

Visual Assessment – Summary of Key Outcomes

Electricity generated by the Buronga Peaking Power Plant would be connected to the grid network via the existing TransGrid Buronga switching station adjacent to the development site.

The gas turbine exhaust stacks, which are the highest structures, have been assumed in this “worse case” assessment as being up to 20m high. However, subject to final plant selection, design parameters and air emission considerations, the final exhaust stack heights may be between 13m and 20m high.

The landscape and visual assessment carried out for the proposed Buronga Peaking Power Plant involved a comprehensive evaluation of the visual character of the landscape surrounding the proposed site. A primary objective of the visual assessment was to determine the likely visual impacts of the proposed facility on people living and working in, or travelling through surrounding areas.

A total of 10 view locations were selected and assessed. The main components of the proposed Buronga Peaking Power Plant that have the potential to be visible from surrounding areas include three exhaust stacks up to 20m high; gas turbine enclosures and air inlet ducts up to 10m high, and fuel and water storage tanks up to 8m high.

An assessment of the visibility rating for each view location indicated that:

- 5 of the 10 view locations have been determined to have a **NIL** visibility rating; and
- 5 of the 10 view locations have been determined to have a **LOW** visibility rating.

No residential view locations were determined to have a direct line of sight toward the proposed facility.

This visual assessment concluded that the Buronga Peaking Power Plant would have a low visual impact on people in areas surrounding the site due to a combination of the following factors:

- existing vegetation and natural landforms generally screen the majority of views to the site and would, in most instances, screen the gas turbines, exhaust stacks and associated infrastructure from surrounding view locations;
- distant and partial views to the upper portions of the exhaust stacks may occur from portions of the Arumpo Road corridor, although the majority of these views would generally be restricted to areas of unoccupied agricultural pasture land surrounding the proposed facility;
- the exhaust stacks, which are the highest structures (up to 20m high), would only be fully visible from sections of the adjacent Arumpo Road corridor, with a duration of view generally less than 1 minute from passing vehicles, and from areas within the adjacent TransGrid switching station;
- the selection and application of appropriate colours to the power plant structures would be selected to blend with the surrounding landscape and utilise non-reflective materials;
- where visible, the proposed power plant would be viewed within the context of the existing TransGrid switching station facility, which contains a number of industrial structures of a scale and form similar to components of the proposed facility;

Chapter 9**Visual**

- emissions discharged from the gas turbine exhaust stacks will generally not be visible; and
- in the longer term, tree planting around the boundary of the proposed power plant would provide additional screening from the Arumpo Road and surrounding areas.

9.1 Introduction and Methodology

9.1.1 Introduction

The landscape and visual assessment carried out for the proposed Buronga Peaking Power Plant involved a comprehensive evaluation of the existing visual character of the landscape surrounding the proposed site, and an assessment of the potential visual impacts that could result from the construction and operation of the proposed facility.

A primary objective of the visual assessment was to determine the likely visual impacts of the Buronga Peaking Power Plant on people living and working in, or travelling through surrounding areas.

The methodology for this assessment comprised the following activities:

- desktop study addressing visual character of the surrounding area;
- fieldwork; and
- assessment of visual impact.

9.1.2 Desktop study

A desktop study was undertaken to identify the potential view catchment of the proposed facility. This was carried out by reference to 1:50,000 scale topographic and orthophoto maps as well as 1:50,000 scale 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 assessment.

The desktop study identified the visual character of the surrounding landscape including features such as the site context, landform and elevation.

The desktop study also identified and mapped a number of potential view locations from which the proposed facility, or upper portions of the proposed power plant structures, may be visible.

9.1.3 Fieldwork

The fieldwork involved:

- a detailed inspection to determine the potential extent of visibility of the proposed plant;
- determination of the various view locations from which the proposed plant could potentially be visible; and
- preparation of a record of each view location assessed.

Photographs taken during the fieldwork were used for reference during the assessment process however each view location visited was recorded and noted in the field, and whilst photographic material provides a useful resource, it is not essential in the determination of visibility ratings.

Chapter 9

Visual

9.1.4 Assessment of visual impact

The potential visual impact of the Buronga Peaking Power Plant would result primarily from the combination of two factors:

- the level of visibility or extent to which the plant structures would be visible from surrounding areas; and
- the degree of visual contrast between the plant structures and the landscape surrounding the site that would form the visible background from surrounding view locations.

The visibility rating is generally determined by a combination of factors including:

- the category and type of situation from which people may view the proposed plant (e.g. resident or motorist);
- the potential number of people with a view toward the proposed plant from any one view location;
- the distance between the viewer and the proposed plant; and
- the duration of time for the viewer may view the proposed plant.

An underlying rationale for the visual assessment is that if people are not normally present at a particular view location, such as arable or scrub pasture areas, then there is likely to be a nil visual impact at that location.

