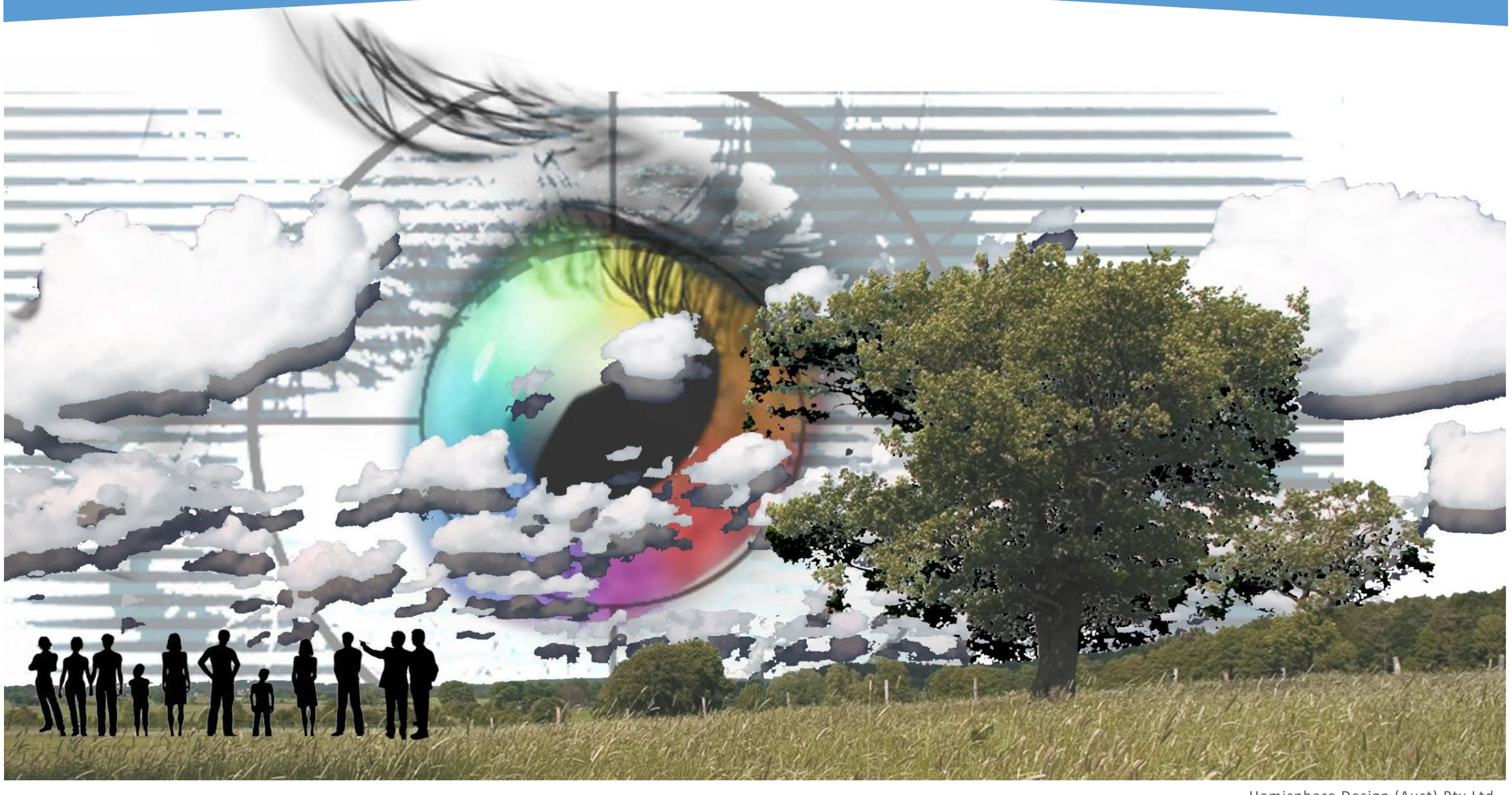
Campoona Wind Farm

Landscape Character and Visual Impact Assessment



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About the author

Stuart Heseltine, Principal, Hemisphere Design (Aust) Pty Ltd. Stuart is acknowledged as a leading practitioner in the area of landscape character and visual impact assessment. In considering each visual impact assessment exercise Stuart undertakes a qualitative landscape character assessment consistent with best practice as prescribed by the Guidelines for Landscape and Visual Impact Assessment (third edition), the Landscape Institute (UK) and Institute of Environmental Management and Assessment (NSW) 2013.

Stuart has successfully applied this methodology to major projects across South Australia, the Northern Territory, New South Wales, Victoria and Western Australia. Stuart has prepared assessments for the Adelaide, Kangaroo Island and Port Lincoln Desalination Plants (SA), the Lincoln Gap (Stage 3) and Barn Hill Wind Farm Developments (SA), the Chaff Mill (SA), Tailem Bend (SA) Stage Two, Frasers Solar Farm (Glengarry North, Victoria), Mid Murray and Berri Solar Farm developments (SA), the Clements Gap BESS (SA), Tyabb BESS (Mornington Peninsula, Victoria) and the Torrens Island Gas Power Station Expansion (SA). In addition, Stuart has recently undertaken visual impact assessments for Crown Development Applications to support the Whyalla Hydrogen Jobs Plan and the Northen Water Supply, projects which underpin the Government of South Australia's commitment to building a world leading renewable hydrogen power plant, electrolyser and storage facility near Whyalla

Stuart provides regular advice on the likely visual impact pertaining to Development Applications lodged in numerous Adelaide metropolitan and regional council areas.

Stuart's particular expertise in undertaking visual assessments is highly sought after for the provision of expert evidence for the Environment, Resources and Development Court (SA).

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Glossary of terms

Term	Description
CL	Contextual Landscape
CVI	Cumulative Visual Impact
EIA	Environmental Impact Assessment
EPBC Act	Environment Protection and Biodiversity Act 1999
HD	Hemisphere Design
ISA	Infrastructure South Australia
kV	Kilovolt
Landscape Assessment	An assessment of the elements that collectively make up the landscape, such as landform, vegetation, land-use and cultural influences
LCVIA	Landscape Character and Visual Impact Assessment
Location(s) / Locality	The position or site of something
MW	Megawatt
PDC	PlanSA. Planning and Design Code
PV	Photovoltaic
Receptor(s)	A place, route, viewer audience or interest group which may receive an effect and require assessment.
Sensitive Receptor (SR)	A Viewpoint or Viewpoint Locality where the observer is more susceptible to the visual impact of the development
Sensitive Receptor Locality (SRL)	An area where there are a number of collocated sensitive receptors
Viewpoint (VP)	A position providing a view of the proposed development from where an assessment is made to consider landscape character and the likely potential for visual impacts which may result as a consequence of the development.
Viewpoint Locality (VPL)	An area where there are a number of collocated viewpoints
Visibility shadow	Areas within the likely ZTVI where it is predicted that the proposed development will not be visible because there are a combination of ridgelines and depressions, specific blocks of vegetation and built form between the viewer and the proposed site that potentially blocks all views
Visual Exposure	A measure of the degree to which an observer at a location can see or potentially see the area to be affected by the proposed development. The visual exposure is subjectively classified as either none, low, moderate or high.
WTGs	Wind Turbine Generators
Zone of Theoretical Visual Influence (ZTVI)	The Zone of Theoretical Visual Influence (ZTVI) is the defined area within which modification to the contextual landscape as a result of the proposed development could be discernible to the naked eye. A nominated radius (e.g. 5km, 10km, 20km etc) from the centre of the proposed site is adopted as the likely furthest extent of the likely ZTVI.

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Executive summary

This Landscape Character and Visual Impact Assessment (LCVIA) has been prepared as one of a number of studies to support Vestas Development Australia Pty Ltd (Vestas) to submit a Licence Application under the Hydrogen and Renewable Energy Act (HRE Act)and EPBC Act Referral for a 500MW grid-connected Stage 1 project for the Campoona Wind Farm, Campoona, South Australia.

The contextual landscape and locality, where the existing 275 kV transmission towers and Yadnarie Substation are prominent visual features, is characterised as being of **low scenic quality** to **moderate scenic quality** and with **low sensitivity to change** to **medium sensitivity to change**.

This LCVIA has determined that the visual impact that is likely to be experienced by the introduction of the Campoona Wind Farm within a 15km radius Zone of Theoretical Visual Influence, when assessed as both a singular and cumulative feature, is considered to range from:

- **Slight adverse impact** at one Sensitive Receptor Locality (SRL 04) to
- **Slight adverse impact** to **moderate adverse impact** at three Sensitive Receptor Localities (SRL 01, SRL 02 and SRL 03).

Outside the Zone of Theoretical Visual Influence, the wind farm will have no discernible impact on the wider landscape.

In considering the South Australian Planning and Design Code and recognising that the installation of large and visually prominent towers are essential infrastructure in facilitating the transmission of power, the proposed Campoona Wind Farm is not at a variance with the relevant Infrastructure and Renewable Energy Facilities (General) desired and performance outcomes.

Clearly the introduction of 70 wind turbine generators will alter the character and visual qualities of the locality and contextual landscape. This visual modification, delivering new 'kinetic' infrastructure elements will, in the author's opinion, stimulate interest and evoke the curiosity of both locals and travellers journeying through the peninsula.

The proposed Campoona Wind Farm will be a visually acceptable addition to an expansive landscape that readily absorbs tall prominent infrastructure elements establishing a best practice example of progressive renewable energy delivery.

Visual mitigation from publicly accessible vantage points is not required based on the assessment; however, screen planting could be implemented within and around the curtilage of a small number of effected residential dwellings if requested during the course of ongoing discussions with the property owner and dwelling occupant(s).

It is the author's opinion that in an expansive landscape where taller features which are more readily absorbed into their surroundings and capture the eye of the observer, the proposed Campoona Wind Farm singularly and cumulatively will be an acceptable feature of the locality and wider contextual landscape.

1. Introduction

This Landscape Character and Visual Impact Assessment (LCVIA) has been prepared to support Vestas Development Australia Pty Ltd (Vestas) to submit a Licence Application under the HRE Act and EPBC Act Referral for a 500MW grid connected Stage 1 project for the Campoona Wind Farm, Campoona, South Australia (herein referred to as The Project).

This LCVIA provides an analysis of:

- the existing landscape character and visual amenity of the contextual landscape and locality for the proposed location of The Project and associated infrastructure;
- the sensitivity of the landscape to change; and
- the likely degree of visual impact as a result of the introduction of The Project.

This assessment determines the likely visual impact of The Project as well as the likely cumulative visual impact when considered in conjunction with the recently installed Eyre Peninsula Link 275 kV powerline and transmission towers.

2. Project area

The Project is located on the central Eyre Peninsula in South Australia approximately 5km north of the agriculturally and tourism-based town of Cleve, approximately 226km southwest of Port Augusta and 143km northeast of Port Lincoln. The Project site is bounded to the south by the Birdseye Highway (B91) and to the east by Cleve Road.

