1. Introduction

This chapter provides information on the proponent - TRUenergy Tallawarra Pty Ltd (TRUenergy), describes the project and its objectives, outlines the environmental impact assessment process and identifies the structure of the Environmental Assessment report.

1.1. Overview

This report has been prepared to support TRUenergy's project application for the construction and operation of the proposed Tallawarra Stage B Gas Turbine Power Station. It addresses the requirements for the preparation of an Environmental Assessment for the project, issued by the Director-General of Planning (DoP) under section 75F of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The report supports an application to the Minister for Planning under section 75J (1) for project approval.

1.2. Background

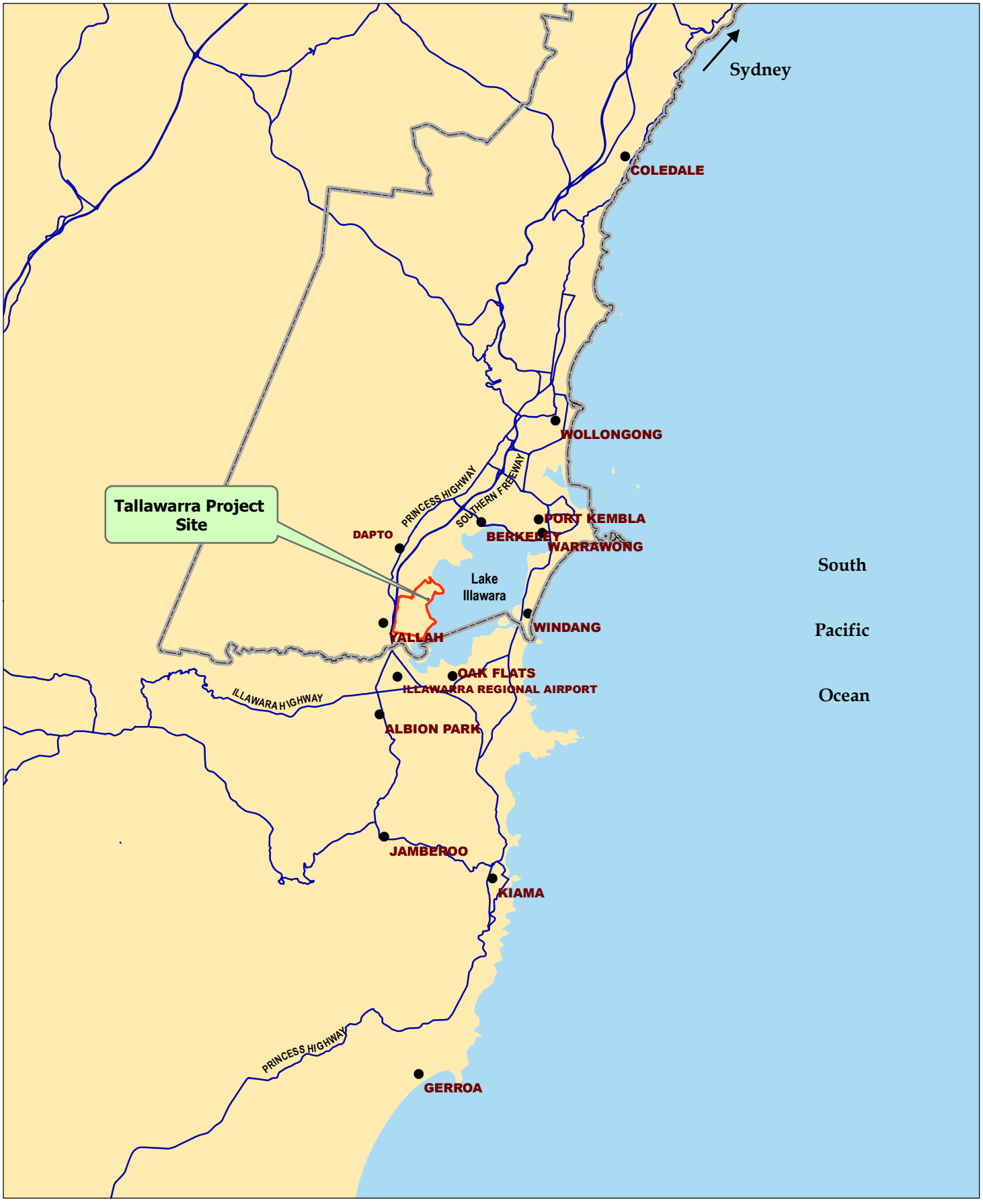
The Tallawarra power station site (or project site) is located in Yallah, on the western foreshore of Lake Illawarra. It is approximately 80 kilometres south of Sydney and 13 kilometres southwest of Wollongong. The project site and its location on the south coast of NSW are shown in **Figure 1-1**.

