

Palmer Wind Farm

Fact Sheet
November
2023

Visual Impact & Shadow Flicker Fact Sheet



The Palmer Wind Farm would help reduce Australia's carbon footprint by generating up to 288MW of clean energy when constructed. That's enough to power up to 144,000 South Australian homes. The project will also bring investment and benefits focused on the surrounding community.

Recent advances in turbine technology mean we can significantly reduce the Project area with fewer, taller turbines and bigger setbacks from existing dwellings. This change would more than halve the number of turbines required and reduce the Project area by over 5,000 hectares.

This factsheet summarises the Visual Impact & Shadow Flicker assessments for the Project. These assessments found that the Varied Project would have a visual impact on a significantly smaller number of dwellings and locations than the Approved Project.

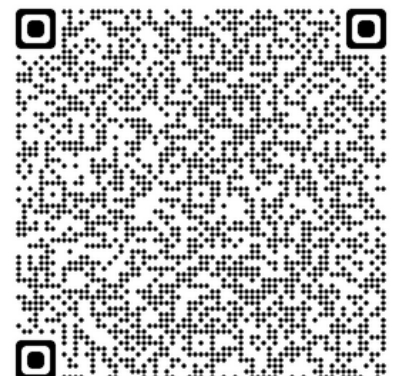
This reduction in visual impacts is most significant to the north, where the reduction in wind turbine numbers will substantially reduce the visual impact from areas surrounding Eden Valley, Cambrai, Marne River and Saunders Gorge.

The Varied Project will have similar visual impacts as the Approved Project to the south, east and west with fewer but larger turbines.

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The Approved Project

The Palmer Wind Farm Project first received Planning Consent in December 2015 for up to 114 wind turbines. In 2019, the Project was authorised to proceed with up to 103 wind turbines.

Tilt Renewables is proposing to lodge a Variation Application pursuant to the Planning, Development and Infrastructure Act 2016 to amend the approved Project. This Variation Application is seeking to reduce the Project to 40 wind turbines and increase the maximum blade tip height to up to 220m (see Figure 1).