The Project site is located within the District Council of Cleve.

The current site boundary encompasses23,900 km^2. The project site is situated on privately owned land which is predominantly used for broadacre farming.

3. Project description

The following permanent infrastructure is proposed as part of The Project.

The project comprises of a 500MW grid-connected wind farm of 80 wind turbine generators (WTGs) connecting into a new substation at Yadnarie North. Associated infrastructure includes but is not limited to a meteorological mast, telecommunication mast, internal access roads and maintenance lighting.

A conceptual layout has been designed within the site boundary, considering a 1.5km setback from all nearby dwellings. It is anticipated that a 236m tall (to turbine tip) V172 7.2MW wind turbine will be utilised.

4. LCVIA considerations

The following inputs have been considered in the preparation of this assessment:

- Location drawings and indicative layout/construction plans provided (upon commencement of the assessment process, July 2024) by AECOM;
- Aerial photography of the proposed site and locations of associated infrastructure;
- On-site photography of the locality and wider contextual landscape undertaken by Hemisphere Design in July 2024 and Convergen in July 2024.

5. LCVIA assumptions

- WTG towers and blades will be finished in a non-reflective matt paint colour, preferably light grey or white.
- Security fencing will not be installed at the perimeter boundary of The Project and that existing stock fencing along the site boundary and within The Project will remain. Any proposed security fencing will be restricted to the boundary of the proposed new substation.
- Security lighting and after-hours emergency lighting will be installed within the proposed electricity substation site.
- That all transmission lines within The Project will be placed underground except for the relatively short kV line connection from the proposed onsite substation to the adjacent Yadnarie Substation. The visual impact of the connection will be negligible given the length involved and the close proximity to and presence of the existing gantries and towers.
- The requirement for aviation lighting has yet to be determined.
- New highway lighting to facilitate potential new access off Birdseye Highway is not required.
- Internal access roads will comprise of a loose surface gravel material and follow existing grades eliminating the requirement for cut and fill.
- Where practicable existing land use activities will continue or where current activities cease the land will be managed as open grassland.

6. Methodology

The methodology employed for the LCVIA involves consideration of best practice guidelines in qualitatively considering the landscape character and the likely visual impact of a proposal. Relevant statutory policies and/or guidelines are also considered and assessed as part of the LCVIA process. The

qualitative landscape character assessment is undertaken in a rigorous manner consistent with best practice, as prescribed by the *Guidelines for Landscape and Visual Impact Assessment* (Third Edition)[1].

Further to the visual impact assessment a cumulative visual impact assessment is also made. Cumulative visual impacts result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Several developments with insignificant impacts individually may together have a cumulative effect. In order to assess the cumulative visual impact of a development, the process outlined by NatureScot[2] which has been developed in relation to assessing the cumulative landscape and visual impact of onshore wind energy developments is adopted.

Whilst the NatureScot guidance has been developed for assessment of cumulative visual impact of Wind Farms, the principles and considerations can be applied similarly to other developments where infrastructure elements such as battery energy storage systems, solar farms, transmission powerlines, desalination plants and other renewable energy developments are introduced into the landscape.

6.1. Desktop analysis

A preliminary desktop study is undertaken using 'Google Earth' to remotely analyse the geographical area within which the proposed project is located. During this phase, the Zone of Theoretical Visual Influence (ZTVI), Viewpoints and, where relevant, a Visibility Shadow are determined.

The ZTVI is the defined geographical area within which modification to the contextual landscape as a result of the proposal could be potentially discernible or visible.

Within the determined ZTVI, Viewpoints, being positions (and usually publicly accessible locations) providing a view of the proposed development from where an assessment is made, are identified to enable the character assessment of the contextual landscape and locality to be fully considered during the subsequent on-site visit. Viewpoints are selected where the assessor considers notable views of the development may, or are likely, to be received. Factors such as frequency or duration of visitation, whether a private dwelling/property or a publicly accessible location and other site-specific factors are taken into consideration when selecting the Viewpoint. The likely potential for visual impacts which may result as a consequence of the development are also assessed from each Viewpoint to prepare for the on-site visit.

Areas within the likely ZTVI where it is predicted that the proposed development will not be visible, for reasons that may include the presence of a combination of ridgelines and depressions, and/or specific blocks of vegetation and built form between the viewer and the proposed site that potentially blocks all views, enable a Visibility Shadow to be determined within the ZTVI.

The footprint of the Visibility Shadow, identified as relative percentage of the ZTVI, is validated through the on-site assessment.

6.2. On-site analysis

Following the desk-top analysis, one or more on-site visits are made to substantiate, corroborate and refine the assessments made remotely. Viewpoints and other general locations are visited with regard to the ZTVI, and the Visibility Shadow and also to underpin the visual impact assessment.

The on-site assessment identifies areas within the likely ZTVI where it is predicted that the proposed development will not be visible, for reasons that may include the presence of a combination of ridgelines and depressions, and/or specific blocks of vegetation and built form between the viewer and the proposed site that potentially blocks all views.

The on-site assessments also enable identification of Viewpoints that are considered to be Sensitive Receptors (SRs) or Sensitive Receptor Localities (SRLs) to be confirmed; that is, Viewpoints where the observer is more susceptible to the visual impact of the proposed development.

A qualitative assessment of the likely visual impact of the proposal is undertaken from the identified SRs/SRLs and the subsequent degree of likely visual impact of the proposal overall is determined.

Photographs are taken on-site from relevant Viewpoints and other general locations to facilitate graphic presentation of the likely development and are taken using a lens setting that most closely reflects the view as seen by the 'naked eye' (such that there are no changes to the apparent size or distance of the proposal site). The assessment is supported by photomontage imagery to enable visualisation of the proposed development upon the site and Linewire/Photo-negative 'x-ray images' are also included for reference which depict the presence of proposed infrastructure in each photomontage without in-situ and contextual rendering.

6.3. Landscape assessment

Landscape assessment, in contrast to visual assessment, deals with the fabric, character and quality of the countryside. The landscape fabric consists of the elements that make up the landscape, such as landform, land-use and cultural influences. The way these elements fit together in terms of proportion,

[1] Landscape Institute and Institute of Environmental Management and Assessment. *Guidelines for landscape and visual impact assessment (3rd ed.).* (2013). Routledge. https://doi.org/10.4324/9780203436295.

[2] NatureScot. (2021) *Guidance – Assessing the cumulative landscape and visual impact of onshore wind energy developments.* https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

pattern, scale, etc., gives rise to a particular landscape character. Changes to the fabric and character of a particular landscape may affect the perceived value of that landscape, giving rise to changes in its quality.

The landscape character assessment encompasses both the wider contextual landscape and the locality, which is visually more difficult to define and within which the proposed development is located.

This characterisation process establishes a 'baseline' upon which judgments about the potential effects of the proposed development can be made. The following guiding definitions are applied to determine the landscape assessment:

Table 1: Landscape character definitions

High scenic quality	Areas and localities which exhibit an exceptionally strong positive character with valued features which combine to give an experience of unity, richness and harmony. Within this definition 'exceptional' could apply where an area is also deemed to be worthy of a legislative designation, e.g. a National Park.
Moderate scenic quality	Areas which exhibit a strong positive character with valued features with evidence of a visually acceptable level of alteration/degradation/erosion resulting in a location of more mixed character.
Low scenic quality	Areas with a generally positive character with fewer valued features with evidence of a visually acceptable level of alteration/degradation/erosion resulting in a location of more mixed character.
No scenic quality	Areas with a little or no positive character with few or no valued features with evidence of a visually unacceptable level of alteration/degradation/ erosion resulting in a highly modified location of little character.

6.4. Landscape sensitivity to change

The landscape characterisation process also enables an assessment of the landscape 'sensitivity to change', that is the ability of the landscape to accommodate the visual change associated with the proposed infrastructure, for both the wider contextual landscape and the locality.

> *"Landscape sensitivity may be regarded as a measure of the resilience, or robustness, of a landscape to withstand specified change arising from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value."*[3]

For example, a landscape that displays a high 'sensitivity to change' would not be able to absorb a development of the nature proposed by the development without irreparable consequences and impacts on the inherent character and visual amenity.

The following definitions are applied to determine the landscape's sensitivity to change:

Table 2: Landscape sensitivity to change definitions

High sensitivity to change	Key characteristics and qualities of the landscape are highly sensitive to change from the development type. Development would significantly conflict with several of the assessment criteria with severe adverse impacts likely to arise.
Medium sensitivity to change	Some of the key landscape characteristics or qualities of the landscape are sensitive to change from the development type. There is some ability to accommodate development in some situations without widespread or severe changes to the landscape; the development type relates to some aspects of landscape character.
Low sensitivity to change	Fewer of the key characteristics and qualities of the landscape are sensitive to change from the development type. There are opportunities to accommodate the development type in most locations without widespread or severe effects on the assessment criteria; the development type relates to many aspects of landscape character.
Negligible sensitivity to change	Key characteristics and qualities of the landscape are unlikely to be adversely affected by the introduction of the development type. The development type relates well to the assessment criteria and change may be accommodated without widespread significant adverse impacts on the landscape.

The factors used to determine the landscape sensitivity include:

- Pattern (simple or complex) and scale of the landscape;
- Existing land use;
- Visual enclosure and openness of views;
- Scope for mitigation which would be in character with the existing landscape; and
- Value of the modified or natural visual landscape and 'sense of place'.

In general landscape sensitivity:

- Decreases when the viewing time is infrequent and becomes shorter; however, repetitive viewing even if of a short duration will increase sensitivity;
- Decreases as distance from the viewer to the development increases;

[3] Landscape Institute and Institute of Environmental Management and Assessment. Guidelines for landscape and visual impact assessment (3rd ed.). (2013). Routledge. https://doi.org/10.4324/9780203436295.

- Varies depending on the activity of the viewer, for example a resident within the confines of their dwelling at rest as compared to a rural hiker;
- Increases where a view is enjoyed and highly valued by the immediate community;
- Increases where a view is seen by many viewers;
- Increases if the view is seen from residences; and
- Increases if the visual landscape plays a part in tourist or recreational activities.

6.5. Likely visual impact assessment

Determining the likely visual impact of a development proposal in most regional locations presents obvious challenges where properties are often located some distance off major roads on private land away from publicly accessible locations. Where access is not sought to enter private land to obtain a view(s) that will best represent a potential visual impact, assumptions have to be drawn from views obtained from public locations that best typify the view and consequent visual impact that would likely be received from within the curtilage of the dwelling located on such 'remote' properties.