9.2 Buronga Peaking Power Plant

Details of the various key components of the Buronga Peaking Power Plant are described in detail in **Chapter 4** of this Environmental Assessment. A summary of the key visual aspects of the proposed power plant is presented below.

The Buronga Peaking Power Plant comprises the following key components that have the potential to be visible from surrounding areas:

- three gas turbine enclosures (incorporating air inlet, gas turbine, generator) generally up to 10m high depending upon final plant selection and three associated exhaust stacks (up to 20m high);
- three electricity step-up transformers and associated equipment for connection to the existing TransGrid switching station;
- control room incorporating offices and ablutions, switch room, workshop and auxiliary structures;
- fuel and water storage tanks generally up to 8m high; and
- a gated security fence around the proposed facility.

Electricity generated by the Buronga Peaking Power Plant would be connected to the existing high voltage grid network through the adjacent TransGrid switching station.

9.3 Visual Character of the Surrounding Landscape

9.3.1 Site Context

The general location of the proposed Buronga Peaking Power Plant site is illustrated in **Figure 9-1**.

The power plant site is proposed to be accessed from the Arumpo Road via a slip lane configured to RTA and Shire Council standards.

The local landscape pattern is generally defined by scrub pasture with areas of cultivated agricultural land for crop production. Land to the north and west of the proposed facility is generally scrub pasture for sheep and cattle grazing. **Figures 9-5 to 9-8** illustrate the surrounding landscape.

Mature trees are present in scattered groups and denser clumps in the vicinity, and across, the general area of the proposed facility. Mature tree height is generally around 10m to 15m.

One residence was recorded within a three kilometre radius of the Buronga Peaking Power Plant, located to the north of Lake Gol Gol. Occasional traffic (around four to six vehicles an hour) was noted on the Arumpo Road during the period of the visual assessment site inspection.

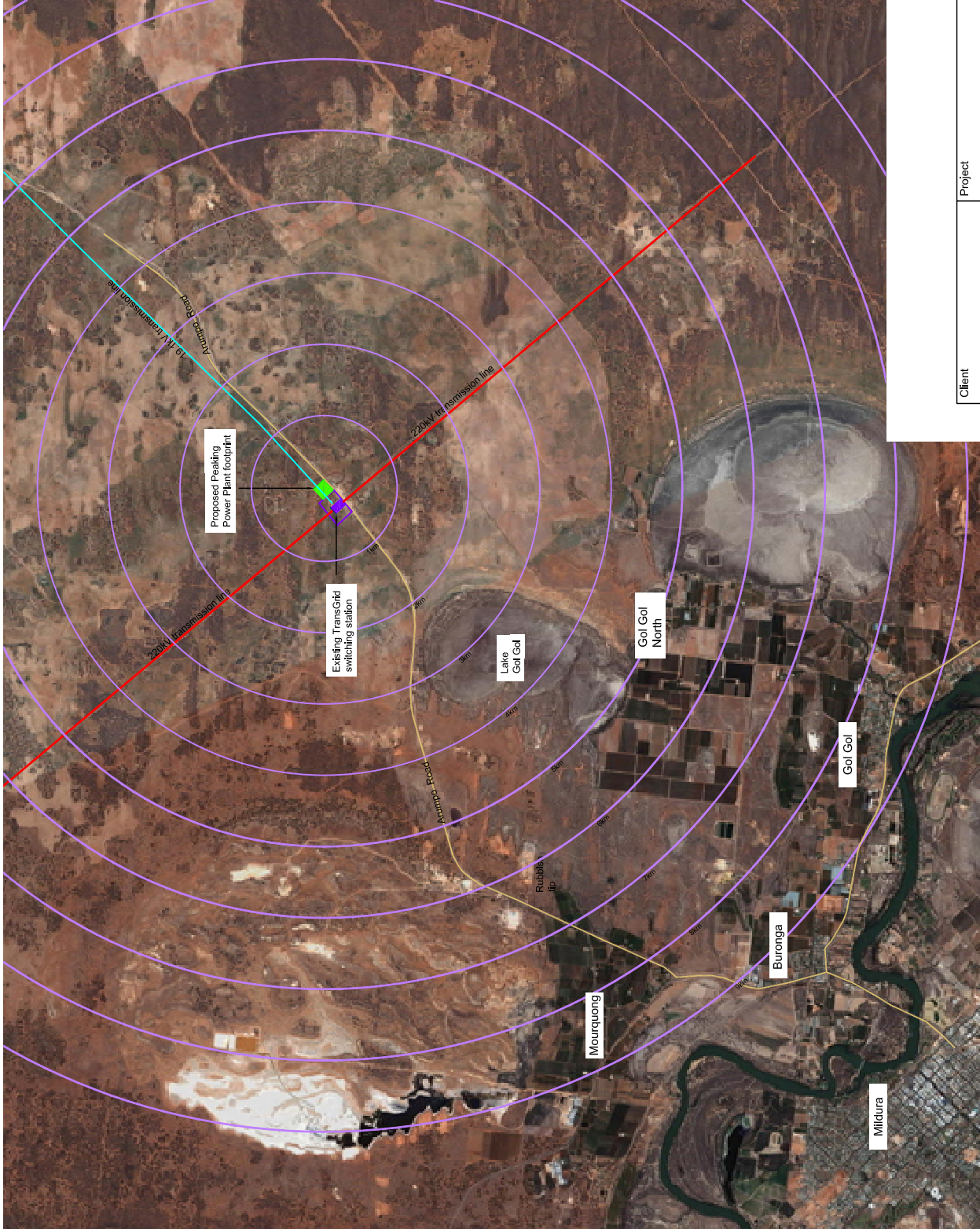
The TransGrid Buronga 220kV Switching Station is located to the south west boundary of the proposed facility and contains a number of large scale electrical structures visible from surrounding areas.

