

29 February 2024

Attention: Trevor Allen, Pitt & Sherry

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Ref: 21823 REV02

**Proposed Texas Farm, Landscape and Visual Impact Assessment
Preliminary Assessment (Scoping Report) Stage**

1.0 Introduction

Envisage Consulting Pty Ltd prepared this preliminary visual assessment for the proposed Texas Solar Farm for Pitt & Sherry Pty Ltd, on behalf of FRV Services Australia Pty Ltd (the 'proponent').

The preliminary assessment responds to requirements of the *Large-scale Solar Energy Guideline* ('Guideline'; DPE, 2022) and the *Technical Supplement - Landscape and Visual Impact Assessment* ('Technical Supplement'; DPE, 2022). Its primary purpose is to identify viewpoints that could be visually impacted by the Project and those that will require 'detailed assessment' in the Environmental Impact Statement (EIS) phase.

2.0 Project

The solar farm (the 'Project') is proposed to have a capacity up to 400 megawatt (MW) and the BESS is proposed to have a capacity up to 200 MW/ 800-megawatt hour (MWh). The Site is located about 3.8 km south-west of the town of Texas in Queensland (QLD), although it is located wholly within New South Wales (NSW). The Site covers an area of about 1,608 hectares, with a facility footprint of about 977 hectares that includes:

- Solar array areas, containerised lithium-ion batteries, and associated electrical/power conversion systems, switchgear and a control building.
- Associated infrastructure including:
 - switching station and substation electrical/power conversion systems
 - control building cabling and collector units
 - storage and maintenance area
 - internal access tracks
 - on-site parking
 - security fencing; and
 - lighting.

The development will connect to the energy grid via the existing 330 kV transmission line that traverses the Site.

3.0 Site context

The Site is situated within northern NSW about 3.8 km south-west of the small rural township of Texas. Texas is located in QLD, just north of the nearby QLD/NSW border which is marked by the Dumaresq River. The closest part of the Site to the state border is about 1.3 km.

Land use on the Site and nearest surrounding area is rural. There is also a nearby quarry and bordering the Site to the south is the NSW Bebo State Forest. A small creek crosses the Site, named Sandy Creek, and flows north into the Dumaresq River.

The Bruxner Highway borders the Site to the north. This 420 km state highway forms an east–west link across the Northern Tablelands in northern NSW, to the NSW Northern Rivers coast. In the vicinity of the Site, the Bruxner Highway is more comparable to the scale of a local road, being two lanes wide without any marked lanes.

Texas Aerodrome is north-west on Texas-Yelarbon Road, and about 5 km from the Site. Beacon Lookout is located on Stanthorpe-Texas Road north-east of Texas and about 8 km from the Site. There is a small camping ground along the Dumaresq River (on the northern side of the river), just south of Texas.

Landform across the Site is flat to undulating, with the highest landform in the south and west of the Site, falling toward the northern and eastern boundaries.

The Site has been classified under the Mitchell landscape¹ classification system as comprising two landscape 'subregions', with each derived from a larger 'bioregion'. Those two being the 'Bebo Ranges and Slopes' subregion (derived from the Nandewar Bioregion) and the 'Croppa Clay Plains' subregion (derived from the Brigalow Belt South bioregion).

The likely effect of the Project on the 'landscape character' of the Site and surrounding area would be considered further in the EIS phase, as required by the *Technical Supplement*.

4.0 Preliminary assessment of impact to surrounding viewpoints

4.1 Methodology

The process for assessing the impact to surrounding viewpoints (both private (residential) receivers and public viewpoints) is broken into two phases:

- a preliminary assessment (as part of the Scoping Report)– the initial phase to identify viewpoints requiring a detailed assessment, and
- a detailed viewpoint assessment (as part of the EIS phase).

The *Technical Supplement* sets out steps to be undertaken for the preliminary assessment, which are:

- Calculating the distance of each receiver (viewpoint (VP)) from the nearest point of the Project
- Determining the 'relative height difference'² between the Project and each receiver

¹ The Bioregions of NSW (National Parks and Wildlife Service (NPWS) 2003)

² 'Relative height difference' is calculated based on Figure 3 of the *Technical Supplement* and determined by measuring the total project elevation (highest point to lowest point) relative to the viewpoint elevation.