The following factors are considered when assessing the likely visual impact of the visual features of a proposed development on the SRs and SRLs:

- The visual qualities of the view and the duration and angle of the view in relation to the main activity of the viewer;
- The distance of the viewpoint from proposed visible infrastructure;
- The extent of the area over which the changes would be visible and the scale of the change in the view (loss or addition of features, changes in composition, proportion of view affected);
- The degree of contrast in form, scale, mass, line, height, colour and texture introduced into the view by the development where existing development is conspicuous;
- The duration and nature of the effect (temporary, permanent, intermittent);
- The numbers and types of viewers affected; and
- The potential for variety of infrastructure elements, their design or their layout close to each other, particularly when sited in an undulating landscape which has the potential to cause visual conflict, confusion and/or complexity.

The likely visual impact is determined before any potential mitigation is considered. The following criteria are applied to describe the likely visual impact of a proposed development at the SRs and SRLs:

Table 3: Likely visual impact definitions

Substantial adverse impact	where the scheme would cause a significant deterioration in the existing view
Moderate adverse impact	where the scheme would cause a noticeable deterioration in the existing view
Slight adverse impact	where the scheme would cause a barely perceptible deterioration in the existing view
No change	no discernible deterioration or improvement in the existing view
Slight beneficial impact	where the scheme would cause a barely perceptible improvement in the existing view
Moderate beneficial impact	where the scheme would cause a noticeable improvement in the existing view
Substantial beneficial impact	where the scheme would cause a significant improvement in the existing view

These criteria are also applied to the consideration of the cumulative visual impact.

6.6. Consideration of likely Cumulative Visual Impacts

The following widely accepted definition of cumulative impacts, presented by NatureScot[4], is adopted for the purpose of assessment of likely cumulative visual impact:

> *[An assessment of] 'the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together.'*

Factors that contribute to the cumulative impact of development on landscape and visual amenity include:

- the distance between individual developments;
- the distance and area over which they are 'intervisible';
- the overall character of landscape and its sensitivity to development;
- the siting and design of the elements and the development themselves;
- the way in which landscape is experienced.

[4] NatureScot. (2021) *Guidance – Assessing the cumulative landscape and visual impact of onshore wind energy developments.* https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

"The magnitude of cumulative change may be different from the magnitude of change brought about by the development when considered on its own. The aim of the cumulative assessment is to identify the magnitude of additional cumulative change which would be brought about by the proposed development when considered in conjunction with other wind farms in the wider contextual landscape."[5]

The cumulative visual impact assessment process advocates that the purpose of such an assessment is to identify the significant cumulative impacts arising from the proposed development and suggests the following parameters should be considered in assessing likely cumulative visual impact.

"Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts':

Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Assessments should consider the combined effect of all [developments] which are (or would be) visible from relevant viewpoints. Combined visibility may either be in combination (where several [developments] are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the various [developments]).

Sequential impacts occur when the observer has to move to another viewpoint to see different developments. Sequential impacts should be assessed for travel along regularly-used routes like major roads, railway lines, ferry routes, popular paths, etc. The magnitude of sequential effects will be affected by speed of travel and distance between viewpoints.

Two [developments] need not be intervisible – or even visible from a common viewpoint – to have impacts on the landscape experience for those travelling through, or living in an area. For example, it may be necessary to consider the cumulative impacts of [developments] on users of scenic road routes, or routes for walkers, cyclists and other recreational users, along their full length within the agreed study area."[6]

The likely cumulative visual impact assessment also considers the magnitude of the cumulative change, which depends on "the scale, nature, duration and frequency of combined and sequential views (glimpses or more prolonged views; oblique, filtered or more direct views; time separation between sequential views)". This requires assessment of:

- the number of other developments which would be visible in the landscape in each of the different scenarios (existing, consented or application stage);
- direction of view to each of the developments;
- distance to each of the developments;
- the number and height of infrastructure elements at each of the developments – which may also be expressed as the horizontal and vertical angle occupied by elements – and any access tracks and grid connections;
- identification of key routes and journey scenarios, including impacts on key recreation resources such as long-distance routes, coastal paths and core paths;
- duration of the change (i.e. age of constructed developments and the planning status of the other development projects).

In summary, Cumulative Visual Impact Assessments should be carried out where a proposed development may be seen in conjunction with other developments, to determine whether the introduction of additional infrastructure elements significantly alters the prevailing character of the contextual landscape and or the locality within which the development will be constructed.

7. Landscape Character Assessment of The Project

The proposed WTGs are to be erected on privately owned land approximately 5km north of Cleve. The Project site is bounded by the Birdseye Highway and by Cleve Road.

Prior to commencing the on-site assessment, a desktop study was undertaken that established a 15km radius from the centre of The Project for the likely Zone of Theoretical Influence (ZTVI), given the undulating nature of the contextual landscape and the proposed height of the WTGs at 236m (refer to Figure 1 – Contextual Landscape and Viewpoints).

The desktop study also identified areas from within the ZTVI where proposed infrastructure will likely fall within the visibility shadow. Using Google Earth aerial photography, Shuttle Radar Topography Mission (SRTM) data and where available Google Earth 'street view', based on the height and dimensions of the proposed WTGs a visibility analysis was undertaken to identify the visibility shadow within the 15km ZTVI where either the whole WTG, as part of a collocated collection, is likely to not be visible or where part of the WTG rotor blade only will likely be only partially visible.

Viewpoints both within the ZTVI and further afield were identified for on-site consideration and assessment made to both define the landscape character of the contextual landscape and locality and to determine the likely presence of sensitive receptors within the ZTVI. The desk-top study identified a total of nine (VP 01 – VP 09) publicly accessible Viewpoints for consideration and assessment.

The desktop study identified that from locations to the northwest, north and northeast of The Project and in particular around and between Campoona and Mangalo, publicly accessible views will be

[5] NatureScot. (2021)

[6] NatureScot. (2021)

restricted to glimpsed views only to the south, southwest and southeast through roadside native vegetation at the occasional vantage point along the less frequented and unsurfaced access roads.

Within this contextual landscape, the absence of secondary surfaced roads to the northwest, north, and northeast of The Project would suggest the frequency of travellers journeying through this area would be extremely low and infrequent vehicle use would likely be comprised mainly of locals accessing rural properties and holdings. Similarly, the landscape to the south of Birdseye Highway at the extent of and beyond the ZTVI similarly has few surfaced roads, indicating travellers would be mainly locals. This assessment was corroborated through the site visit.

A site visit was undertaken by staff of Hemisphere Design in July 2024. The weather was fine at first, with blustery intermittent rain later in the day and visibility was initially high diminishing to poor due to the weather. Photographs were taken at selected viewpoints to underpin the landscape character and visual impact assessment. Photographs have been taken using a 35mm Single Lens Reflex (SLR) camera with an approximate lens setting of 50mm.

From the Viewpoints and other general locations visited, the landscape character of the locality was reaffirmed, and preliminary consideration given to the potential visual impacts which may result as a result of The Project.

The on-site analysis also substantiated and corroborated the initial findings of the desktop study with regard to the definition of both the ZTVI and 'visibility shadow' where a combination of the presence of mature trees over undulating hills between the viewer and The Project potentially blocks all views. The footprint of the visibility shadow has been determined as approximately 20% of the ZTVI.

Four Viewpoints were subsequently each identified as a Sensitive Receptor (SR) or Sensitive Receptor Locality (SRL), being locations where potential views of the more visually prominent infrastructure elements of The Project are likely to be obtained from publicly accessible locations (shown in Figure 1: Contextual Landscape and Viewpoints).

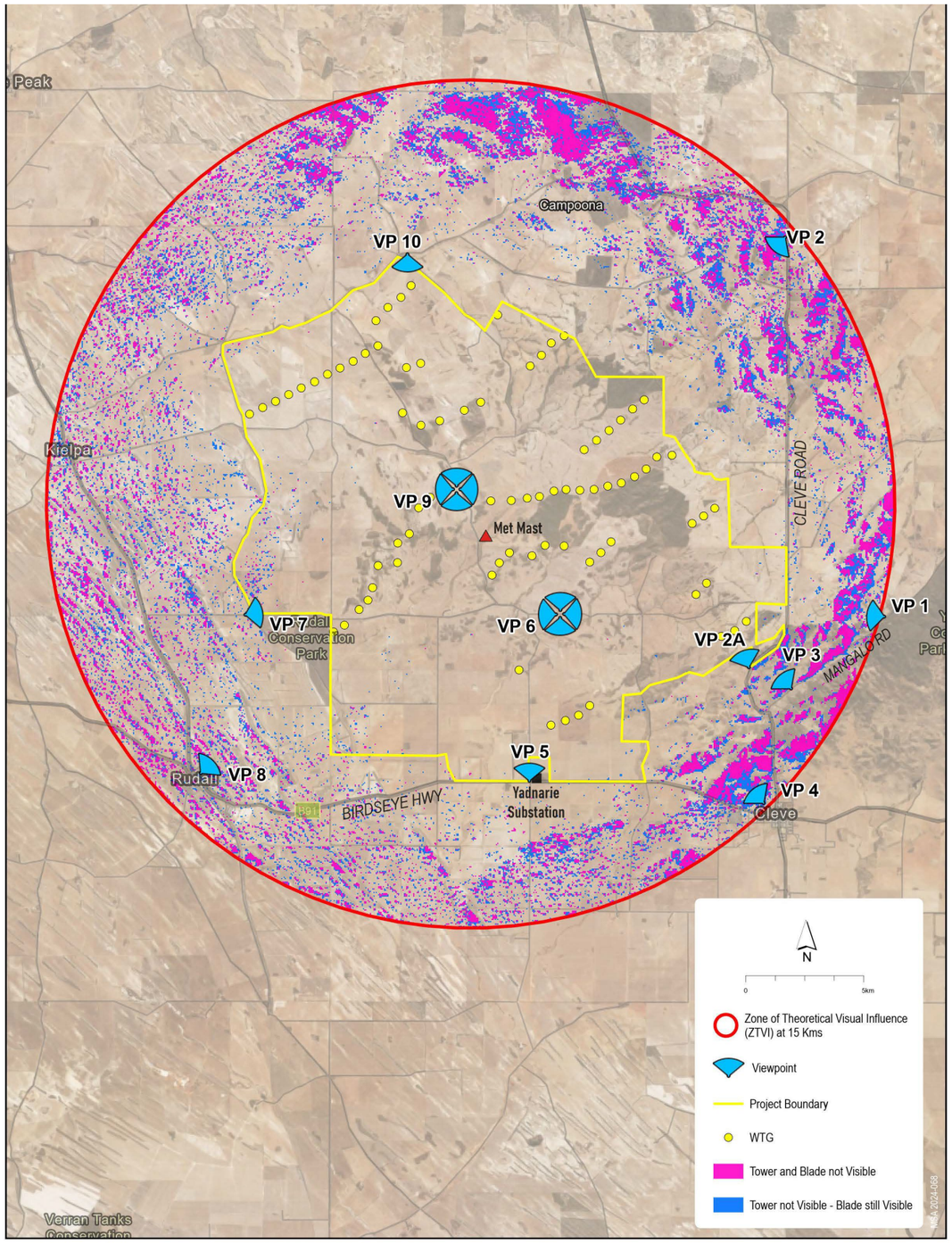

Figure 1: Contextual Landscape and Viewpoints

The remaining Viewpoints considered in the desk-top study and visited during the on-site visit were locations from which the presence and likely visual impact of The Project will be either largely indiscernible or have low frequency of visitation and were hence not assessed in any further detail.

