE
NZTM Northing : 5 624 444 mN
Elevation/Eye Height : 118m / 2m
Date of Photography : 10:45am 30 July 2020 NZST

 $\begin{tabular}{ll} Horizontal Field of View & : 40° \\ Vertical Field of View & : 25° \\ Projection & : Rectilinear \\ Image Reading Distance @ A3 : 50cm \\ \end{tabular}$

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

KAPUNI GREEN HYDROGEN PROJECT Adjacent to Te Aroha Marae, Inaha Rd (Single Frame)

Date: April 2021 | Revision: 0

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Project Manager: boyden.evans@boffamiskell.co.nz | Drawn: PMo | Checked: -

VIEWPOINT

H71-B



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 6.6 km





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NZTM Easting : 1 705 208 mE
NZTM Northing : 5 624 992 mN
Elevation/Eye Height : 126m / 2m
Date of Photography : 10:20am 30 July 2020 NZST

 $\begin{tabular}{ll} Horizontal Field of View & : 40° \\ Vertical Field of View & : 25° \\ Projection & : Rectilinear \\ Image Reading Distance @ A3 : 50cm \\ \end{tabular}$

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

View from Aotearoa Marae, Hastings Rd (Single Frame)

Date: April 2021 | Revision: 0 H109-B

VIEWPOINT

Project Manager: boyden.evans@boffamiskell.co.nz | Drawn: PMo | Checked: -





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NZTM Easting : 1 705 276 mE
NZTM Northing : 5 625 120 mN
Elevation/Eye Height : 126m / 2m
Date of Photography : 10:20am 30 July 2020 NZST

Horizontal Field of View : 40°
Vertical Field of View : 25°
Projection : Rectilinear
Image Reading Distance @ A3 : 50cm

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

View adjacent to Aotearoa Marae, Hastings Rd (Single Frame)

Date: April 2021 | Revision: 0

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VIEWPOINT

Date: April 2021 | Revision: 0

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Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 4.7 km

Date of Photography :11:25am 30 July 2020 NZST

VIEWPOINT





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NZTM Easting : 1 698 150 mE
NZTM Northing : 5 621 565 mN
Elevation/Eye Height : 69m / 2m
Date of Photography :11:25am 30 July 2020 NZST

| Horizontal Field of View : 40° | Vertical Field of View : 25° | Projection : Rectilinear | Image Reading Distance @ A3 : 50cm

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

KAPUNI GREEN HYDROGEN PROJECT

View from Waiokura Marae, 27 Winks Rd (Single Frame)

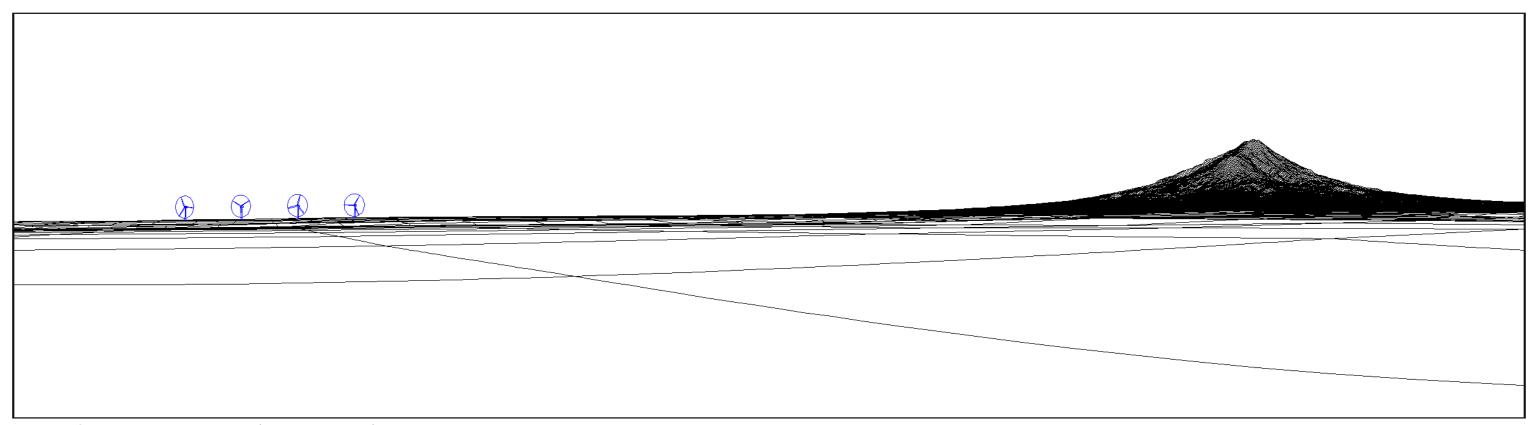
Frame) VIEWPOINT

Date: April 2021 | Revision: 0

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Project Manager: boyden.evans@boffamiskell.co.nz | Drawn: PMo | Checked: -