- Plotting each receiver on the Preliminary Assessment Table (PAT) Graph – based on distance and relative height difference (from above) to determine the 'Vertical Field of View'³ (as either 1, 2, 3 or 4+ degrees)
- Measuring the 'horizontal field of view'⁴ of the Project from each receiver (note this does not allow for the elimination of Project areas obstructed by landform and/or vegetation)
- Comparing the vertical and horizontal fields of view (using the matrix in Table 1 of *Technical Supplement*) to determine which receivers are to be assessed in the next stage (i.e., detailed visual assessment for EIS).

4.2 Identification of viewpoints to be assessed

Under the *Technical Supplement*, key public viewpoints within 2.5km of the project need to be identified and private viewpoints (residences) within 4km.

To identify viewpoints, a viewshed of the Site (based on an approximate height of 5.5 metres (m) for the solar panels extending close to the Project boundary), was used to identify receivers with theoretical line-of-sight to the Project. The Project's 'theoretical' viewshed is shown in yellow in **Figure 1**. It was produced via geographic information systems (GIS) which account for line-of sight to the Project based on 'bare earth' terrain and is therefore 'theoretical' (i.e. it does not account for intervening elements such as vegetation or buildings which could obstruct views).

Public viewpoints on roads or railways within 2.5km

Public viewpoints identified within 2.5km are:

- Bruxner Highway
- And a number of local roads (Old Texas Road, Texas Road and Goat Rock Road).

Private and other public viewpoints (i.e. that are not along roads or railways) within 4km

36 private (residential) receivers (PR) have been identified within 4 km of the Site (measured from the site boundary as identified in **Figure 1**). Of those, four are landholders associated with the Project (private receiver (PR) 1, PR2, PR3 and PR4) and as such are not required to be considered further in the assessment.

Public viewpoints could also be located within the Bebo State Forest which bounds the Site to the south.

4.3 Preliminary viewpoint assessment results

Calculations using steps 3-7 of the preliminary assessment methodology were applied to clarify which private receivers would require further assessment in the EIS phase. Those calculations principally determine the vertical and horizontal field of view that a development is likely to occupy when viewed from each viewpoint, and is influenced by distance, height elevation changes and physical width of a project.

The results of the preliminary assessment are shown in **Attachment A, Table 1**.

Based on the preliminary assessment, the following viewpoints require a detailed assessment in the EIS phase:

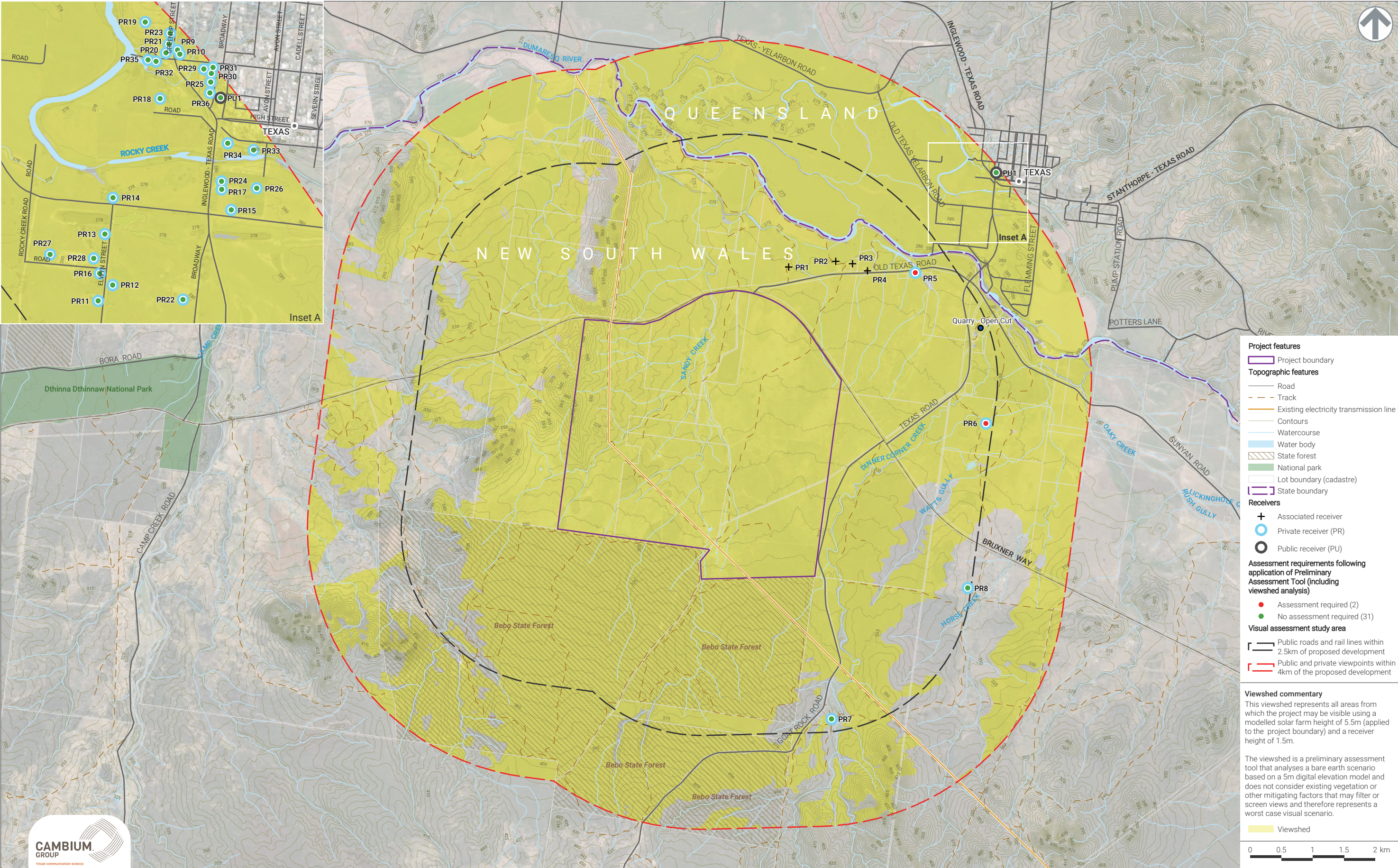
- Two private residences within 4 km – being Receivers **PR5 and PR6** (refer **Figure 1**)

³ 'Vertical field of view' is calculated based on Figure 2 of the *Technical Supplement* and reflects the visual height of the project relative to the viewpoint

⁴ 'Horizontal field of view' is a measurement of degrees and reflects the visual width of the project relative to the viewpoint.

Figure 1
Preliminary theoretical viewshed and viewpoint analysis

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Source: NSW Government Department of Planning and Environment, Technical Supplement - Landscape and Visual Impact Assessment (2022), NSW Government Spatial Services (2023), Esri, Maxar, Geoeye (2023), Commonwealth of Australia (Geoscience Australia) (2024), Pitt & Sherry (2024), Envisage Consulting (2024), Cambium Group (2024).

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- A 9.5 km section of the Bruxner Highway to the north (which falls within the 2.5km distance shown in **Figure 1**)
- Viewpoints along some local roads within that same 2.5 km distance - Old Texas Road, Texas Road and Goat Rock Road
- Possible public viewpoints within the NSW Bebo State Forest.

5.0 Cumulative impacts

At this stage there are no other known, or proposed, renewable energy or other large projects are within the 5km study area (which applies to landscape and visual impact assessment).

6.0 Next stage – EIS detailed Landscape and Visual Impact Assessment

A detailed Landscape and Visual Impact Assessment (LVIA) will be prepared as part of the EIS process, to assess the visual impacts on the viewpoints identified in the preliminary assessment in accordance with the methodology set out in DPE's *Guideline* and *Technical Supplement*.