A coal fired power station operated on the Tallawarra site between 1954 and 1989. The plant and much of its ancillary buildings have since been demolished and the operational areas of the site remediated.

In 1998, the then owner of the site, Pacific Power, prepared an Environmental Impact Statement to support the Development Application for a new Combined Cycle Gas Turbine (CCGT) power station on the site of the previous coal fired power station. Wollongong City Council granted development consent for the CCGT power station in 1999.

The Tallawarra power station site and the surrounding Tallawarra Lands (a total area of 565 hectares) were purchased in April 2003 by TRUenergy (refer to **Figure 1-2**) and work on the new CCGT power station began in 2004, under the terms of the 1999 development consent. This CCGT power station was recently commissioned and will be referred to as Tallawarra Stage A. The proposed power station subject to this Environmental Assessment will be referred to as the Tallawarra Stage B power station.

The Tallawarra Stage B power station will utilise much of the existing infrastructure associated with Tallawarra Stage A, including overhead power lines and the concrete water canals connected to Lake Illawarra (refer to **Figure 1-3**). Operations will require no more than 35 hectares of the 565 hectare site.



Legend

- Wollongong City Council
- Main Highways
- Tallawarra Lands

Data Source: Topographic data by Streetworks

0 3.5 7
Kilometres
1:300,000 @ A4

SINCLAIR KNIGHT MERZ
SKM

Figure 1-1 - Location Plan

Projection: GDA94 MGA Zone 56

EN02239 - Tallawarra Stage B Power Station

July 22, 2008
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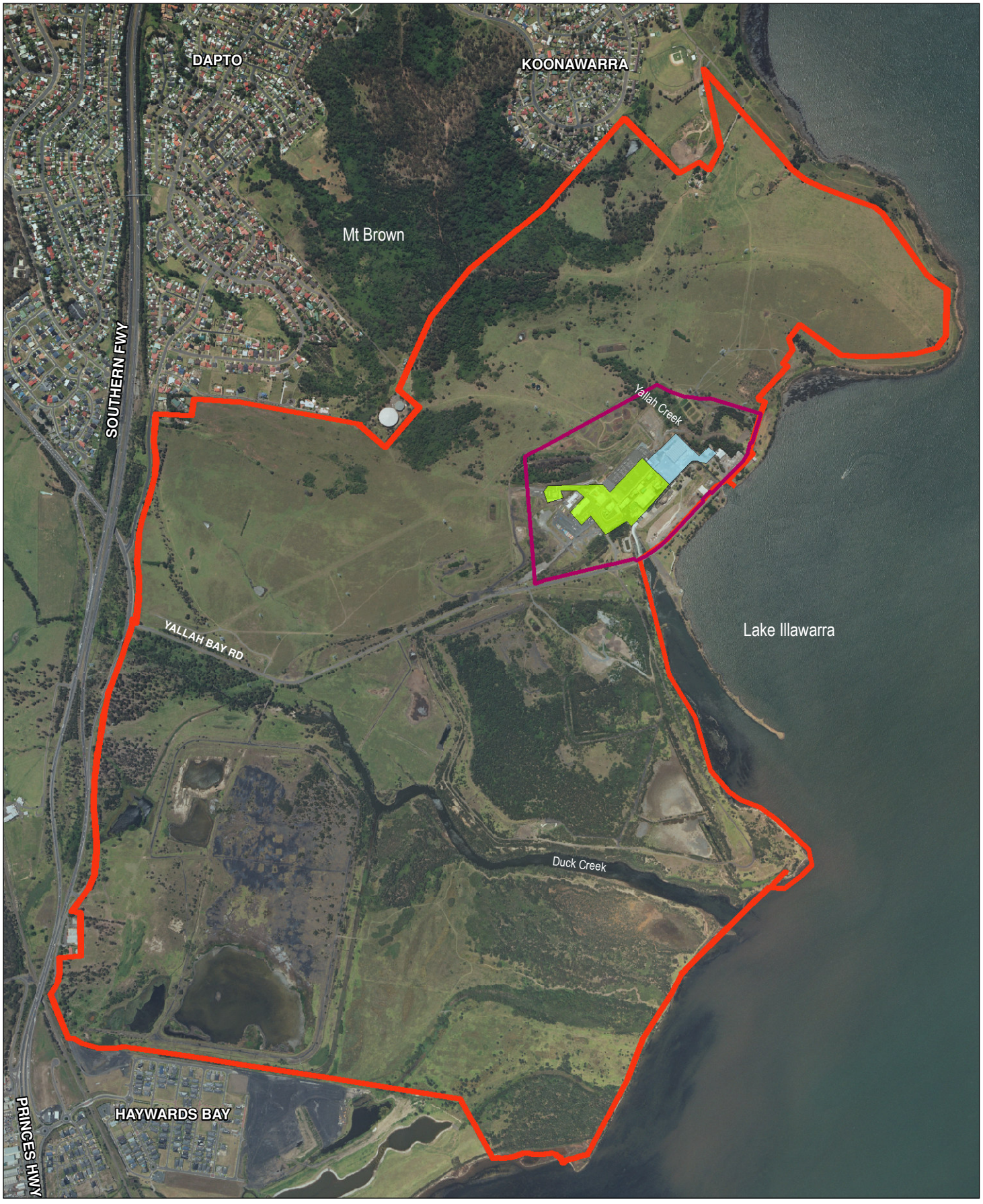

Legend

- Proposed Tallawara B