H111-B



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 6.9 km



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NZTM Easting : 1 705 680 mE NZTM Northing : 5 626 790 mN Elevation/Eye Height :143m / 2m Date of Photography :- Horizontal Field of View : 90°

Vertical Field of View : 30°

Projection : Rectilinear

Date of Photography: Image Reading Distance @ A3 : 20cm

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

View from Mawhitiwhiti Marae, 7 Omahuru Road

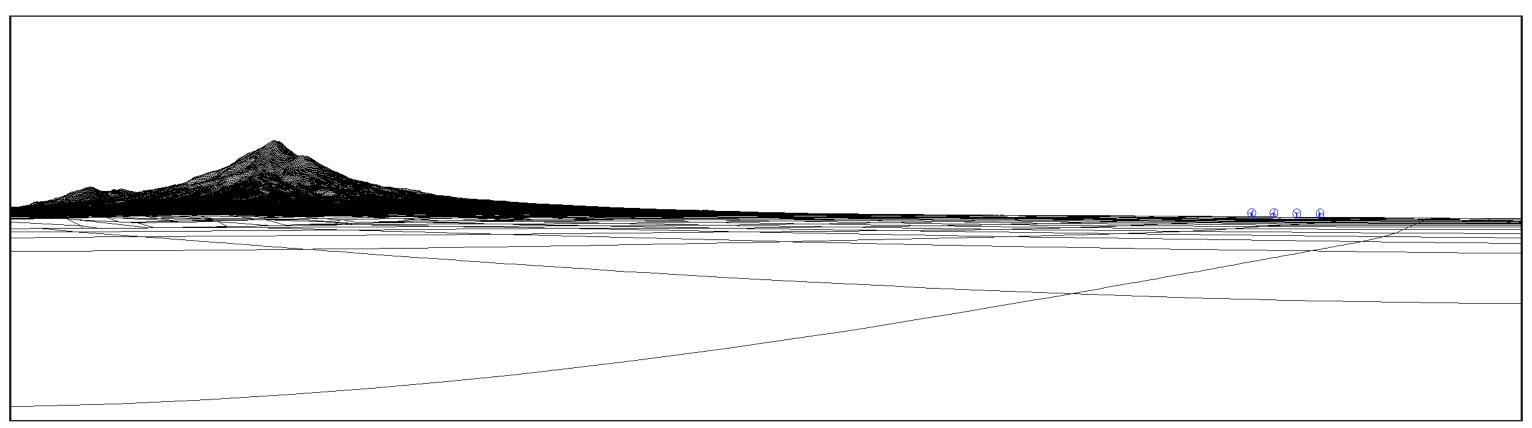
Date: April 2021 | Revision: 0

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VIEWPOINT

H112



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 16.8 km



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NZTM Easting : 1 682 025 mE NZTM Northing : 5 624 140 mN Elevation/Eye Height :41m / 2m Date of Photography :- Horizontal Field of View : 90°
Vertical Field of View : 30°
Projection : Rectilinear
Image Reading Distance @ A3 : 20cm

