Landscape and Visual - Summary of Key Outcomes

A total of 34 potential view locations were identified as part of the visual assessment process.

For the proposed Power Station layout, an assessment of the visibility rating for each potential view location indicated the following:

- a **NIL** visibility rating for 16 of the 34 view locations has been determined, while a **LOW** visibility rating has been determined for 18 view locations;

For the proposed Communication Tower infrastructure, an assessment of the visibility rating for each potential view location indicated the following:

- a **NIL** visibility rating for 15 of the 34 view locations has been determined, while a **LOW** visibility rating has been determined for 19 view locations; and

For the proposed Valve Station:

- a **NIL** visibility rating for 22 of the 34 view locations has been determined, while a **LOW** visibility rating has been determined for 12 view locations.

There are unlikely to be any significant and direct views toward the power station and communication tower and valve station from the majority of local roads or access tracks. Views toward the power station are likely to be restricted to portions of the exhaust stacks and will be generally for a short duration where visible.

The low visual impact would be due to a combination of the following factors:

- Existing trees and more dense timbered areas combine with natural undulating landform to screen the majority of views toward the power station site from surrounding areas including views from rural residential dwellings.
- There are no significant views toward the power station site from surrounding local roads or property access tracks.
- The majority of ancillary structures associated with the power station (including control buildings, workshop and electrical infrastructure) would be largely screened by existing trees and timbered areas within the AGL site boundary as well as the undulating topography surrounding the site.
- The exhaust stacks, which are the tallest structures associated with the power station, would be visible from a number of surrounding rural residential properties as well as some surrounding local roads and private access tracks. The exhaust stacks may also be visible above the skyline from some view locations surrounding the power station site. Given the generally narrow profile of the exhaust stacks and taking into account the proposed mitigation measures, it is unlikely that the exhaust stacks would result in a significant visual impact on people at surrounding view locations. Visible emissions plumes above the power station exhaust stacks would be unlikely during operation.
- Views toward the exhaust stacks from the majority of rural residential properties would generally be restricted to mid or upper portions of the exhaust stacks, with views to the lower sections and associated power station infrastructure blocked by existing trees and undulating landform.

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- There are no known existing developments of a similar nature within the local or surrounding area. Therefore it is considered that no cumulative visual impacts are likely to occur.
- The valve station is unlikely to result in significant visual impacts due to its location within an area of low density population as well as the small number of motorists travelling along Walshs Road on a daily basis.
- Distant views toward the communications tower are likely to be influenced by atmospheric conditions which will tend to reduce the visibility of the tower.
- The use of dark colours and non-reflective materials would help to minimise the potential for visual contrast between the power station and tree canopy background when viewed from some view locations beyond the AGL site boundary or valve station location.
- The used of appropriate colours and finishes to elements within the valve station would help to minimise the visibility of the valve station from surrounding view locations.

10.1 Introduction

The visual assessment involved a comprehensive evaluation of the visual character of the landscape in which the Project would be located and an assessment of the potential visual impacts that could result from the construction and operation of the Facility.

The primary objective of the visual assessment was to determine the likely visual impact of the power station and associated infrastructure on people living and working in, or travelling through the landscape surrounding the Project.

10.2 Methodology

The visual assessment adopted a methodology that has been applied to a number of visual assessments for similar power station projects, and by other professionals undertaking visual studies for similar developments.

A desktop study was undertaken by reference to 1:25,000 topographic maps as well as aerial photographs of the site and surrounding area. The topographic maps and aerial photographs were also used to identify potential view locations that could be verified during the fieldwork component of the visual assessment.

The field inspection involved:

- a detailed inspection to determine the potential extent of visibility of the Project;
- determination of the view locations from which the Project could potentially be visible;
- assessment of visual impact using:
  - potential visibility of the Project site;
  - identification and mapping of potential view locations;
  - analysis of visibility; and
- identification of mitigation measures to minimise potential visual impacts.

