# Tallawarra B

Plume Dispersion Device – Engagement Summary Report



**Energy**Australia

PROJECT	Tallawarra B Power Station	DATE	20 October 2023
GROUP	Government and Stakeholder	STATUS	FINAL
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## **1** Introduction

This report summarises the stakeholder and community consultation activities that EnergyAustralia has completed ahead of the modification and installation of the Plume Dispersion Device (PDD) at the Tallawarra B Power Station. These activities have built on the work completed during the project's Environmental Impact Statement exhibition and demonstrate how EnergyAustralia has continued to engage with community members and stakeholders, and how these groups have influenced the project.



#### 1.1 Plume Dispersion Device

Tallawarra B Power Station is being built to the immediate east of the existing Tallawarra A Power Station on the western edge of Lake Illawarra, approximately 4.5km northeast of Shellharbour Airport. Tallawarra B is the first open cycle gas turbine (OCGT) in Australia which will be hydrogen enabled and one of the first in the world. The OCGT was the chosen design over a combined cycle gas turbine (CCGT) because it is faster to start and can provide electricity into the grid more quickly when there is high demand. Exhaust gases from the OCGT will be discharged via a stack which will have a PDD.

The PDD sits on top of the Tallawarra B Power Station exhaust stack.

Generally, PDDs have a number of outlets which allow the exhaust gases from the turbine to travel out of the stack in a number of locations, allowing the exhaust gases to mix with the outside air more quickly, cooling the air and slowing down its rise. PDDs are used for a number of different applications all over the world, including exhausts on naval vessels and cruise ships, offshore oil platforms, and other power stations.

#### In focus: Other Australian airports operating near plume sources

Tallawarra is just one example of a plume source near an airport. Others include:

- Bankstown Airport, which is about 8km from Smithfield Power Station
- Brisbane Airport, which is about 4km from Incitec Pivot Fertilisers on Gibson Island
- Broome Airport, which is about 4km from Broome Power Station
- Bullawa Aerodrome is 8km from Uranquinty Power Station
- Darwin Airport, which is about 10km from various LNG plants
- Gladstone Airport, which is about 10km from various LNG plants and less than 2km from Gladstone Power Station
- Newcastle Airport, which is about 10km from Tomago Aluminium
- Oakey Airport, which is about 5km from Oakey Power Station. Oakey Airport includes an Australian Army aviation training centre
- RAAF Amberley Base, which is about 10km from the Swanbank Power Station

#### 1.2 Approach and Engagement Objectives

The objectives of the communication and engagement activities ahead of an investment decision were to:

- Inform and advise the community and stakeholders on work being completed on the Tallawarra B Power Station and how the project team were working to meet the provisions of the project's Conditions of Approval, specifically Condition 1.6.
- Engage with the community and stakeholders on the PDD and address any points of concern.
- Encourage ongoing participation in the conversation about the PDD, especially with regard to aviation safety.

#### 1.3 Community Communications Plan

An overarching Community Communications Plan was prepared to support the Tallawarra B Power Station project. The Plan outlines different phases and methods of engagement. This Plan was used as a guiding principles document to the engagement completed on the PDD.

An overview of the purpose, activities, and outcomes of this engagement phase are provided below.

Purpose	Activities	Outcomes
Inform community and stakeholders of how the PDD operates in the context of Tallawarra B	Community newsletters, PDD frequently asked questions fact sheets, individual briefings	Community understands the process that EnergyAustralia has followed and the role the PDD plays as part of the safe operation of the Tallawarra B Power Station.
Seek feedback from the key stakeholders	Collaboration on key issues	Stakeholder buy-in and acceptance that EnergyAustralia has listened to their concerns and worked through key issues.
Strengthening partnerships with key stakeholders		Willingness to continue to cooperate into operation with a partnership underpinned by mutual respect.

### 1.4 Summary of Engagement Activities

Stakeholder engagement with government agencies, local governments and state-owned corporations and entities, the Shellharbour Airport, and the local community commenced in 2021. EnergyAustralia's engagement approach on the PDD has been split into two phases. Phase 1 predated project construction and was predominantly focussed on informing stakeholders and the community about the project and its key features. This phase included engagement with Shellharbour City Council to agree on an Aviation Impact Assessment Report which documented aviation mitigation measures to be implemented.

Phase 2 (the focus of this report) commenced in February 2023 and was focussed on key stakeholders before expanding to include the wider community.