- Tallawara A
- Tallawarra Land Border
- Power Station Site Boundary

Source: Aerial supplied by TRUenergy, Topographic data by Streetworks

0 250 500

Metres

1:17,000 At A4

SINCLAIR KNIGHT MERZ SKM

Figure 1-2 - Site Layout

Projection: GDA94 MGA Zone 56

EN02239 - Tallawarra Stage B Power Station

February 23, 2009
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Figure 1-3 - Existing Facilities & Approved CCGT Power Station (Stage A)

Source: Aerial supplied by TRUenergy
Topographic data by Streetworks.
Projection: GDA94 MGA Zone 56

EN02239 - Tallawarra Stage B Power Station

February 24, 2009
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The recently commissioned Tallawarra Stage A power station, now in commercial operation, has a nominal 400MW capacity and is supplied with natural gas via a lateral line from the Eastern Gas Pipeline (EGP) which runs from the west of the site. The electricity produced is being distributed using a purpose built switchyard connecting with existing transmission lines.

The power station will assist TRUenergy in meeting its expanding retail base electricity demands and will help to maintain supply reliability for businesses and households in NSW.

As part of a separate approval process, TRUenergy is investigating future land use options for the remainder of the Tallawarra Lands. TRUenergy gained approval for its pre-rezoning submission from Wollongong City Council in September 2005 when council resolved to prepare a draft Local Environmental Study (LES) for the site. A LES has since been prepared and was adopted by Wollongong City Council in April 2007. The LES identified a range of preferred categories for development including industrial, commercial, residential and conservation areas.