10.2.1 Assessment of Visual Impact

The potential visual impact of the Project at individual view locations would result primarily from a combination of the potential visibility of the power station structures and the visual character of the landscape between, and surrounding, the viewer and the Project. The potential degree of visibility and potential visual impact may be partly determined by a combination of factors including:

- the category of situation from which people may view the Project (examples of viewer categories include residents and motorists);
- the visual sensitivity of view categories surrounding the Project;
- the potential number of people with a view toward the Project from any one view location;
- the distance between the view location and the Project; and
- the duration of time a person may view the Project from any static or dynamic view location.

10.2.2 Panoramic Photographs

A series of photographs were taken during the course of the fieldwork to illustrate views from a number of potential view locations, which were inspected and assessed as part of the visual assessment process.

Individual photographs were digitally stitched together to form a segmented panoramic image to provide a visual illustration of the existing view from each photographic location.

10.2.3 Visual Assessment Criteria

A visibility rating for each view location has been assessed and determined against the criteria outlined in **Table 10-1** below:

Table 10-1 View Location Assessment Criteria

Criteria	Definition
Number of Viewers	
High	>200 people per day
Moderate	150 - 199 people per day
Low	50 - 149 people per day
Very Low	<50 people per day
View Distance	
Distant	>6km
Long	3km – 6km
Medium	2km – 3km
Short	1km – 2km
Very short	<1km
Period of View	
Long term	> 2 hours
Moderate term	30 - 120 minutes
Short term	10 – 30 minutes
Very Short Term	< 10 minutes

An indicative visibility rating resulting from various combinations of the above criteria is listed in **Table 10-2**.

Table 10-2 Visibility Criteria Matrix

	Distance and Long Distance			Medium Distance			Short Distance			Very Short Distance		
Period of View	**L/M**	**S**	**VS**	**L/M**	**S**	**VS**	**L/M**	**S**	**VS**	**L/M**	**S**	**VS**
High No. of Viewers	M	L	L	H	M	M	H	H	M	H	H	H
Moderate No. of Viewers	L	L	L	M	M	L	H	M	M	H	H	M
Low No. of Viewers	L	L	L	M	L	L	M	M	L	H	M	L
Very Low No. of Viewers	L	L	L	L	L	L	M	L	L	M	M	L

- **Period of View** L/M=Long to Moderate term, S=Short term , VS=Very Short term
- **Levels of visibility** L=low, M=medium and H=high

The visibility criteria matrix is used as a guide to determine a visibility rating. The visibility rating for each view location is also considered against other factors, which include the sensitivity of the viewer. For example, residential properties are highly sensitive whereas industries have lower sensitivity.

10.3 Elements of Dalton Power Project

Details of the various components of the Project are described in detail in **Chapter 4**. The key visual elements associated with the Project include:

- proposed access road;
- up to six gas turbines;
- up to six exhaust stacks up to 46 m high but likely between 28 – 30 m high;
- control building;
- workshop and store;
- switchyard and transformer;
- one or two additional transmission line structures to be constructed within the existing TransGrid 330 kV easement to connect the Facility to the transmission network;
- proposed valve station to be located adjacent to the Moomba to Sydney Gas Pipeline in proximity to Walshs Road; and
- A 60m high lattice steel communications tower supporting antenna dishes.

The transmission line connection would be generally screened from surrounding view locations by topography and existing trees within and surrounding the site.

The access road, control building, ancillary infrastructure and constructed gas pipeline would generally not be visible from most view locations.

The proposed valve station adjacent to the Moomba to Sydney Gas Pipeline would occupy an area of approximately 0.22 ha and would be set back approximately 25 m to the west of Walshs Road. This would be the only element of the proposed gas pipeline outside of the Facility which would be located above ground. The area, which would be approximately 30 m x 70 m in size would be fenced off from public access and AGL proposes a number of mitigation measures to minimise the visual impact of this infrastructure from the road.

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10.4 Existing Environment

10.4.1 Visual Character of the Surrounding Landscape

Site Context

The proposed power station site is located approximately 4 km north of the rural village of Dalton.