Engagement in phase 2 is ongoing and is occurring through a number of different forums, including one-on-one engagement and working groups.

The Tallawarra Community Liaison Group has met in-person twice (March and August 2023) and received a briefing on the PDD on both occasions.

Community engagement was conducted through:

Activity	Outcome
Stakeholder briefings	
Discussions were held with a variety of stakeholders including government agencies, businesses, industry bodies, and tourism and community groups as well as elected officials.	13 key stakeholders from a variety of groups were contacted and briefed in person.
Quarterly Project Newsletter	
One newsletter was released during the consultation period (July 2023).	Each edition of the newsletter distributed to 2,500 households and businesses in the local.
Frequently Asked Questions Documents	
The project team has published a PDD FAQ document and a Civil Aviation Safety Authority Advisory Circular FAQs	The local community has access to high quality and accurate information quickly and easily, which explains challenging concepts in Plain English.
Website (energyaustralia.com.au/tallawarra-b)	
The project's dedicated website continues to be a powerful ongoing source of information for the community and stakeholders and this was updated with the latest information.	The local community has access to information quickly and easily.

# 2 Details of Engagement

#### 2.1 PDD Frequently Asked Questions Document

In May 2023, the project team published a Frequently Asked Questions (FAQs) document about the PDD. This detailed the development of the PDD, the process through which the PDD, and ultimately the operation of Tallawarra B, would be approved. This FAQs document was published on the project's website and provided to key stakeholders and interested groups. Infographics which simplified the information were developed to improve the broader understanding of the PDD.



### 2.2 Tallawarra Quarterly Newsletter

In July 2023, the project newsletter was distributed to 2,500 letter boxes surrounding the Tallawarra Power Station. This quarterly newsletter keeps the community informed with the latest project information. The July edition featured a story on Tallawarra B's progress, including DPE's approval of the PDD and next steps in the testing and commissioning of Tallawarra B.



### 2.3 Key stakeholder briefings

During the project's construction, a number of meetings were held between the project team and key stakeholders. Objectives of these meetings included project updates, addressing project interfaces and identifying issues, concerns or suggestions for improvement.

Since the beginning of 2023, 13 key stakeholders were provided with the opportunity to be briefed on Tallawarra B and the PDD and any implications for their organisation.

Key project stakeholders include:

- Wollongong City Council
- Shellharbour City Council
- Federal and State Members of Parliament
- Department of Planning and Environment
- Department of Regional NSW
- Environmental Protection Agency
- Greater Cities Commission
- Civil Aviation Safety Authority (CASA)
- Shellharbour Airport (and airport users)
- Regional Development Australia (Illawarra)

#### 2.4 Shellharbour City Council and Shellharbour Airport

Our engagement with Shellharbour City Council and Shellharbour Airport has significantly increased over the last six months. This is especially true of our engagement with the Shellharbour Airport Management and the Shellharbour Airport Users Group.

An overview of these meetings is provided overpage.

Meeting Date	Meeting Topics
5 April 2023	Introductory Session with Airport Management
	Discussion of the peer review process
	Next steps for EnergyAustralia in seeking DPE approval
3 May 2023	Briefing to Mayor, Councillors, and Senior Leaders at Council including Airport Management
	Discussion of the peer review completed by GHD, Aviation Mitigation Measures, and CASA Advisory Circulars
17 May 2023	Shellharbour Airport Users Group, Airport Management and other Council staff at Tallawarra.

Meeting Date	Meeting Topics
	Project team took the Users Group through the history of the PDD, its design development, the modelling, and the GHD peer review.
	Information on the Aviation Mitigation and Safety Measures was also presented.
15 August 2023	Briefing to Mayor, Councillors, and Senior Leaders at Council

Following the project team's last meeting with Council on 15 August 2023, EnergyAustralia has corresponded regularly with Shellharbour City Council CEO Mr Mike Archer who raised a number of concerns on Council's behalf. EnergyAustralia provided a comprehensive response to Council's concerns.

#### 2.4.1 Shellharbour Airport Users Group

As noted above, the project team hosted the Shellharbour Airport Users Group at Tallawarra Power Station on 17 May 2023 to provide an in-depth briefing on the project's development, the PDD, and the proposed Aviation Mitigation and Safety Measures. The briefing was provided by the Tallawarra B Project Director, supported by specialist consultants who advised EnergyAustralia on the design development of the PDD, completed the modelling of the plume and the impact of the PDD on its velocity, and advised on the aviation mitigation measures proposed. This briefing was part of the pilot awareness required as an aviation mitigation measure agreed with Shellharbour City Council in the Aviation Impact Assessment.