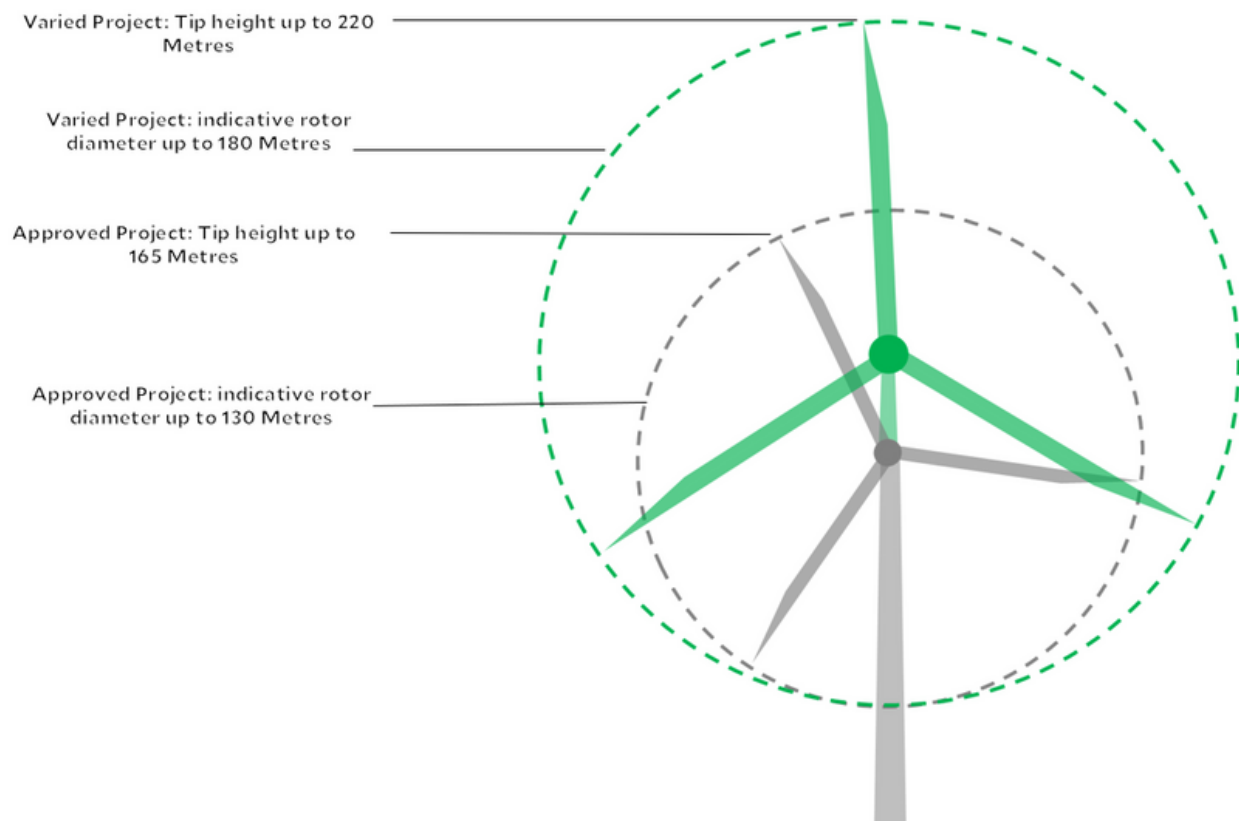
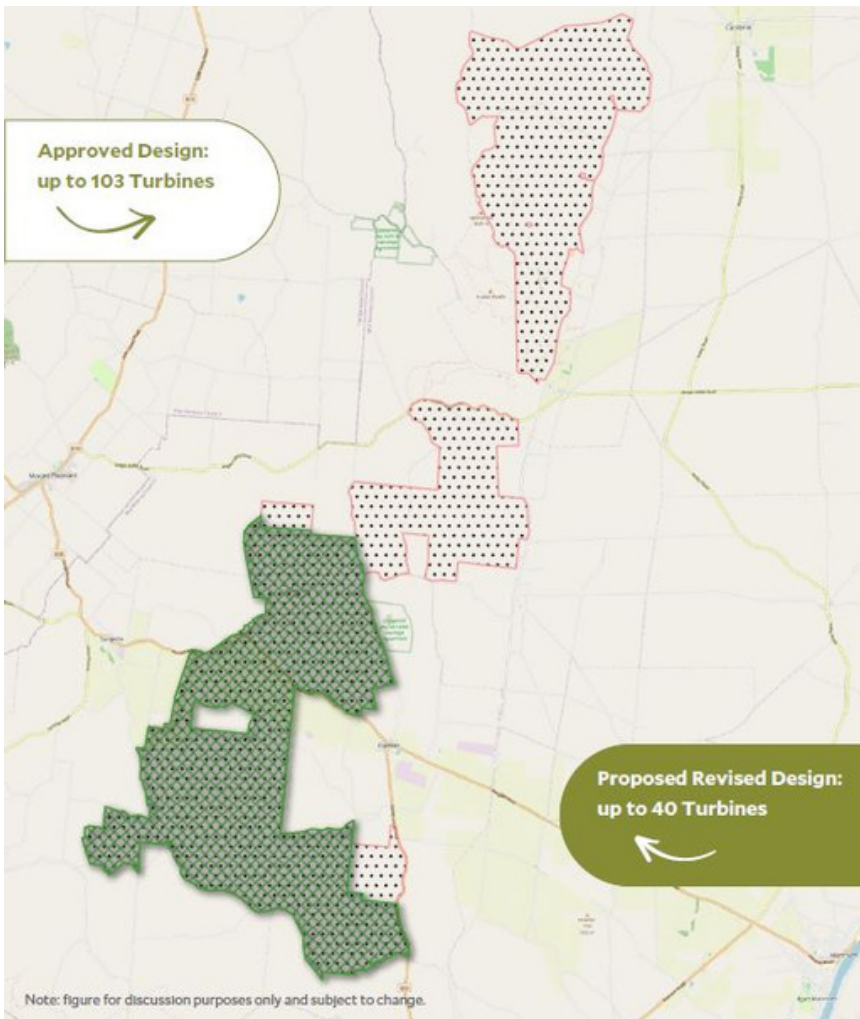