The power station footprint is located on gently sloping land that falls north and east. The site would be subject to some cut and fill earthworks to provide a suitably level construction platform.

The landscape immediately surrounding the site is predominantly rural in nature. The landscape has been generally cleared for arable and livestock production, although timbered areas have been retained along a number of gullies that flow to the Lachlan River, and on surrounding hill tops and ridgelines.

The landscape surrounding the site is divided by a number of drainage lines that flow to the Lachlan River, and give rise to an undulating landform either side of the river corridor.

The Site has a small number of clumped and individual trees scattered across it, some of which would be removed to accommodate the Facility and associated infrastructure.

The existing landscape surrounding the Project site contains a number of constructed elements that contribute to the local visual character that includes:

- a 330 kV transmission line;
- local roads and access tracks; and
- agricultural structures.

A small number of rural residential and farm properties are located in the landscape around the Project. Some of the residential properties are not visually prominent due to screening by surrounding undulating landform or the presence of trees around them. Visibility from residential properties was determined during the site analysis and fieldwork carried out as part of the visual assessment process.

Landform and Elevation

Topography

Topography is a key influence on the extent to which the proposed power station may be visible from surrounding areas. The key aspects are summarised below:

- The power station would be located on a saddle between a north south ridgeline extending to the west of the Lachlan River, and a small hill rising to around 600 m AHD to the south west of the site.
- The ground level at the base of the exhaust stacks would be around 575 m AHD. The top of the exhaust stacks would be up to around 621 m AHD but is likely to be around 605 m AHD.
- Land immediately to the north and east of the site falls gently to the Lachlan River corridor, and rises moderately steeply to the west across and over a small hill.

- The Lachlan River follows a meandering course in a general north west to south east alignment. A small number of gullies extend from land surrounding the site to the river corridor.

Vegetation

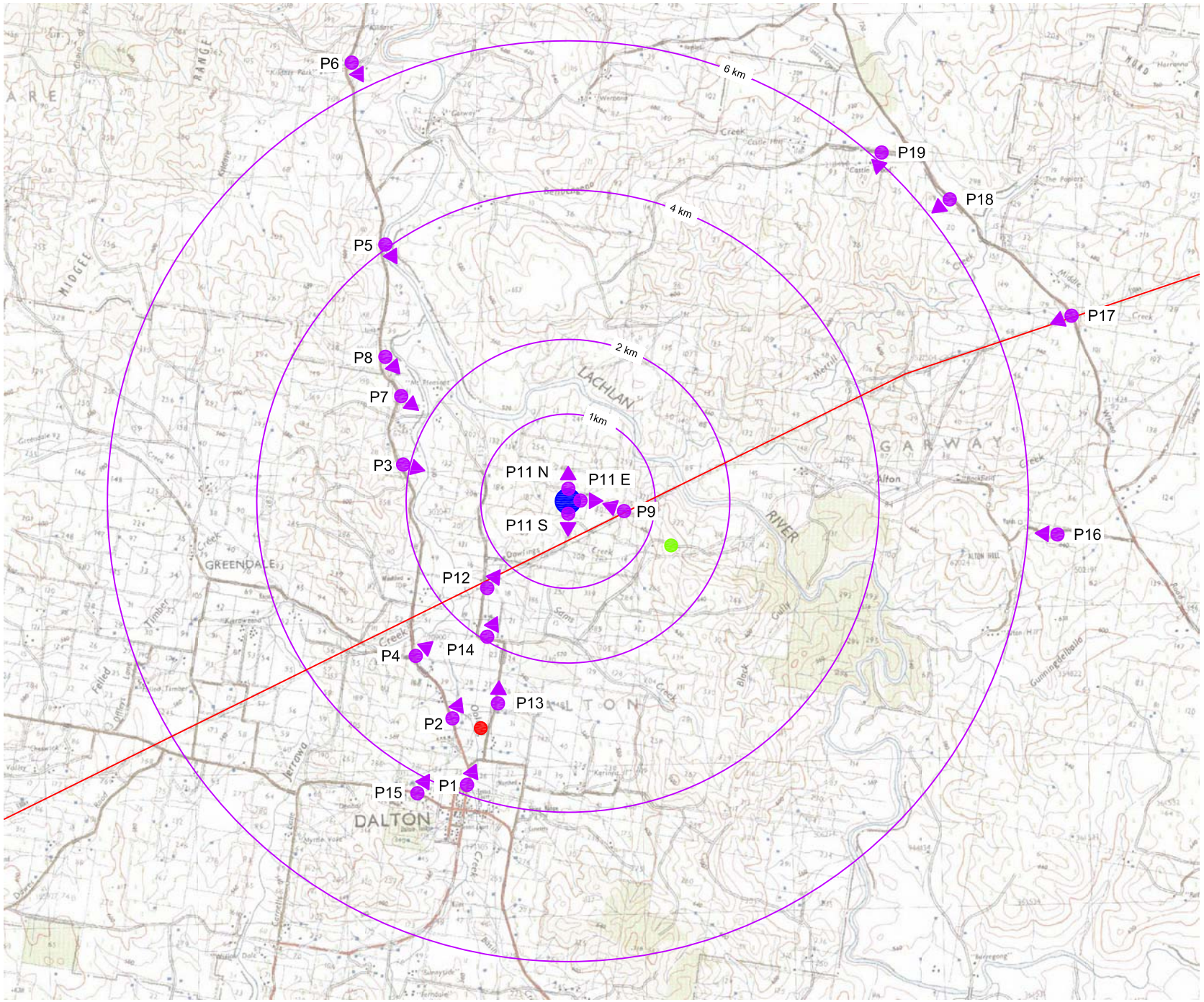
The Site and immediate surrounding area is generally characterised by grass pasture with stands of scattered and individual trees. Denser timbered areas occur in several locations around the Development Footprint, across slopes as well as within gullies and drainage lines.