Image 1: View northeast from Arno Bay towards The Project

7.1. Contextual landscape

The contextual landscape can be broadly defined as the area contained within the 15km ZTVI, which encompasses the township of Rudall to the west, the Yeldulknie Conservation Park to the east, the Birdseye Highway to the south and the more remote areas around Campoona to the north.

The Eyre Peninsula Landscape Region extends from Whyalla in the east to the Nullarbor Plain in the west and extends over the coastline from the upper Spencer Gulf to the Great Australian Bight. It is divided into five landscape subregions based on areas of similar landscape and land uses.[7] The Project is located within the Central Eyre subregion.[8] Central Eyre's wide-open landscapes, parks, scrub and geology are highly valued for their wilderness, wildlife and picturesque views. Much of the mallee that dominated the area has been cleared for agriculture, with remnant vegetation located in numerous conservation parks which includes the Yeldulknie Conservation Park to the immediate southeast of The Project.

The landscape of the Eyre Peninsula is one where the resident population is largely congregated within small coastal townships purposefully located along the eastern and western foreshores. However, Cleve, the regional centre, is located on the southeastern edge of The Project ZTVI and as such is considered as part of the wider contextual landscape for the purposes of this study.

Movement through the landscape is facilitated along the principal roads of the Birdseye Highway and Cleve Road. Birdseye Highway traverses the landscape in a west-east direction, connecting the west coast settlement of Elliston, passing through Lock and Cleve, to the east coast of the peninsula at the Lincoln Highway (B100). Cleve Road, running along a north-south axis, connects the township of Cleve to the Eyre Highway (A1) and the township of Kimba to the north.

The contextual landscape is dotted with small, family-owned farmsteads, the quintessential feature of a mainly expansive planar landscape punctuated by rolling hills and rock outcrops. The farmsteads are located on large land holdings, set back from a network of mainly single-lane gravel roads which are likely to be frequented only by locals and residents accessing their rural properties.

Image 2: 1275 Cleve Road: A typical family farmstead where the dwelling is concealed from the road by evergreen plantings. The 275 kV transmission towers are prominent infrastructure features.

Within this contextual landscape the contrasting tones of the iridescent green and ochre-coloured sprawling fields dotted with the occasional patches of olive-grey green vegetation are juxtaposed against a patchwork of blue sky and cloudy and grey horizon. This array of colour contrast reinforces the enormousness of the modified agricultural landscape.

It is a highly modified environment adapted for pastural and cropping activities. The eye of the observer is drawn across an undulating landform where the swiftly moving cloudscape creates a dynamic shadow play of forms and colours. Beyond the rolling foreground the sweeping panoramas draw the eye of the observer across the expansive agricultural surroundings to the distant coastal horizon and enveloping skyline. To the west, rising land comprising of contiguous swathes of trees and shrubs over crests and falls create a pleasing vegetative foil that silhouettes the horizon.

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[7] South Australia's landscapes are managed by regional landscape boards in accordance with the *Landscape South Australia Act 2019*. The Act promotes sustainable and integrated management of the State's landscapes and makes provision for the protection of the State's natural resources.

[8] Central Eyre Subregional Description. Landscape Plan for Eyre Peninsula Appendix B. Landscape South Australia

Within this contextual landscape avenues of evergreen natives flanking the road corridor of Birdseye Highway and copses of mid-ground trees planted around intermittent farmsteads draw the eye of the observer across a foreground of open planar fields and an expansive vista punctuated with copses of native vegetation following remnant creek lines providing mid and fore ground visual 'incident,' briefly capturing and holding the eye of the observer.

It is a contextual landscape experienced through a narrative of serial visions, where journeys both east-west along the Birdseye Highway and north-south along Cleve Road reveal a landscape that has adapted and evolved through agricultural activity. Whilst it could not be described as a landscape of notable visual charm it is a landscape without a myriad of the often-accompanying visual agricultural production clutter. It is a landscape weaved through a 'monumentality' of scale, and a quintessential sense of place which underpins both the simplicity, and, in some instances, remoteness treasured by residents and visitors alike.

It is a landscape where, within panoramic vistas, scale is distorted and large single storey-built form elements such as agricultural barns appear smaller than their actual size. Where tall vertical elements are prominent; the recently erected 275 kV transmission towers running north-south through the landscape of the peninsula, sharply juxtaposed against the hills face backdrop are imposing and intrusive, and form a 'mechanical procession' which, along with the taller latticed towers, gantries and stobie poles collection at Yadnarie Substation dominate the vista along the Birdseye Highway corridor.

Image 3: Birdseye Highway at Yadnarie Substation where tall, latticed towers of both the substation and 275 kV transmission line and stobie poles flanking the road pavement are intrusive

To the east beyond the project area the more heavily vegetated landscape flanking the undulating Mangalo Road retain a more natural landscape quality where large swathes of mature native vegetation traversing the undulating creases and folds of the crests and valley announce arrival at the Yeldulknie Conservation Park to the north and east. A more enclosed landscape where the eye of the observer is afforded only infrequent glimpsed views beyond the immediate foreground.

7.2. Locality

The locality can be broadly divided into four localities, which encompass the western, southern, eastern, and northern extent of The Project area.

The western and southern localities to the north of the Birdseye Highway are accessed by a series of smaller interconnected and largely unsurfaced roads, such as Syvertsen Road and Dreckow Road which access the network of field patterns within and around the centre of the Project Area. Properties comprising of farmsteads with residential dwellings are set back some distance from the unsurfaced roads and arranged in a linear east-west fashion off Syvertsen Road and Dreckow Road and in a north-south orientation along Kielpa-Gum Flat Road. Within the centre and northern parts of these two localities the immediacy of the somewhat abrupt crests and falls on the rising land traversing the network of unsurfaced roads creates a series of smaller compartmentalised spaces of more human scale enclosure which is at a variance with the more open planar aspects of the landscape south of Birdseye Highway stretching east to the coastal foreshore. Within these compartmentalised spaces, the eye of the observer is drawn up over verge side native vegetation and beyond the immediate foreground in a 360-degree panorama.

Within the centre of these localities occasional elevated views to the south and southeast draw the eye of the observer to the distant coastal landscape where large white grain silos provide incident creating focal points for reference and orientation.

The western locality unfurls across a broad planar expanse of cropped fields punctuated with elongated copses of native trees and shrubs to the township of Rudall. The intermittent tracts of vegetation mask views beyond the immediate foreground directing the eye of the observer upwards to the enveloping horizon.

Image 4: View southeast from Syvertsen Road to the distant coastal foreshore. The grain silos are notable focal points.

The eastern locality is dissected by the rising north-south axis of Cleve Road where several residential properties, separated by significant distances are set back from either side of the road corridor. Where roadside vegetation is absent the elevated corridor affords expansive views west across a foreground mosaic of undulating field patterns with brightly contrasting colours to the rising crests and fall of The Project. Intermittent swathes of densely planted natives camouflage the landform creating a vegetative foil that silhouettes the horizon. A landscape defined through agricultural adaptation and the functionality of movement and journey where the procession of 275 kV transmission towers is incongruous.

The northern locality, broadly defined as the area within the vicinity of Plane Road, is accessed via a limited number of narrow single-lane unsurfaced roads and used by residents accessing their properties and farmers accessing landholdings. Residential properties to the north are more widely dispersed and again well set back from the unsurfaced road. A quintessential highly modified rural locality bereft of visual stimulation.

Each locality is typical of the wider contextual landscape where the small scale, low prostrate form of agricultural barns/sheds and single-storey homesteads are set within large allotment farmsteads dotted around the subtly undulating pastural landscape. The built form is visually 'incidental' in a landscape where expansive open views draw the eye of the observer across open fields dissected by swathes of mature native vegetation to the distant horizon.

Image 5: View from Syvertsen Road north-east. The sense of remoteness is amplified by the network of single lane unsurfaced access roads that roll through and over the contextual landscape.

Image 6: Another view from Syvertsen Road north-east.

It is a contextual landscape where the pre-settlement environment has been extensively modified for agricultural production and to accommodate incongruous utilities infrastructure, for example the Eyre Peninsula Link 275 kV transmission line and the existing Yadnarie Substation, to support the growth of regional townships. It is the author's opinion the contextual landscape and locality is a largely disenchanting one of **low scenic quality** to **moderate scenic quality** and with **low sensitivity to change** to **medium sensitivity to change**.

8. Likely Visual Impact Assessment

Access was not sought to enter private land to obtain a view(s) that will best represent a potential visual impact from a private dwelling, thus assumptions are drawn from views obtained from public locations that best typify the likely view experienced by property occupants. As highlighted in the methodology, this presents assessment challenges; however, it is the author's opinion this LCVIA assessment is an accurate and fair presentation of the potential likely impacts given these obvious constraints.

The majority of residential properties likely to be impacted are located some distance off access roads on private land and away from publicly accessible locations.

Views of the WTGs will be mainly restricted to within the curtilage of The Project boundary and along a short section of the Birdseye Highway to the west of Cleve and from glimpsed views obtained from more open, elevated vantage points along Cleve Road.

Given the nature of wind farm developments as opposed to, for example solar farm developments where PV panels are prostrate forms blanketing the landform rarely exceeding heights above single-storey dwellings, The Project, comprising of tall columnar features placed at regular intervals and arranged in linear rows will be a conspicuous feature. When viewed from multiple viewpoints within The Project boundary and immediately adjacent The Project boundary from private and publicly accessible vantage points The Project will be visually obvious and difficult to conceal.

Thus, The Project will be a notable and highly conspicuous infrastructure feature across the locality.

The assessment of character and likely visual impact at Viewpoints made on-site determined the following.

VP 01 - Yeldulknie Conservation Park: A well patronised regional open space recreational facility where a network of trails cross through and along the densely vegetated expanse of native trees and shrubs. At over 15km to the west from the park trail head and car park The Project is inconspicuous. The viewpoint is not considered to be a Sensitive Receptor.

VP 02 and VP 02A- Cleve Road: A primary road connecting Cleve to the Eyre Highway and distant townships. Elevated vistas to the west afford views across the rolling topography where the procession of the recently erected 275 kV transmission line is highly intrusive. The journey presents numerous vantage points from where The Project will be conspicuous. A number of residential properties are likely to receive views of the Project.

The viewpoint is typical of the Sensitive Receptor Locality and is considered further in the following section.

Image 7: Cleve Road looking northwest

VP 03 - Mangalo Road: This viewpoint is typical of the southeastern extreme of the ZTVI. Journeying north along Mangalo Road towards Yeldulknie Conservation Park the landscape is defined through the heavily vegetated crests and 'creases and folds' of the undulating landscape flanking both sides of the road.