The two and a half hour briefing was followed by a brief tour of Tallawarra Power Station, including a look at the construction progress of Tallawarra B.

A copy of the presentation to this group is provided as an Appendix to this Report.

Since this meeting, the project team has had an ongoing dialogue with the Airport Users through the Airport Management. This has included a willingness to hear any suggestions they may have regarding additional aviation mitigation and safety measures.

The project team and Airport Management have corresponded on a fortnightly basis to ensure both parties are up to date with the latest information.

#### 2.5 Civil Aviation Safety Authority

EnergyAustralia has been working with CASA through the NSW Department of Planning and Environment (DPE) on the plume velocity and the PDD. This engagement predates construction commencing in 2021. For clarity, DPE is the approval authority and had taken advice from CASA as the subject matter expert and government authority in this field regarding the project's need for compliance with its advisory circulars.

On 27 March 2020, CASA advised that if the plume velocity at 700 feet above mean sea level (AMSL) does not exceed 6.1 metres per second (m/s), the risk to aviation is considered to be at an acceptable level of safety.

CASA's Advisory Circular (AC) *139-05 v 3.0 Plume Rise Assessments* is based on the use of the TAPM plume rise model. CASA has also relied on the Spillane plume rise model when providing advice to land use planning authorities.

The AC is predicated on plumes from a vent with a Gaussian vertical velocity distribution, and therefore the peak velocity of the plume will be twice the average velocity of the plume. It was CASA's position that if the plume average vertical velocity at the Critical Plume Height does not exceed 6.1 m/s (i.e. with a plume peak vertical velocity of 12.2m/s), the risk to aircraft operations is considered to be acceptable.

A February 2020 Plume Rise Assessment Report was based on the use of the Spillane model applied to a plume dispersion device (PDD) called a stack top plume diffuser. This report concluded that the plume average velocity at 700 feet would be approximately 5.6m/s.

Subsequent reports completed by specialist consultants engaged by EnergyAustralia and independent peer reviews completed by GHD confirmed that the PDD as currently designed met the requirements of CASA's Advisory Circular (AC) *139-05 v 3.0 Plume Rise Assessments* (now superseded) and the revised Advisory Circular *139.E-02 v1.0 Plume rise assessments*.

To satisfy Condition 1.6 of the project's planning approval, EnergyAustralia (or its specialist consultants) has prepared the following reports and assessments:

- The Tallawarra B OCGT Aviation Impact Assessment April 2020
- Supplementary Plume Rise Assessment for the Tallawarra B Power Station Aviation Impact Assessment – December 2020
- GHD Independent Review of Supplementary Plume Rise Assessment for the Tallawarra B Power Station Aviation Impact Assessment March 2021
- Further GHD Independent Review of Supplementary Plume Rise Assessment for the Tallawarra B Power Station Aviation Impact Assessment - July 2021
- Final GHD Independent Review of Tallawarra B Power Station Review of CFD Plume Rise Assessment April 2023

In March 2023, CASA advised that it does not have a role in approving the PDD and that DPE should refer to its Advisory Circular for any further guidance.

#### 2.6 Tallawarra Community Liaison Group meeting

The Tallawarra Community Liaison Group was formed in 2006 to provide advice and encourage discussion, ideas and collaboration from a range of key government and local stakeholders. During the most recent consultation on the PDD, two meetings were held (March and August 2023). An update on the PDD was provided at both meetings, including a presentation from the Project Director.

#### 2.7 Project Website

The project website (www.energyaustralia.com.au/tallawarra-b) is an ongoing source of information, resources and updates for community members and stakeholders. The latest details about Tallawarra B's progress, including information on the PDD, is clearly featured and readily available.

The project contact points included the project information line (1800 574 947) and email address (tallawarra.community@energyaustralia.com.au) which were available during the consultation period. Community and stakeholders were encouraged to contact the project team to discuss any questions or concerns they may have.

### Appendix

Presentation to the Shellharbour Airport Users Group – 17 May 2023









































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**Acknowledgment:** EnergyAustralia acknowledges the support of the NSW Government for the Tallawarra B Power Station Project.

**Public disclaimer:** The views expressed herein are not necessarily the views of the NSW Government. The NSW Government does not accept responsibility for any information or advice contained herein.

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