Figure 1: Approved turbine compared to varied turbine

Visual Impacts of the Varied Project

Table 1 and Figure 3 show the number of dwellings in proximity to turbines and the overhead transmission line under the Approved and Varied Projects. In total there would be 83 dwellings within three kilometres of a turbine under the Varied Project (a reduction of 56%).

Table 1 - Number of recorded dwellings in proximity to wind turbines and the overhead transmission line			
		<1.5km	1.5km to 3km
Wind Turbines	Approved Project	28	160
	Varied Project	16 (12 less)	67 (93 less)
Overhead transmission line	Approved Project	83	77
	Varied Project	22 (61 less)	39 (38 less)

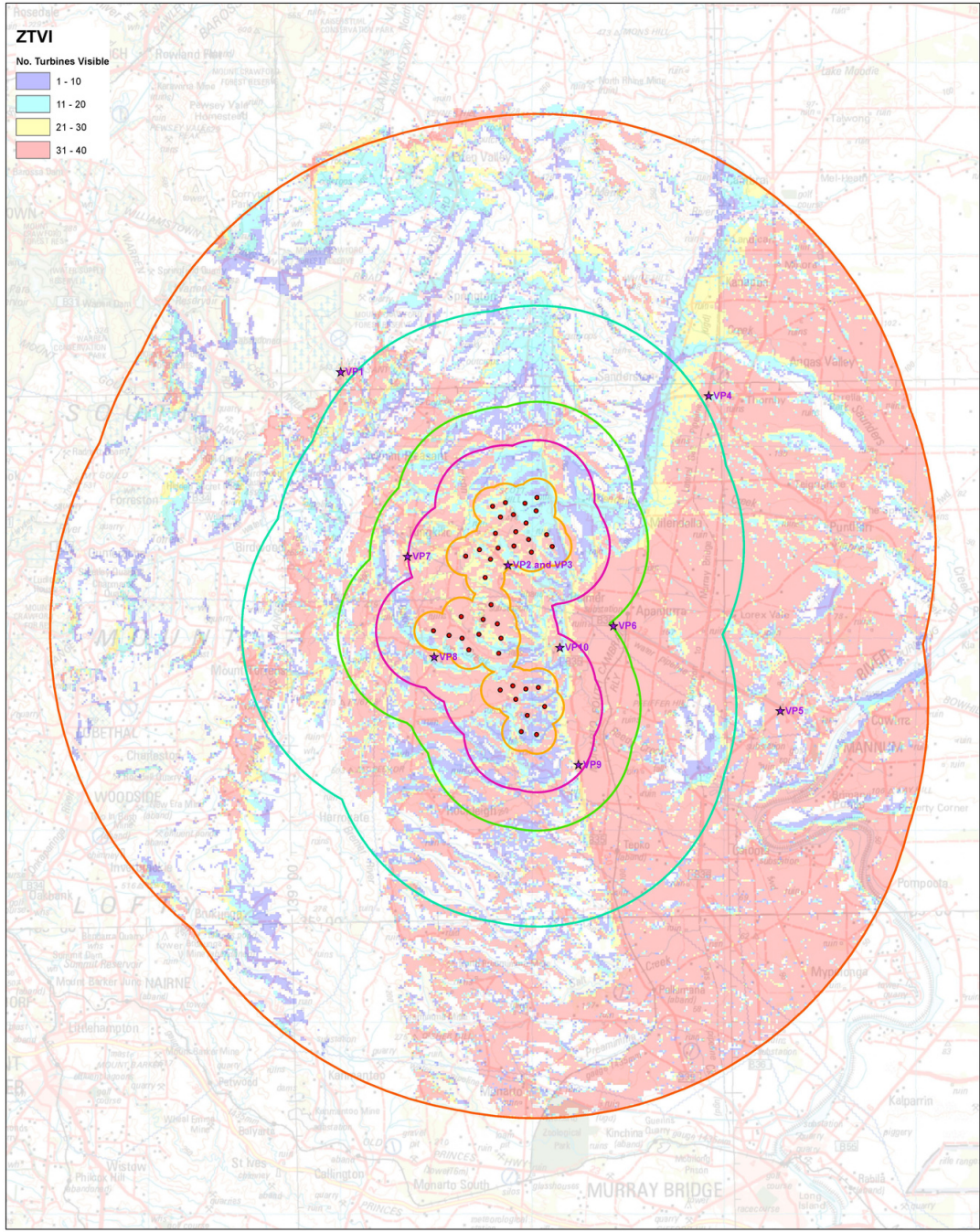


The reduction in dwellings subject to visual impacts under the Varied Project are most significant to the north, where the reduction in turbine numbers will substantially reduce the visual impact from areas surrounding Eden Valley, Cambrai, Marne River and Saunders Gorge (see Figure 2).

Figure 2: The reduced footprint of the Varied Project

The map provides an illustrative depiction of the potential visibility of the wind farm. The map quantifies the extent to which the wind turbines are seen within the wider landscape. The analysis provides a broad indication of where the wind turbines might be visible and the number of wind turbines.

It should be noted that the ZTVI does not take into account the impact of vegetation, buildings or localised landforms as it is based on a 10m contour data set. This means that the visibility of the wind turbines is evaluated within a digital landscape devoid of any screening vegetation or other local features and represents a 'worst case' situation.



Zone of Theoretical Visual Influence
Varied Layout- 40 Turbines- Tip of Blade 220m

- Legend**
- PMWF_WTG_L26_20231018
 - ★ 20230811_ Revised Detail Assessment VP
 - Buffer_1km_PMWF_WTG_L26_20231018