To the north where Mangalo Road crests before arriving at the conservation park trail head and car park, potential glimpsed views only of part of the collection of WTGs to the west may be obtained from No. 439 Mangalo Road a single storey dwelling on a large block to the west of the Road.

South on Mangalo Road the more open aspects of pastural land afford permeated glimpsed views through mature vegetation of both native and evergreen tree and shrub species to large allotments with single storey residential properties set back from the road. At this lower level The Project is inconspicuous being concealed by the vegetated rising land to the west.

Image 8: Mangalo Road looking northeast

Image 9: Mangalo Road looking southwest near access to 439 Mangalo Road

The viewpoint is not considered to be a Sensitive Receptor.

VP 04 - Cleve township, northwest: Viewpoint west from Second Street across the Showgrounds and RV camping park. A foreground of mature natives and undulating mid ground will preclude views of The Project. The viewpoint is not considered to be a Sensitive Receptor.

Image 10: View from Second Street looking northwest

VP 05 - **Birdseye Highway east bound after Syvertsen Road:** A panorama north to The Project typical of the numerous glimpsed views the traveller will receive when journeying along Birdseye Highway passing the array of WTGs which will be prominent.

Image 11: View across paddock with access road from Birdseye Highway

The viewpoint is typical of the Sensitive Receptor Locality and is considered further in the following section.

VP 06 - Dreckow Road west: Viewpoint within the vicinity of No. 832 Dreckow Road. This is a Sensitive Receptor Locality and is considered further in the following section.

VP 07 - Syvertsen Road intersection with Old Darke Peak Road: The heavily vegetated northern and southern roadside verges focus the eye of the observer along a vista to the undulating topography to the east. Intermittent glimpsed views of the higher aspects of the nearest WTG tower and blades are likely along and within the vista. A location accessed infrequently by locals only.

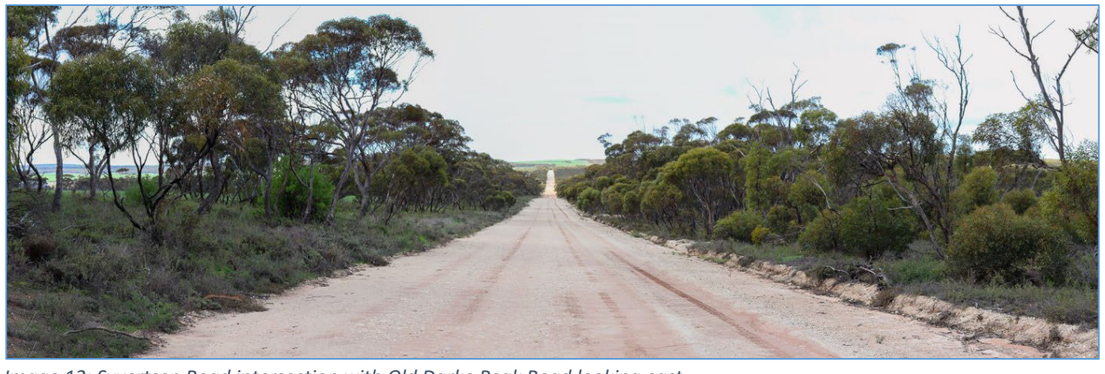

Image 12: Syvertsen Road intersection with Old Darke Peak Road looking east

An outlying location and not considered to be a Sensitive Receptor.

VP 08 - Rudall Community Sports Club and Oval at the western edge of the 15km ZTVI: Where swathes of mature native trees and shrubs foil the eastern vista, the nearest collection of WTGs are over 7km to the northeast and likely to be indiscernible within the panorama. The viewpoint (and rest of township of Rudall) is not considered to be a Sensitive Receptor.

Image 13: Rudall Community Sports Club looking east

VP 09 - Kielpa-Gum Flat Road: A location typical of the views likely to be received by residential properties to the north of The Project. The array of collocated WTGs and meteorological mast will be highly conspicuous in all directions.

The viewpoint is typical of the Sensitive Receptor Locality and is considered further in the following section.

VP 10 - Plane Road: A largely inaccessible locality likely only frequented by residents accessing properties that are intermittently located along and set well back from Plane Road. From Plane Road most properties are concealed from view by mature boundary plantings of native and evergreen trees which are likely to restrict views from the curtilage of the dwelling. Glimpsed views of the blades and upper towers of the collection of WTGs will likely be obtained through roadside verge plantings across the cropped land over a rising foreground to the immediate south.

Image 14: Plane Road looking east

Image 15: Plane Road looking south

An outlying location and not considered to be a Sensitive Receptor.

The Viewpoints identified as Sensitive Receptors were further assessed in detail to consider the likely visual impact on each Viewpoint.

Table 4: Viewpoints identified as Sensitive Receptors

Viewpoint 02A	• Sensitive Receptor Locality 01 (SRL 01)
Viewpoint 05 Birdseye Highway west bound after Syvertsen Road	• Sensitive Receptor Locality 02 (SRL 02)
Viewpoint 06 Dreckow Road west	• Sensitive Receptor Locality 03 (SRL 03)
Viewpoint 09 Kielpa-Gum Flat Road	• Sensitive Receptor Locality 04 (SRL 04)

These Sensitive Receptor Localities are illustrated in Figure 2 and their further assessment outlined in Section 8.2 below.

The register of onsite activities undertaken by Convergen in preparing the photomontages is appended at Appendix A.

8.1 Likely Visual Impact beyond the ZTVI

Whilst the proposed WTGs may likely be notable at certain vantage points beyond the ZTVI to the northwest, north and northeast, and south of the Birdseye Highway, the number of receivers from such publicly accessible locations would be negligible. Further, given the view of WTGs will diminish in clarity over distance, the proposed WTGs will be largely indistinguishable or indiscernible from the extent of and beyond the ZTVI.

The townships of Cleve and Rudall fall on the edge of the 15km ZTVI, the more undulating vegetated landform that lies between each town and The Project will largely conceal views of the WTGs.

Consideration has also been given to the potential impact on the wider contextual landscape from outside the ZTVI where the coastal location of Arno Bay is located approximately 31km to the south. The assessment determined that The Project will be inconspicuous and that should aviation navigation lighting be installed on the rotor hub WTGs at a height of 160m, any potential residual glow will be indiscernible.

The Project will be inconspicuous at most ground level locations which fall outside the 15km ZTVI. On exceptionally clear days The Project may be faintly discernible from greater distances beyond the 15km ZTVI; however, such views will be largely inconsequential within the panoramic vista and at such distances, the likely visual impact of The Project is considered to be one of **no change**.

Therefore, it is the author's opinion that these areas do not require further detailed assessment.

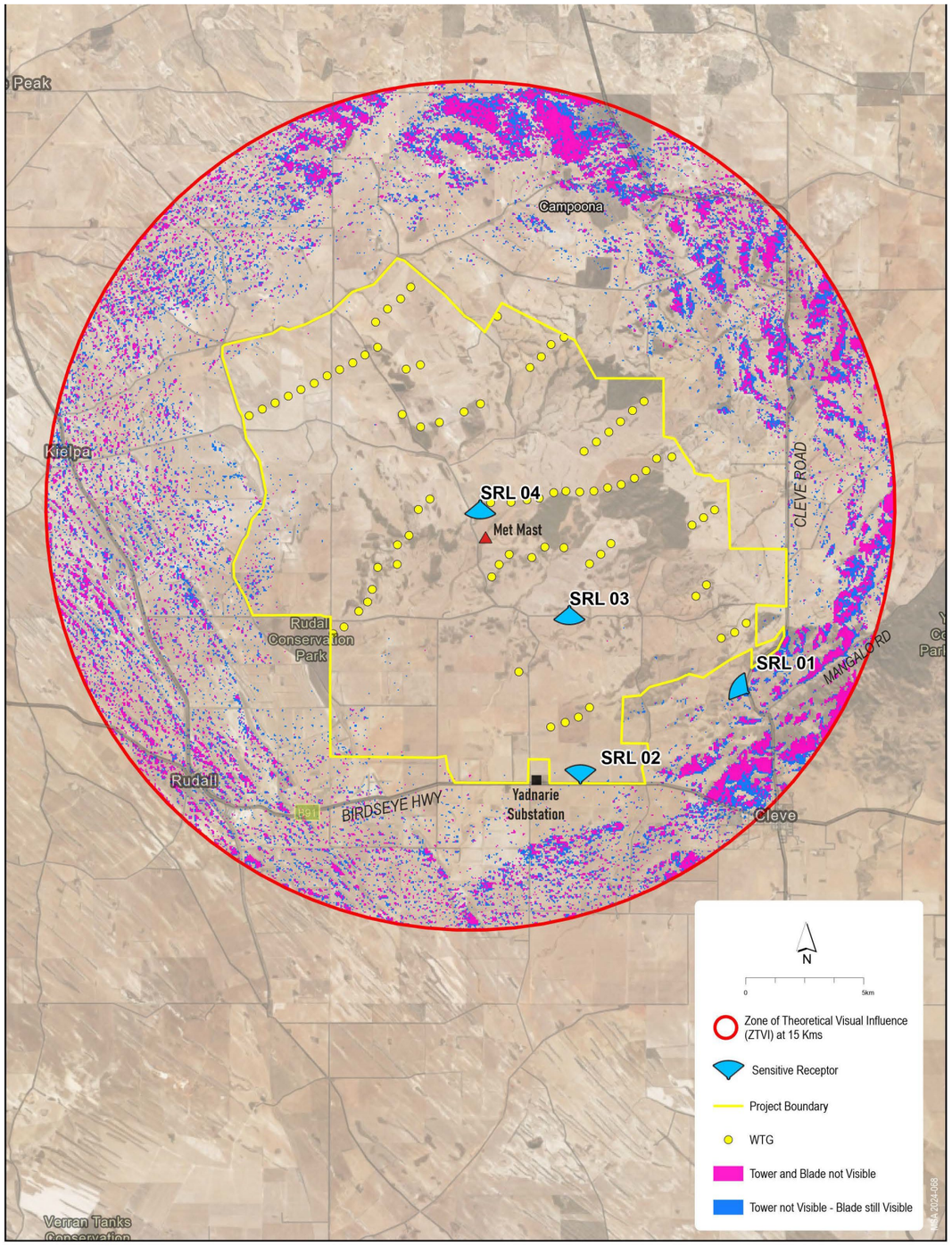

Figure 2: Sensitive Receptor Localities with Zone of Visual Influence and Visibility Shadow

8.2 Assessment undertaken at the Sensitive Receptors

Sensitive Receptor Locality 01 (SRL 01)

Image 16: VP 02A/SRL 01: View from Cleve Road looking west to northwest

Viewpoint	Location	View Direction	Distance from Project Site(s)
Viewpoint 02A (VP 02A)	Cleve Road northbound approximately 2km north of intersection with Mangalo Road	West to northwest through 180 degrees	12km to The Project centre; 1.6km to nearest WTG

Landscape and setting	Visual exposure at receptor
Expansive undulating fields where the iridescent green of crop growing is punctuated by large tracts of grey green native vegetation which silhouettes the horizon. A striking colour contrast where the pale blue horizon juxtaposed against the sprawling palette of grey green hues and ochre patches draws and captures the eye of the observer whilst journeying through the landscape along the length of Cleve Road to an end destination.	Moderate to high across a 180˚+ degree panorama where the mid ground of vegetated crest and falls truncate the vista and preclude views to the western aspects of The Project and project boundary.