Overall the characteristics of the landscape surrounding the Development Footprint are generally robust, and would tend to be less affected by the development.

10.4.2 View Locations

The panoramic images presented in this report have been annotated to identify key existing features located within the field of view.

The location of photographs taken from potential view locations are illustrated in **Figure 10-1**, and panoramic photographs illustrated in **Figures 10-2** to **10-6.**



LEGEND

- INDICATIVE SITE LOCATION
- INDICATIVE COMMUNICATION TOWER LOCATION
- INDICATIVE VALVE STATION SITE LOCATION
- DISTANCE OFFSET
- PHOTO LOCATION
- EXISTING 330kV TRANSMISSION LINE

N

0m 2km

Source: Copyright Department of Lands Panorama Avenue Bathurst 2795 (www.lands.nsw.gov.au)

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-1.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTO LOCATIONS

Figure: 10-1

URS

Photo Location 1 View north from Chappel Street, Dalton

Photo Location 2 View north from road

Photo Location 3 View east to south east from road

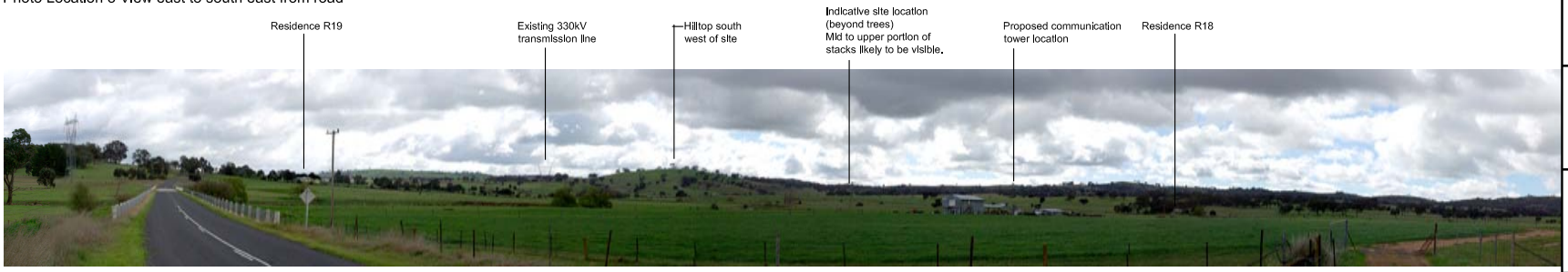


Photo Location 4 View north east from road at creek crossing

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-3.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTOSHEET 1