Wollongong City Council has included the Tallawarra Lands in its draft Local Environment Plan 2008 (LEP) which is currently on exhibition. The LEP zonings for Tallawarra reflect the outcomes and recommendations of the LES.

Any future development as part of the Tallawarra Lands, according to the draft LEP, will be taken into consideration as part of the environmental assessment for the Tallawarra Stage B power station development.

TRUenergy now wishes to proceed with Stage B of the project – proposing either a CCGT power station to provide intermediate to base load electricity or an Open Cycle Gas Turbine (OCGT) power station to supplement electricity during times of peak demand. The Tallawarra Stage B power station will be constructed immediately adjacent to the Tallawarra Stage A power station.

1.3. Overview of the project

The Tallawarra Stage B project comprises:

- power station plant comprising:
  - 2 or 3 open cycle gas turbine generators with a nominal capacity of 300-450MW, or
  - one combined cycle gas turbine generator with a nominal capacity of 400MW;
- turbine condensate cooling comprising wet cooling towers with lake water make-up (CCGT only);
- distillate tank and unloading station (OCGT only);
- high voltage switchyard (extension) comprising high voltage connection to the unit transformers and switchgear;

- transmission line connection to the existing 132kV network;
- connecting gas pipelines, gas metering and pressure reduction station;
- potable/fire water tank;
- demineralised water tank;
- electrical module; and
- emergency diesel generator.

The project will also utilise, where possible, existing infrastructure associated with the Tallawarra Stage A power station including:

- existing gas supply lateral;
- control room, administration, amenities and workshop building;
- internal roads and car parking;
- water treatment plant (with possible augmentation);
- domestic wastewater treatment and disposal system;
- waste management;
- security fencing; and
- landscaping and tree planting to provide visual screening of the facility.

The Tallawarra Stage B power station will use the natural gas supplied from an extension to the existing lateral connecting the Tallawarra Stage A power station to the EGP. It will require separate gas conditioning and metering equipment adjacent to the Tallawarra Stage A gas conditioning and metering equipment.

The Tallawarra Stage B plant will generate electricity at a voltage in the range of 11,000-22,000 volts, depending on the type of gas turbine selected. The voltage will be increased to 132,000 volts by a transformer prior to being fed via a switchyard to the transmission lines crossing the site.

Determining the nature of the market need (i.e. base load electricity or peaking supply) will be subject to detailed market analysis following approval of the project. Subject to the results of TRUenergy's market evaluation of NSW electricity demand projections, the Tallawarra Stage B project will either:

- operate to supply electricity at short notice during periods of peak demand or system emergency situations (OCGT plant); or
- operate to provide a secure intermediate/base load supply of electricity to the local and regional electricity market (CCGT plant).

1.4. Project objectives

The objectives of the Tallawarra Stage B project are to:

- provide a secure supply of electricity to the local and regional markets;
- facilitate TRUenergy's objectives of entering the NSW electricity market;
- produce electricity in an environmentally responsible manner by using natural gas as a fuel;
- match power supply requirements of the markets to their needs;
- understand and effectively manage environmental impacts; and
- contribute to the local, regional and State economies through capital expenditure, employment and economic supply of electricity.

1.5. The proponent

The proponent, TRUenergy Tallawarra Pty Ltd (TRUenergy) is part of the CLP Group. The CLP Group strives to be the leading investor-operator in the Asia-Pacific electric power industry. CLP operates a vertically integrated electricity generation, transmission, distribution and retail business in Hong Kong, and invests in electricity businesses in Australia, India, China, Taiwan and Thailand. TRUenergy comprises the former TXU Australia, Yallourn Energy and Auspower businesses.

TRUenergy's business spans energy generation, retailing and portfolio management, providing a strong integrated platform from which to harness further growth and reduce risk. TRUenergy is a provider of both electricity and natural gas to residents and businesses in Victoria, South Australia, New South Wales and Australian Capital Territory, as well as providing electricity in Queensland and to businesses in Tasmania. It also owns power stations in Victoria, South Australia and has the Tallawarra Stage A power station under development in New South Wales. In addition to the power stations, TRUenergy has a number of long term agreements with renewable energy suppliers including hydro, wind and biomass.