Sensitive Receptor Locality 01 (SRL 01)

Image 17: VP 02A/SRL 01: Photomontage view of The Project from Cleve Road looking west to northwest

Predicted visual impact	Mitigation
Whilst the impact of new columnar features and the kinetic activity of rotor blades will be notable infrastructure additions punching the skyline across the horizon, the scale and visual simplicity of the landscape, the continuation of existing lands use activities and retention of the expanse of undulating fields where the iridescent green of crop growing is punctuated by large tracts of grey green native vegetation will ensure the prevailing 'rural' appearance of the locality will remain largely intact. The retention of low-level post and wire agricultural fencing will ensure the panoramic vista across the contextual landscape remains largely unblemished. From numerous vantage points along Cleve Road, it could be opined that The Project may provide a moment of visual 'incident' narrating the traveller's journey through the wider contextual landscape. In a contextual landscape and locality of **low scenic quality** to **moderate scenic quality** and **low sensitivity to change** to **medium sensitivity to change** where the existing Eyre Peninsula Link transmission towers are barely discernible, both singularly and cumulatively The Project will have a **slight adverse impact** to **moderate adverse impact.**	Partial views of aspects of The Project from within the curtilage of a number of dwellings located on large properties along Cleve Road are likely. Consideration should be given to discussing with the effected property owners their desire for screen planting to be undertaken within their property by the proponent to assist in ameliorating all likely visual impacts.

Sensitive Receptor Locality 01 (SRL 01)

Image 18: VP 02A/SRL 01: X-ray image view of The Project from Cleve Road looking west to northwest

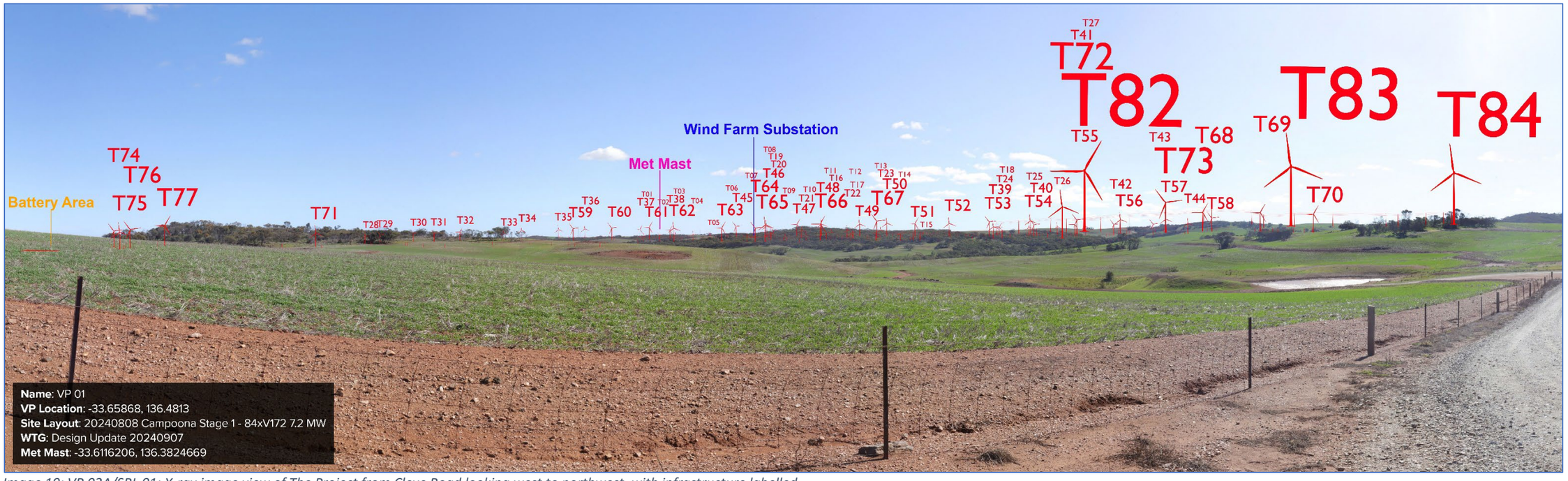

Image 19: VP 02A/SRL 01: X-ray image view of The Project from Cleve Road looking west to northwest, with infrastructure labelled

Sensitive Receptor Locality 02 (SRL 02)

Image 20: VP 05/SRL 02: View from Birdseye Highway looking northwest through to northeast

Viewpoint	Location	View Direction	Distance from Project Site(s)
Viewpoint 05 (VP 05)	Birdseye Highway approximately 5km west of Cleve	Northwest, north, northeast	11.5km to The Project centre; 2.2km to nearest WTG

Landscape and setting	Visual exposure at receptor
Intermittent views along the length of the southern project boundary through the occasional copses of native shrub and medium sized trees and introduced species screening the Yadnarie Substation. Glimpsed, fleeting views are obtained across the open more planar land to the south of the site by the traveller journeying through the locality at speeds of 80km per hour. The iridescent green is in sharp contrast to the more native subtle grey-green hues of the undulating crests and falls that are juxtaposed against the enveloping blue horizon. Whilst the recently introduced 275 kV transmission towers are incongruous where they converge with the existing substation and the utilitarian catenary of wires and gantries, their presence is less conspicuous as they march north and west across the expansive open fields; a vista where the scale and simplicity of the view diminishes the visual impact of size and columnar form.	Moderate to high where existing mature native plantings along the northern road verge restrict views to intermittent glimpses across the open fields.

Sensitive Receptor Locality 02 (SRL 02)

Image 21: VP 05/SRL 02: Photomontage view of The Project from Birdseye Highway looking northwest through to northeast

Predicted visual impact	Mitigation
The multi layered, linear disposition and arrangement of the collocated WTGs draws the eye west-east across a somewhat underwhelming scene. A visually simple and somewhat lacklustre landscape where large columnar elements juxtaposed against the expansive horizon and skyline will be notable and a significant addition to the panoramic view. In a contextual landscape and locality of **low scenic quality** to **moderate scenic quality** with **low sensitivity to change** to **medium sensitivity to change** where the exiting Eyre Peninsula Link transmission towers are barely discernible both singularly and cumulatively The Project will have a **slight adverse impact** to **moderate adverse impact.**	Where views through existing mature vegetation are restricted to fleeting glimpses in both eastern and western directions of travel the requirement for screen planting is considered unnecessary. It could be opined that The Project may provide a moment of visual 'incident' narrating the traveller's journey through the wider contextual landscape.

Sensitive Receptor Locality 02 (SRL 02)

Image 22: VP 05/SRL 02: X-ray image view of The Project from Birdseye Highway looking northwest through to northeast

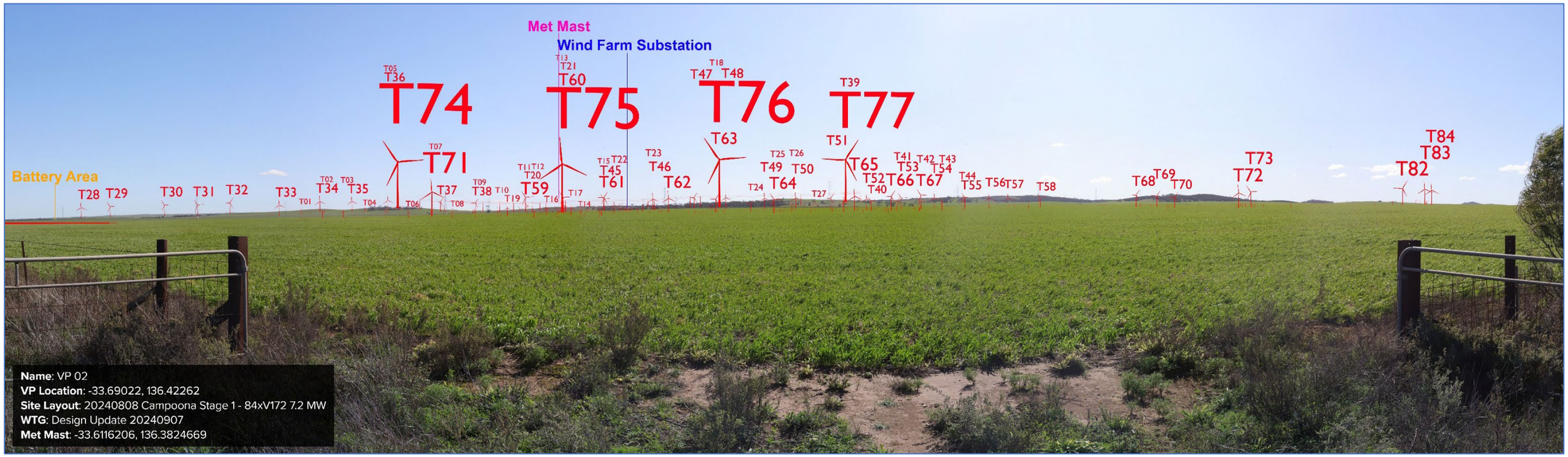

Image 23: VP 05/SRL 02: X-ray image view of The Project from Birdseye Highway looking northwest through to northeast, with infrastructure labelled

Sensitive Receptor Locality 03 (SRL 03)

Image 24: VP 06/SRL 03: View from Dreckow Road looking north

Image 25: VP 06/SRL 03: View from Dreckow Road looking southeast

Sensitive Receptor Locality 03 (SRL 03)

Image 26: VP 06/SRL 03: View from Dreckow Road looking southwest

Viewpoint	Location	View Direction	Distance from Project Site(s)
Viewpoint 06 (VP 06)	Dreckow Road west within the vicinity of No. 832 Dreckow Road	Three 120˚ views through a 360˚ field of vision	At The Project centre; 1.5km to nearest WTG

Landscape and setting	Visual exposure at receptor
At the convergence of the flatter planar landscape of predominantly cropping activities, which extends across and south beyond The Project, and the more undulating rising pastural and grazing land to the north where intermittent copses of trees and shrubs along the rising crests and falls create a more human scale sense of enclosure. Within the locality, residential dwellings sited on large allotments are located along Dreckow Road and Syvertsen Road accessed by long private driveways and mainly obscured from view by screen planting around the curtilage of the dwelling and outdoor recreational areas. The faint, barely discernible 275 kV transmission towers are largely anonymous with the open and expansive southern vista. The occasional intermittent copses of native vegetation across the subtle undulations provide visual incident.	Moderate where views across and over the northwestern and northern aspects of The Project site are precluded by the rising, undulating land.