Figure: 10-2

URS

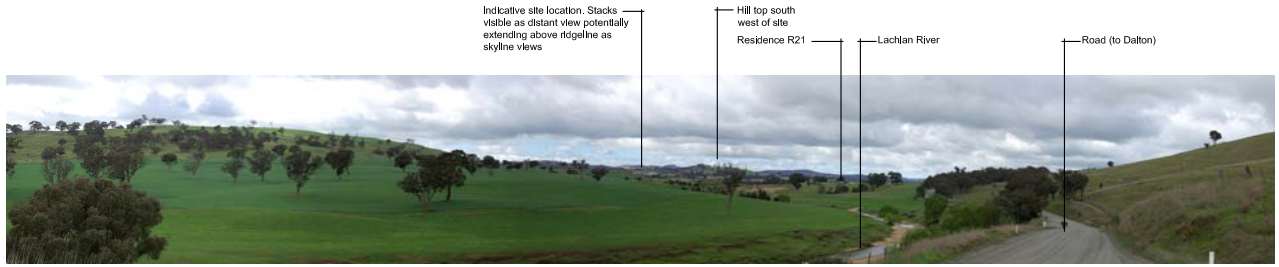


Photo Location 5 View south to south east from road

Photo Location 6 View south to south east from road cutting

Photo Location 7 View south east from road

Photo Location 8 View south east from road

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-3.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTOSHEET 2

Figure: 10-3

URS

Photo Location 9 View west from within AGL site boundary

Photo Location 11N - View north from proposed power station site

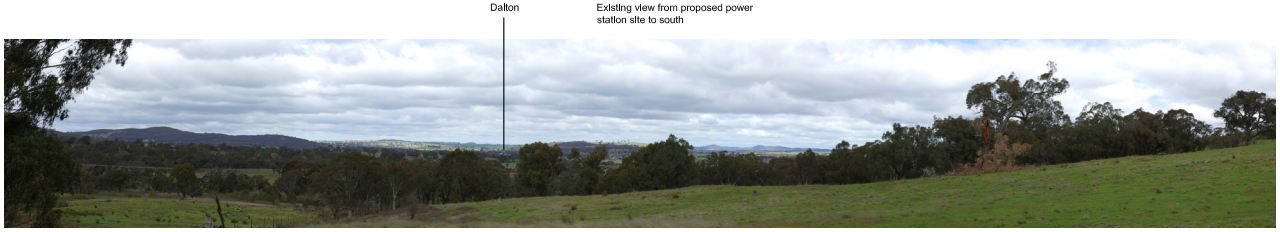


Photo Location 11S - View south from proposed power station site

Photo Location 11E - View east from proposed power station site

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-3.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTOSHEET 3

Figure: 10-4

URS

Photo Location 12 View north east from Cowper Street

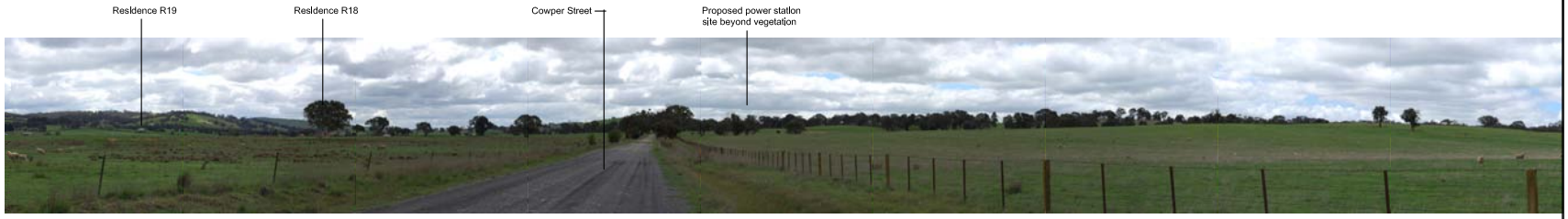


Photo Location 13 View north from Cowper Street

Photo Location 14 View north from Cowper Street

Photo Location 15 View north from Boorowa Road

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-5.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTOSHEET 4