Note that at the time of this report that the Department of Housing, Infrastructure and Planning (DHIP, the current name of the former DPE) was considering changes to the *Guidelines* and *Technical Supplement* which may affect the requirements for the EIS phase.

Document control: Envisage Project Number - 21823

Revision	Date of Issue	Prepared / Authorised by	Reviewed by
1	28 February 2024	Stacey Brodbeck	Alison Dodds
2	29 February 2024	Stacey Brodbeck	Stacey Brodbeck

Table 1: Preliminary Assessment Tool (PAT) table showing which viewpoints require detailed assessment in EIS phase

Existing receiver		Preliminary assessment tool calculations					Is detailed visual assessment required in EIS? ⁵
Receiver type	Receiver number (refer Figure 1)	Distance to Project boundary (5m DEM)	Height of viewpoint ⁶	Relative height difference (m) ⁷	Vertical field of view (sector) ⁸	Horizontal field of view (degrees) ⁹	
Public receiver (PU)	PU1	3928	286.7	87.5	1	46	No
Associated residents	PR1	598	281.1	87.5	4	100	No
	PR2	1088	280.4	87.5	4	80	No
	PR3	1242	282.1	87.5	3	73	No
	PR4	1342	282.3	87.5	3	72	No
Private residence (PR)	PR1	598	281.1	87.5	4	100	No
	PR2	1088	280.4	87.5	4	80	No
	PR3	1242	282.1	87.5	3	73	No
	PR4	1342	282.3	87.5	3	72	No
	PR5	1944	281.2	87.5	2	66	Required
	PR6	2387	289.2	87.5	2	72	Required
	PR7	2298	338.8	87.5	2	57	No
	PR8	2450	304.7	87.5	2	57	No
	PR9	3917	282.6	87.5	1	46	No
	PR10	3912	282.0	87.5	1	46	No
	PR11	2847	279.5	87.8	1	54	No
	PR12	2951	279.4	87.9	1	54	No
	PR13	3064	279.1	88.2	1	52	No
	PR14	3204	279.3	88.0	1	51	No
	PR15	3644	279.4	87.9	1	48	No
	PR16	2930	279.3	88.0	1	54	No
	PR17	3662	279.6	87.7	1	48	No
	PR18	3694	278.7	88.6	1	48	No
	PR19	3895	286.1	87.5	1	46	No
	PR20	3866	283.7	87.5	1	46	No
	PR21	3906	284.3	87.5	1	46	No
	PR22	3198	279.7	87.6	1	52	No
	PR23	3947	284.3	87.5	1	46	No

TABLE NOTES:

⁵ Based on Table 1 of the *Technical Supplement*.

⁶ Ground height of viewer + 1.5 m standard viewer height.

⁷ Relative height, based on using 368.8m as the highest point of development (includes 5.5m for solar panels) and 281.3m as the lowest point of development.

⁸ The vertical field of view determined by graph in Attachment A.

⁹ Horizontal field of view calculated on the width of the Site. Measurements are approximate to nearest degree.

Existing receiver		Preliminary assessment tool calculations					Is detailed visual assessment required in EIS? ⁵
Receiver type	Receiver number (refer Figure 1)	Distance to Project boundary (5m DEM)	Height of viewpoint ⁶	Relative height difference (m) ⁷	Vertical field of view (sector) ⁸	Horizontal field of view (degrees) ⁹	
	PR24	3684	279.3	88.0	1	48	No
	PR25	3938	284.7	87.5	1	46	No
	PR26	3809	279.6	87.7	1	47	No
	PR27	2787	278.8	88.5	1	55	No
	PR28	2948	279.1	88.2	1	53	No
	PR29	3954	281.5	87.5	1	46	No
	PR30	3968	284.4	87.5	1	46	No
	PR31	3994	284.6	87.5	1	46	No
	PR32	3801	281.6	87.5	1	47	No
	PR33	3903	281.7	87.5	1	46	No
	PR34	3819	281.8	87.5	1	47	No
	PR35	3777	279.9	87.5	1	47	No
	PR36	3902	284.2	87.5	1	46	No