Sensitive Receptor Locality 03 (SRL 03)

Image 27: VP 06/SRL 03: Photomontage view of The Project from Dreckow Road looking north

Image 28: VP 06/SRL 03: Photomontage view of The Project from Dreckow Road looking southeast

Sensitive Receptor Locality 03 (SRL 03)

Image 29: VP 06/SRL 03: Photomontage view of The Project from Dreckow Road looking southwest

Image 29: VP 06/SRL 03: Photomontage view of The Project from Dreckow Road looking southwest

Predicted visual impact	Mitigation
When viewed from within The Project area at this locality, the proposed linear disposition and regular arrangement of the collocated WTGs spanning across a largely uninspiring, vacuous landscape to the west, south and east will likely visually immerse the observer in a landscape of wind turbines. As such the visual impact of the WTGs both singularly and collectively is visceral as well as observational from this locality. A simple and somewhat lacklustre monumental visual landscape, where the introduction of further large columnar elements will be obvious to the south, west and east; however, to the north the WTGs will be more readily absorbed into the undulating rising land. Partial views of aspects of The Project from within the curtilage of a number of dwellings located on large properties along Dreckow Road are likely. In a contextual landscape and locality of **low scenic quality** to **moderate scenic quality** and **low sensitivity to change** to **medium sensitivity to change** and where the existing Eyre Peninsula Link transmission towers are barely discernible both singularly and cumulatively The Project will have a **slight adverse impact** to **moderate adverse impact.**	Consideration should be given to discussing with the effected property owners along Dreckow Road and possibly extending to the eastern parts of Syvertsen Road their desire for screen planting to be undertaken by the proponent within their property to assist in ameliorating all likely visual impacts.

Sensitive Receptor Locality 03 (SRL 03)

Image 30: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking north

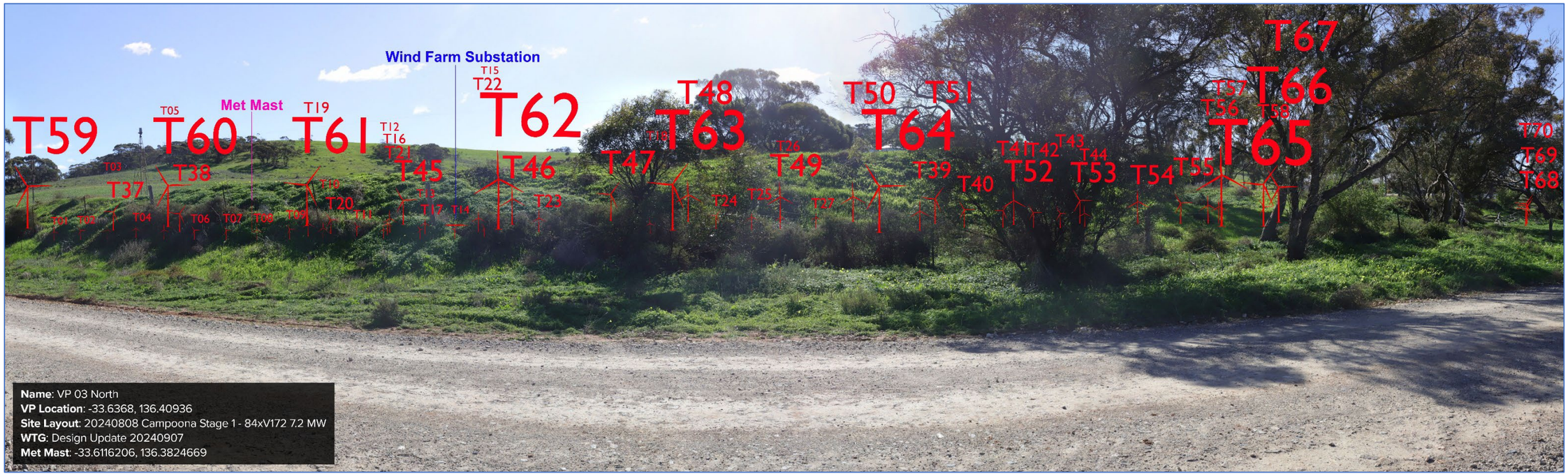

Image 31: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking north, with infrastructure labelled

Sensitive Receptor Locality 03 (SRL 03)

Image 32: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking southeast

Image 33: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking southeast, with infrastructure labelled

Sensitive Receptor Locality 03 (SRL 03)

Image 34: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking southwest

Image 35: VP 06/SRL 03: X-ray image view of The Project from Dreckow Road looking southwest, with infrastructure labelled

Sensitive Receptor Locality 04 (SRL 04)

Image 36: VP 09/SRL 04: View from Kielpa-Gum Flat Road looking north

Image 37: VP 09/SRL 04: View from Kielpa-Gum Flat Road looking southeast

Sensitive Receptor Locality 04 (SRL 04)

Image 38: VP 09/SRL 04: View from Kielpa-Gum Flat Road looking southwest

Viewpoint	Location	View Direction	Distance from Project Site(s)Approximate
Viewpoint 09 (VP 09)	Kielpa-Gum Flat Road	Three views through a 360-degree field of vision	3km to The Project centre; 1.2km to nearest WTG

Landscape and setting	Visual exposure at receptor
Located centrally within The Project the locality is typified by undulating crests and falls across rising land cloaked with contiguous threads and large copses of mature native trees and shrubs which create a more compartmentalised landscape within which the interspersed residential dwellings sited on large allotments and located within close proximity to the unsurfaced access roads are largely unobtrusive. An undistinguished landscape where the eye of the infrequent traveller and landowner is fleetingly drawn from along the north-south axis defined by Kielpa-Gum Flat Road and beyond the immediate foreground of verge plantings across the rising mid ground to the mature tree canopies silhouetted against the horizon.	Low to moderate where the landform and planting crate a more enclosed locality presented through a serial vision narration.

Sensitive Receptor Locality 04 (SRL 04)

Image 39: VP 09/SRL 04: Photomontage view of The Project from Kielpa-Gum Flat Road looking north

Image 40: VP 09/SRL 04: Photomontage view of The Project from Kielpa-Gum Flat Road looking southeast

Sensitive Receptor Locality 04 (SRL 04)

Image 41: VP 09/SRL 04: Photomontage view of The Project from Kielpa-Gum Flat Road looking southwest

Predicted visual impact	Mitigation
The more immediate upper tower and blades of nearby WTGs will be prominent and visual features rising above the surrounding evergreen canopies to punctuate the skyline. Distant WTGs will largely be concealed within the undulating topography. As intermittent visual features that from this locality will appear as clusters and not arranged in a linear fashion, the WTGs are more likely to stimulate interest as visual cues and focal points within an otherwise torpid landscape. In a contextual landscape and locality of **low scenic quality** to **moderate scenic quality** and **low sensitivity to change** to **medium sensitivity to change** The Project will have a **slight adverse impact**.	Partial views of aspects of the more immediate WTGs and meteorological mast from within the curtilage of a number of dwellings located on large properties within the locality are likely. Consideration should be given to discussing with the effected property owners their desire for screen planting to be undertaken by the proponent within their property to assist in ameliorating all likely visual impacts.

Sensitive Receptor Locality 04 (SRL 04)

Image 42: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking north

Image 43: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking north, with infrastructure labelled

Sensitive Receptor Locality 04 (SRL 04)

Image 44: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking southeast

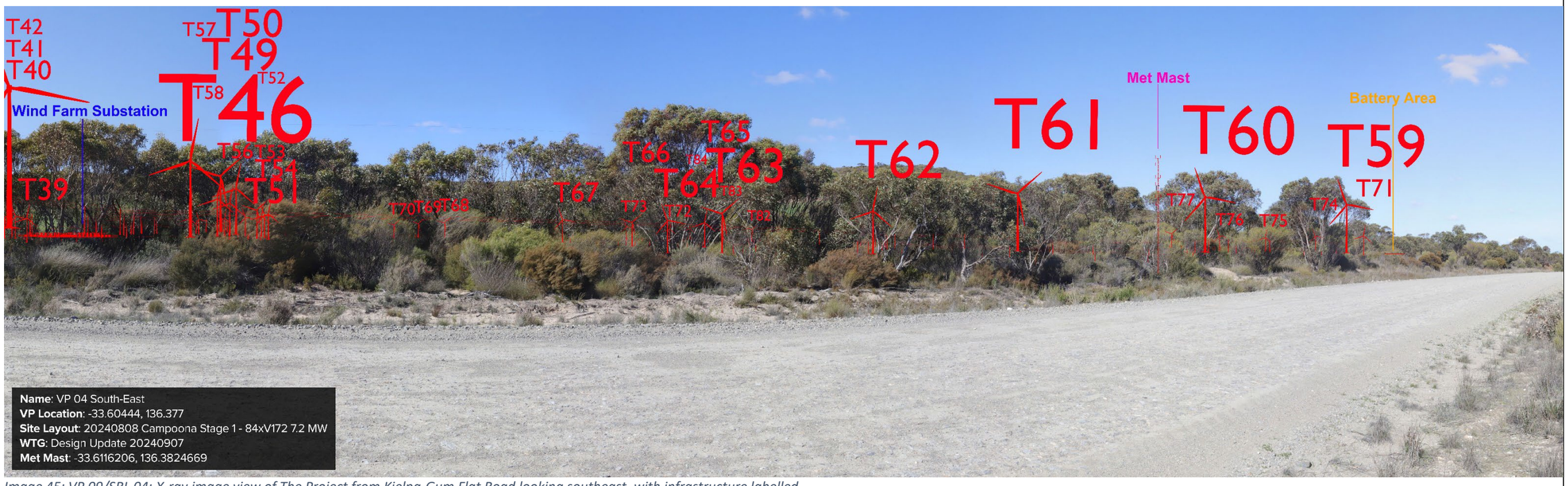

Image 45: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking southeast, with infrastructure labelled

Sensitive Receptor Locality 04 (SRL 04)