Figure: 10-5

URS

Photo Location 16 View west from Alton Lane

Photo Location 17 View west from Wheeo Road (along existing transmission line easement)

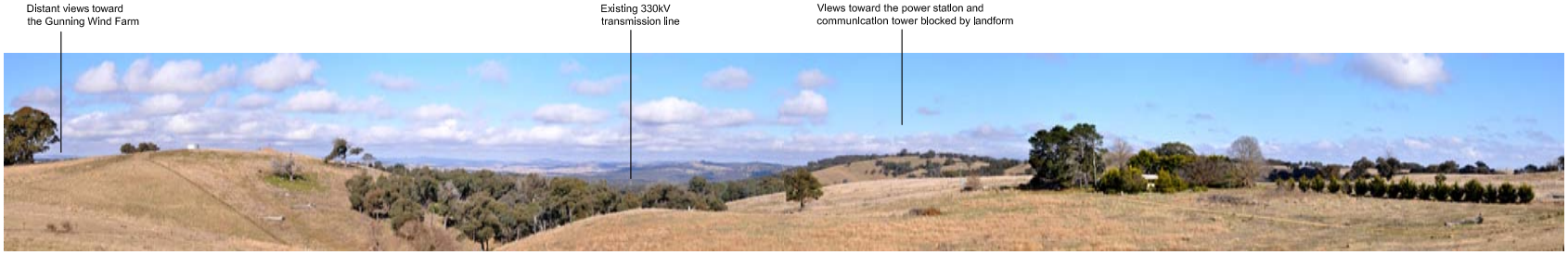


Photo Location 18 View west to south from Wheeo Road

Photo Location 19 View south from residential access road

Drawn: AO	Approved: LO	Date: 24/02/2011
Job No.: 43177661	File No.: 43177661.10-6.dwg	

Client: AGL

Project: DALTON POWER PROJECT

Title: PHOTOSHEET 5

Figure: 10-6

URS

Chapter 10 Landscape and Visual

10.5 Assessment of Visual Impact

10.5.1 Introduction

The potential visual impact of the Facility would result primarily from the combination of two factors:

- The level of visibility or extent to which the Facility structures would be visible from surrounding areas.
- The degree of visual contrast between the Facility structures and the capability of the surrounding landscape to visually accommodate them.

The potential visual impact from particular view locations is strongly dependant on the level of visibility from that location, which in turn is dependant on a number of criteria which are defined in **Table 10-1**.

10.5.2 Visibility

Visibility is a measure of the extent to which particular structures of the Facility would be visible from surrounding areas and considers the relative number and type of viewers, the period of the view, view distance and context of the view.

The underlying rationale for this component of the visual assessment is that, if a part of the Facility is not visible from a particular area then the potential visual impact would be nil. Similarly, if the number of people who would potentially see portions of the Facility is low, then the visual impact would be low compared to a situation in which a large number of people have the same view.

The distance between the Facility and the potential viewers has been illustrated as a series of concentric band widths extending out from the proposed site across the landscape. Individual view locations can be identified and assessed in relation to their distance and the degree of potential visual impact.

The influence of distance on visibility results primarily from two factors:

- With increasing distance the proportion of the horizontal and vertical view cone occupied by the Facility would decline.
- As the view distance increases so does the atmospheric effects resulting from dust and moisture in the atmosphere, which tends to make elements of the Facility appear grey, thus reducing the contrast between the Facility and the background against which they are viewed.

Visual simulations have been developed for P1, P2, P4, P7 and P16 (refer **Figure 10-2**) to present the possible visibility of the Project from potential view locations. These are shown in **Figures 10-7** to **10-11**.