 - Buffer_3km_PMWF_WTG_L26_20231018
 - Buffer_5km_PMWF_WTG_L26_20231018
 - Buffer_10km_PMWF_WTG_L26_20231018
 - Buffer_20km_PMWF_WTG_L26_20231018

ZTVI is based on a combination of 5m and 10m contour data with no vegetation or built form screening. This is representative of worse case scenario

0 1.25 2.5 5 7.5 10 Kilometers

Figure 3: How many turbines will be visible from the surrounding area

Visualisations

Tilt Renewables has prepared photomontages of the Approved and Varied Projects from select locations. These photomontages demonstrate the likely appearance of the turbines in the landscape. See below examples of what visualisations can look like. To see the visualisations prepared for the Varied Design please visit www.palmerwindfarm.com.au. The visualisations on the website are from specific viewpoints and can be zoomed in and out from. You can also download them for future reference.



Figure 4: Example visualisation of the Palmer Wind Farm
To see the visualisations prepared for the Varied Design please visit www.palmerwindfarm.com.au

Visualisations



Figure 5: Example visualisations of Palmer Wind Farm
To see the visualisations prepared for the Varied Design please visit www.palmerwindfarm.com.au.

Night-time lighting

The aviation assessment for the Approved Project and the Varied Project found obstacle lighting should not be required. However, further consultation with the Civil Aviation Safety Authority is required to determine the final requirement for the lighting of tall structures in reduced light conditions.

Tilt Renewables recognises the Project is located within the south-west aspect of the River Murray International Dark Sky Reserve. We will explore alternative solutions to aviation lighting with the planning authorities and CASA. It is our intention to demonstrate we can avoid the installation of any lighting that could disturb the night-time views in the area.