Image 46: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking southwest

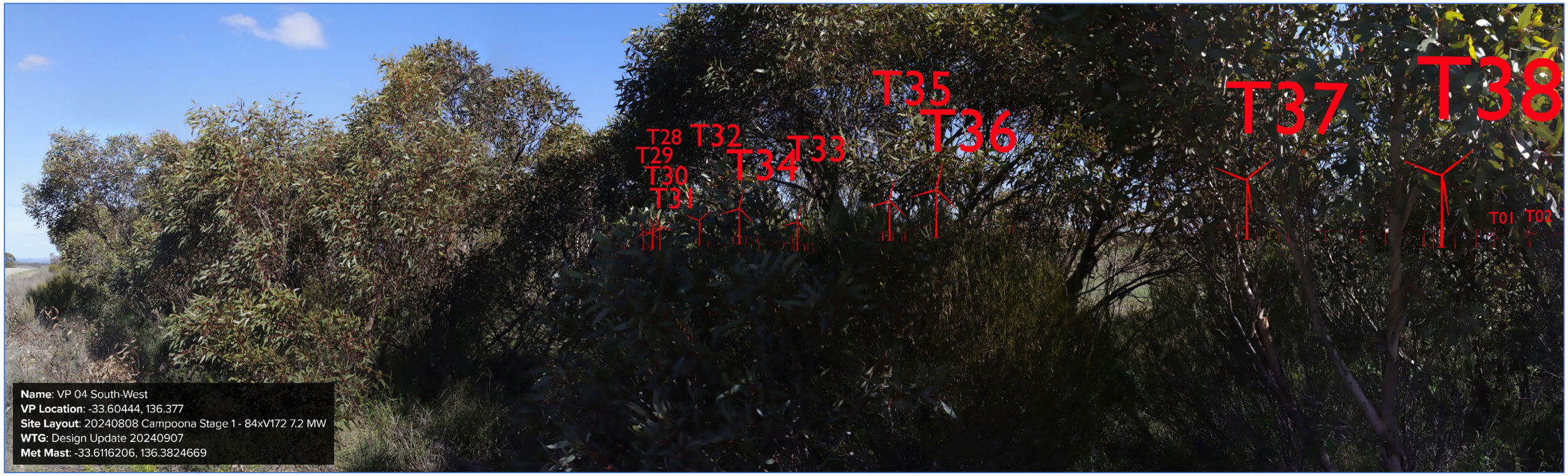

Image 47: VP 09/SRL 04: X-ray image view of The Project from Kielpa-Gum Flat Road looking southwest, with infrastructure labelled

9. Likely visual impact during construction phase

During the construction phase temporary changes to visual amenity will occur. Construction works at the site *per se* are not anticipated to affect visual amenity apart from the potential short-term presence of a crane structure. These changes will be due mainly, but not limited to the presence of construction equipment, earthworks activities and an overall increase in the number of people and large vehicles at each site and at roadside locations. Dust clouds created by earth moving activities during construction will require appropriate management by the contractor to mitigate all likely visual impacts.

Given the inability to predict the timing and programming of construction until a contractor has been appointed and commences work on site and the degree of temporary change in the visual environment that will likely occur, but which cannot thus be determined, the visual impact during construction phase is not considered in detail in this assessment.

The changing visual environment and activity during construction will be temporary and as the number of individuals impacted will likely be low, is not considered further in the visual impact assessment.

10. Mitigation considerations

Aside from potential mitigation issues discussed above to be considered at landowners' residential dwellings, consideration should be given to the finish of the meteorological and other tall towers using non-reflective materials and muted colours that complement the hues of the horizon. It is anticipated that the WTG tower and blades will be finished in a non-reflective matt paint colour preferably light grey or white. Further it is recommended all internal access roads to follow exiting grades and be of gravel constriction using a local stone base.

11. Consideration of the Planning and Design Code

The following Assessment Provisions of the SA Government's Planning and Design Code[9], (PDC) which refer to Desired Outcomes (DO) and Performance Outcomes (PO) are considered relevant where they pertain to issues of visual amenity.

Infrastructure and Renewable Energy Facilities

DO 1 *(requires the)* Efficient provision of infrastructure networks and services, renewable energy facilities and ancillary development in a manner that minimises hazard, is environmentally and culturally sensitive and manages adverse visual impacts on natural and rural landscapes and residential amenity.

General

PO 1.1 Development is located and designed to minimise hazard or nuisance to adjacent development and land uses.

Visual Amenity

PO 2.1 The visual impact of above-ground infrastructure networks and services (excluding high voltage transmission lines), renewable energy facilities (excluding wind farms), energy storage facilities and ancillary development is minimised from townships, scenic routes and public roads by:

a) utilising features of the natural landscape to obscure views where practicable
b) siting development below ridgelines where practicable
c) avoiding visually sensitive and significant landscapes
d) using materials and finishes with low-reflectivity and colours that complement the surroundings
e) using existing vegetation to screen buildings
f) incorporating landscaping or landscaped mounding around the perimeter of a site and between adjacent allotments accommodating or zoned to primarily accommodate sensitive receivers.

PO 2.2 Pumping stations, battery storage facilities, maintenance sheds and other ancillary structures incorporate vegetation buffers to reduce adverse visual impacts on adjacent land.

PO 2.3 Surfaces exposed by earthworks associated with the installation of storage facilities, pipework, penstock, substations and other ancillary plant are reinstated and revegetated to reduce adverse visual impacts on adjacent land.

Electricity Infrastructure and Battery Storage Facilities

PO 5.1 Electricity infrastructure is located to minimise visual impacts through techniques including:

a) siting utilities and services:
    i. on areas already cleared of native vegetation
    ii. where there is minimal interference or disturbance to existing native vegetation or biodiversity

[9] PlanSA (2023). *Planning and Design Code Version 2024.15. 15 August 2024*. Government of South Australia.

b) grouping utility buildings and structures with non-residential development, where practicable.

Telecommunication Facilities

PO 6.1 The proliferation of telecommunications facilities in the form of towers/monopoles in any one locality is managed, where technically feasible, by co-locating a facility with other communications facilities to mitigate impacts from clutter on visual amenity.

PO 6.2 Telecommunications antennae are located as close as practicable to support structures to manage overall bulk and mitigate impacts on visual amenity.

PO 6.3 Telecommunications facilities, particularly towers/monopoles, are located and sized to mitigate visual impacts by the following methods:

a) where technically feasible, incorporating the facility within an existing structure that may serve another purpose
or all of the following:
b) using existing buildings and landscape features to obscure or interrupt views of a facility from nearby public roads, residential areas and places of high public amenity to the extent practical without unduly hindering the effective provision of telecommunications services
c) using materials and finishes that complement the environment
d) screening using landscaping and vegetation, particularly for equipment shelters and huts.

Renewable Energy Facilities

PO 7.1 Renewable energy facilities are located as close as practicable to existing transmission infrastructure to facilitate connections and minimise environmental impacts as a result of extending transmission infrastructure.

Renewable Energy Facilities (Wind Farm)

PO 8.1 Visual impact of wind turbine generators on the amenity of residential and tourist development is reduced through appropriate separation.

DTS/DPF 8.1 Wind turbine generators are:

a) set back at least 2000m from the base of a turbine to any of the following zones:
   i. Rural Settlement Zone
   ii. Township Zone
   iii. Rural Living Zone
   iv. Rural Neighbourhood Zone
   with an additional 10m setback per additional metre over 150m overall turbine height (measured from the base of the turbine).
b) set back at least 1500m from the base of the turbine to non-associated (non-stakeholder) dwellings and tourist accommodation

PO 8.2 The visual impact of wind turbine generators on natural landscapes is managed by:

a) designing wind turbine generators to be uniform in colour, size and shape
b) coordinating blade rotation and direction
c) mounting wind turbine generators on tubular towers as opposed to lattice towers.

PO 8.5 Meteorological masts and guidewires are identifiable to aircraft through the use of colour bands, marker balls, high visibility sleeves or flashing strobes.

Temporary Facilities

PO 13.2 Temporary facilities to support the establishment of renewable energy facilities (including borrow pits, concrete batching plants, laydown, storage, access roads and worker amenity areas) are sited and operated to minimise environmental impact.

12. Summary and recommendations

In a locality where the existing 275 kV transmission towers and Yadnarie Substation are notable utilitarian infrastructure features the singular and cumulative visual impact that is likely to be experienced within a notional 15km radius Zone of Theoretical Visual Influence (ZTVI) by the introduction of The Project will be:

- **Slight adverse impact** at one Sensitive Receptor Locality (SRL 04);
- **Slight adverse impact** to **moderate adverse impact** at three Sensitive Receptor Localities (SRL 01, SRL 02 and SRL 03).

Outside the ZTVI the windfarm will have no discernible visual presence, consequently the contextual landscape within which The Project is located will not be adversely impacted. Whilst The Project will be a visually prominent addition to the visual landscape of the locality The Project is not at a variance with the PDC.

In discussion with effected property owners', mitigation strategies to ameliorate the potential visual impact both during construction and at completion of the windfarm installation may be considered at residential properties within close proximity to The Project. The need for screen planting from publicly accessible vantage points is considered unnecessary.

It is the author's opinion that being of an acceptable design standard The Project will introduce new 'kinetic' infrastructure elements into the landscape, stimulating interest and evoking curiosity as prominent infrastructure features of merit in addition to establishing best practice examples of progressive renewable energy delivery.

Appendix A: Register of onsite activities

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report

26th July 2024

Contents

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VP02

PM Name: VP02
Date: 26/07/24
Time: 11:23am ACST
Location: Birdseye Hwy, Cleve SA 5640

GPS Location: -33.690228, 136.422628
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/125
Focal Length: 50mm

Notes/Considerations:

- Windy.

Image of rig setup at capture location

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VP01

PM Name: VP01
Date: 26/07/24
Time: 12:06pmam ACST
Location: Cleve Rd, Cleve SA 5640

GPS Location: -33.658688, 136.481302
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/200
Focal Length: 50mm

Notes/Considerations:

- Windy.
- Sloped Surface.

Image of rig setup at capture location

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VP03

PM Name: VP03
Date: 26/07/24
Time: 12:35pm ACST
Location: Dreckow Rd, Cleve SA 5640

GPS Location: -33.636802, 136.409367
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/200
Focal Length: 50mm

Notes/Considerations:

- Light tree density around shot
- Earthen embankment nearby obstructing the view.

Image of rig setup at capture location

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VP04

PM Name: VP04
Date: 26/07/24
Time: 12:58pm ACST
Location: Kielpa-Gum Flat Rd, Cleve SA 5640

GPS Location: -33.604449, 136.377005
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/200
Focal Length: 50mm

Notes/Considerations:

- Heavy tree density obscured most of the shoot.

Image of rig setup at capture location

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VS08

PM Name: VS08
Date: 26/07/24
Time: 1:33pm ACST
Location: Birdseye Hwy, Rudall SA 5642

GPS Location: -33.686542, 136.274318
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/200
Focal Length: 50mm

Notes/Considerations:

Image of rig setup at capture location

Convergen Hemisphere Campoona Energy Hub Photomontage Site Report, VS04

PM Name: VS04
Date: 26/07/24
Time: 2:03pm ACST
Location: West Terrace, Cleve SA 5640

GPS Location: -33.700264, 136.491332
Camera Height: 1.57m

Camera: Canon EOS 6D Mark II
Image Capture Resolution: 4160x2768 pixels
Bit Depth: 24
F-Stop: F/22
Exposure: 1/200
Focal Length: 50mm

Notes/Considerations:

- Light tree density around shot

Image of rig setup at capture location