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

View from Oeo Pa, 2915 South Rd

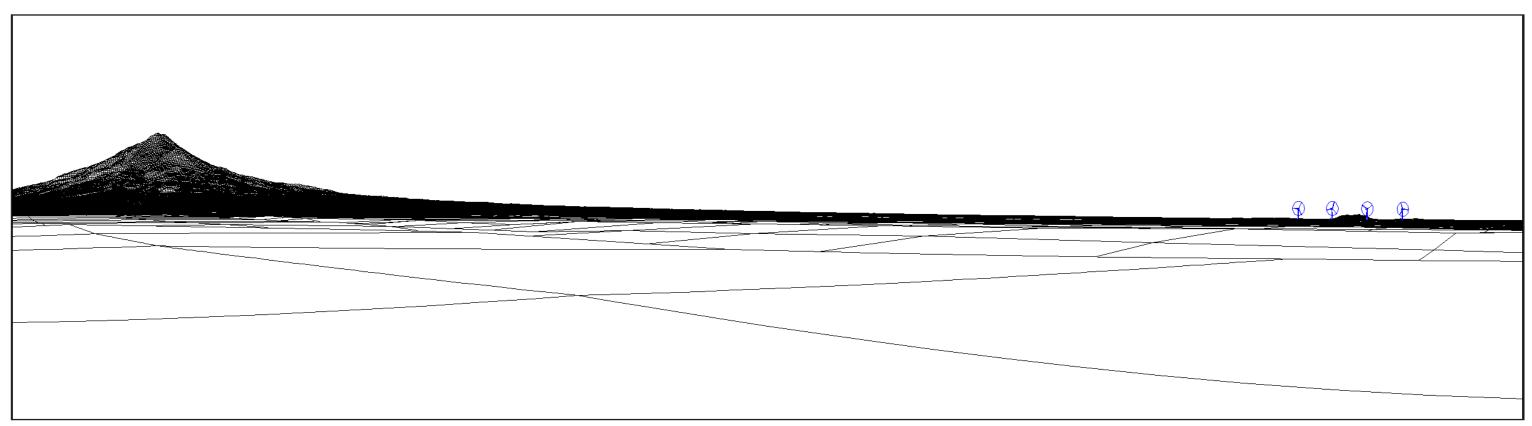
Date: April 2021 | Revision: 0

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VIEWPOINT

H113



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 10.9 km



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NZTM Easting : 1 687 890 mE NZTM Northing : 5 624 835 mN Elevation/Eye Height :87m / 2m Date of Photography :- Horizontal Field of View : 90° Vertical Field of View : 30° Projection : Rectilinear Image Reading Distance @ A3 : 20cm

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

View from Okare Ki Uta Marae, Taikatu Rd

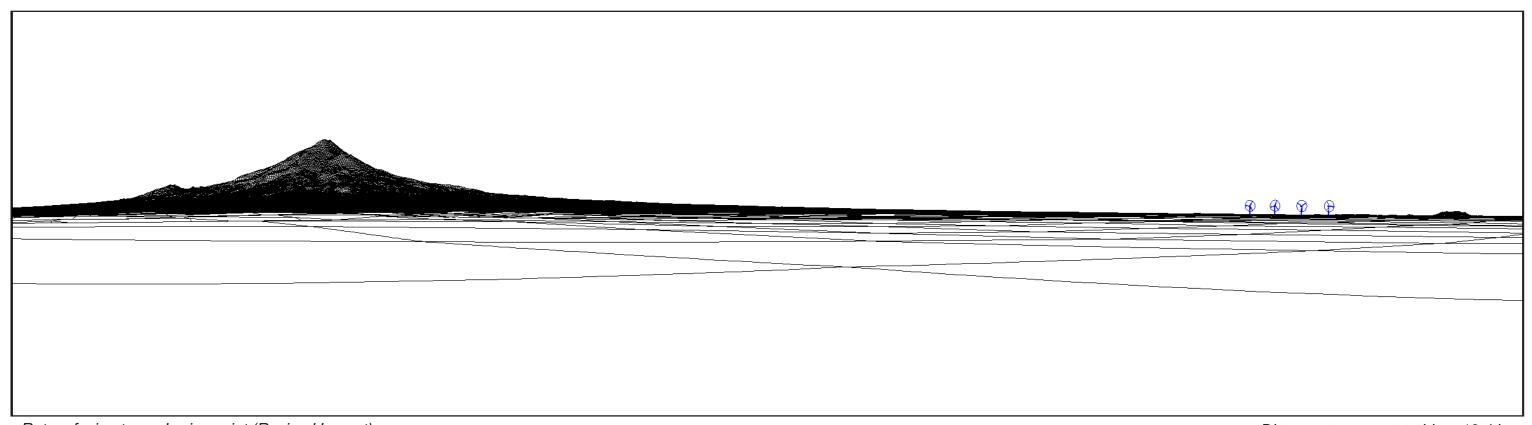
Date: April 2021 | Revision: 0

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VIEWPOINT

H114



Rotors facing towards viewpoint (Revised Layout)

Distance to nearest turbine: 13.4 km





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NZTM Easting : 1 685 976 mE NZTM Northing : 5 621 924 mN Elevation/Eye Height :50m / 2m Date of Photography :-

Turbine Dimensions: Hub=125m / RD=162m (Revised Layout)

Horizontal Field of View : 90° Vertical Field of View : 30° Projection : Rectilinear

Image Reading Distance @ A3 : 20cm

View from Tawhitinu Marae, 2453 South Rd

evision: 0 H115

VIEWPOINT

Date: April 2021 | Revision: 0

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