As a substantial investor, generator and retailer in the Australian energy sector, TRUenergy recognises it has a responsibility to take a lead role in the development and implementation of effective carbon reduction solutions. TRUenergy has developed a Climate Change Strategy as its blueprint for achieving such reductions, which includes a commitment to reducing emissions by 60 percent by 2050 on a 1990 baseline.

TRUenergy has recently commissioned the Tallawarra Stage A CCGT plant, which will be Australia's most efficient gas-fired generation facility. The Tallawarra Stage A plant will result in greenhouse gas emissions approximately 70 percent lower per MWhr generated than traditional coal-fired power stations.

1.6. Planning approvals

A full description of the planning approval process is contained in **Chapter 2**.

The proposal is classified as a 'Major Project' requiring approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), as it is of a class of development listed in Schedule 1 of the State Environmental Planning Policy (Major Projects) 2005. The Minister for Planning confirmed in a letter dated 15 September 2007 (refer to **Appendix A**) that in his opinion the development meets the requirements under Clause 6(1) of the State Environmental Planning Policy (Major Projects) 2005.

As of 26 February 2008, all new power stations in NSW with a capacity greater than 250MW were declared as 'critical infrastructure' under section 75C of the EP&A Act, provided applications are lodged prior to 1 January 2013. Therefore, the proposal is also classified as a critical infrastructure project.

The Minister for Planning is the approval authority for development under Part 3A of the EP&A Act. This Environmental Assessment report has been prepared to support the application made by TRUenergy for project approval under the Act.

1.7. Structure of the report

The purpose of this EA is to enable consideration of the implications in proceeding with this development. The EA has been prepared in accordance with Clauses 75E and 75F of the EP&A Act. An overview of the layout of this EA is provided below.

Executive Summary: provides a brief overview of the project, key environmental assessment results and an outline of proposed environmental management procedures.

Chapter 1 – Introduction: provides background to and sets the context for the project.

Chapter 2 – Relevant statutory provisions: describes the planning context of the development, including the applicability of Commonwealth and State legislation, State and regional planning policies and permissibility.

Chapter 3 – Strategic justification: outlines the strategic justification for the project and alternatives including consideration of the alternative of not proceeding.

Chapter 4 – Stakeholder consultation: describes the stakeholder consultation process, including a checklist of the Director-General's requirements (incorporating the requirements of other agencies) and the environmental issues identified as part of this process for detailed consideration in the EA.

Chapter 5 – **Project description:** contains a detailed description of the proposed development.

Chapter 6 – Existing environment: provides an outline of the existing environment in relation to the environmental issues identified for the proposed power station.

Chapter 7 – Open cycle gas turbine: provides an assessment of the environmental issues identified for an open cycle gas turbine, including the mitigation measures required to manage those issues.

Chapter 8 – Combined cycle gas turbine: provides an assessment of the environmental issues identified for a combined cycle gas turbine, including the mitigation measures required to manage those issues.

Chapter 9 – **Draft statement of commitments:** details the draft Statement of Commitments proposed to be adopted throughout the life of the Project in order to mitigate impacts.

Chapter 10 – Conclusion: provides an overall conclusion with consideration of the benefits and impacts of the proposal.

Chapter 11 – References: contains reference information including a list of references referred to in the EA.

Chapter 12 – Abbreviations and glossary: provides a list of abbreviations and a glossary of technical terms used in the EA.

Appendices to this report provide information relevant to the Environmental Assessment. Appendices included in the report are listed below.

Appendix A – Stakeholder Correspondence

Appendix B – Air Quality Assessment

Appendix C – Plume Rise Assessment

Appendix D – Greenhouse Gas Emission Assessment

Appendix E – Noise Assessment

Appendix F – Preliminary Hazard Analysis

Appendix G – Water Quality Calculations