Shadow Flicker

Shadow flicker results from the fluctuating light levels caused by intermittent (moving or changing) shadows. It occurs when the sun passes behind the rotating blades of a wind turbine. This casts an intermittent shadow on the area surrounding the wind turbine. Shadow flicker can cause annoyance when it affects a dwelling over an extended period of time.

The shadow flicker assessment for the Varied Project found no non-associated residents would experience shadow flicker.

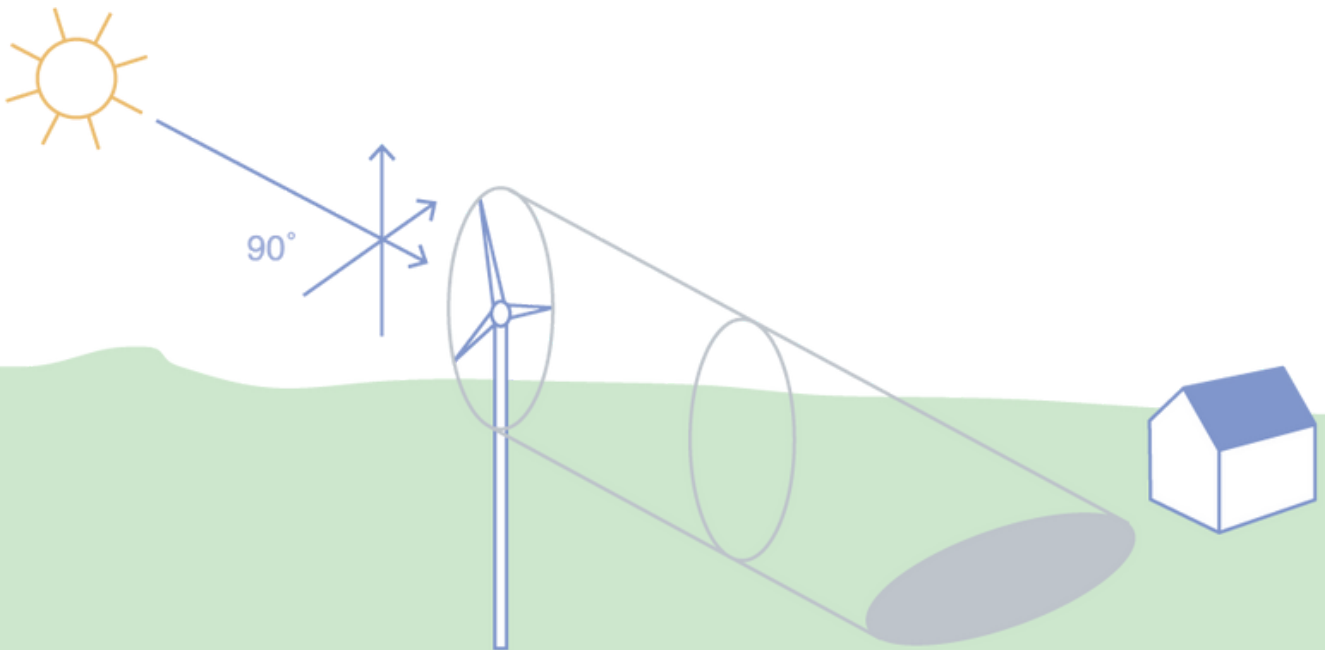


Figure 2: How shadow flicker can impact a dwellings

Mitigation

To mitigate the visual impact of the Varied Project, the following measures will be used:

- Maintaining the setbacks required by the P&D Code for any wind turbine micro-siting
- Visual screening around substations and the operations and maintenance facility
- Minimising light spill from any required lighting of operational facilities

Next steps for the Varied Design

We are currently updating the environmental assessments to reflect the recent reduction from 43-40 proposed turbines. We expect that this reduction in turbines means a reduction in potential impacts or no change.

Once completed we will then submit our Development Application Variation – with the public exhibition likely to occur in early 2024.

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For more information, please visit the project website or contact us:

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