The Arumpo Road corridor runs south west to north east along the boundary of the proposed facility. The sealed road rises gently to the north east and disappears from view over a crest at around 60m AHD when viewed from the road adjacent to the proposed facility.

Figures 9-5 to 9-8 generally illustrate the surrounding landscape.

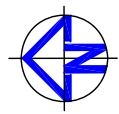
The landscape surrounding the proposed Buronga Peaking Power Plant site contains a number of constructed elements that contribute to the local visual character, and includes:

- a TransGrid 220kV switching station, including transformers, transmission lines, poles and auxiliary equipment;
- transmission line corridors;
- local sealed and unsealed roads; and
- residential dwelling and agricultural structures including sheds, fences and a rodeo ground.



LEGEND

- Buronga Peaking Power Plant footprint
- Existing TransGrid switching station
- Existing 220kV transmission line
- Existing 19.1kV transmission line
- 1km distance marker



Client	INTERNATIONAL POWER (AUSTRALIA) PTY LTD	Project	ENVIRONMENTAL ASSESSMENT BURONGA PEAKING POWER PLANT			Title GENERAL LOCATION PLAN
						
		Drawn: AH	Approved: WB	Date: 07/12/07	Figure: 9-1	
		Job No: 43177457		File No: 431774567001		

9.3.2 Landform and Elevation

Landform is a key influence on the extent to which the proposed Buronga Peaking Power Plant may be visible from surrounding areas. The major aspects of landform and elevation are illustrated in **Figure 9-2** and summarised below:

- the proposed plant would be constructed on a generally level earth bench with minor grading to create a positive fall for surface drainage;
- the construction bench is expected to be around 0.5 to 0.8m above existing ground level at around 48m AHD;
- the exhaust stacks, as the tallest proposed elements of the proposed facility, would extend to 13m to 20m high above the construction bench, up to 68m AHD;
- the existing TransGrid switching station is built on a level earth bench up to 2m above sloping natural surface levels.
- the landform to the east and west of the proposed site is generally level, with some local grading up to the road corridor; and
- the landform falls very gently from north west to south west across and beyond the existing switching station and proposed site, and visually appears generally level.

9.3.3 Visibility Catchment of the Peaking Power Plant

The visual assessment involved:

- a detailed field inspection to determine the potential extent of visibility of the proposed plant; and
- determination of the various situations from which the proposed facility could potentially be visible from surrounding areas.

The results of the potential view catchment are illustrated in **Figure 9-3** and key aspects are summarised by the following points:

- the primary visibility catchment is generally restricted to localised views within the immediate vicinity of the proposed facility, and includes around a 2km length of the Arumpo Road as well as areas of scrub and pasture surrounding the proposed Buronga Peaking Power Plant. The primary catchment also includes areas from within the adjoining TransGrid switching station, although some views toward the proposed facility will be blocked by built structures within the TransGrid facility;
- a combination of trees and gently undulating landform generally block potential views to the proposed plant from view locations in the surrounding area. Views to the upper portions of the exhaust stacks may occur from a limited number of surrounding view locations, although the majority of these would occur from rural land surrounding the proposed facility, as well as short sections of Arumpo Road; and
- there were no dedicated public lookouts identified in the immediate area that would have views toward the proposed plant.

Chapter 9

Visual

9.3.4 Photo Locations

A series of photographs were taken during the course of the fieldwork to illustrate views from view locations that were assessed as part of the visual assessment.

The photographs were taken with a digital SLR camera at a 50mm focal length, which is generally accepted as most closely representing the focal length of the human eye.

Individual photographs were stitched together to provide a panoramic photomontage to illustrate the view from each view location. The panoramic photomontages have been annotated to identify key aspects or structures located within the view.

The photo locations are illustrated in **Figure 9-4**, and panoramic photomontage illustrated in **Figures 9-5 to Figure 9-8**.